Certification of Continuing Suitability Environmental Report

Harmony Solar Project

Cass County, North Dakota

July 31, 2024

HARMONY SOLAR ND, LLC

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
2018 Application	Harmony Solar ND, LLC's July 2, 2018 Application for a Certificate of Site Compatibility
AC	alternating current
Aeronautics Commission	North Dakota Aeronautics Commission
AJD	approved Jurisdictional Determination
Applicant	Harmony Solar ND, LLC
Application	Harmony Solar ND, LLC's application to the North Dakota Public Service Commission for a Certificate of Continuing Suitability
Area M	Area M Consulting
BCC	Birds of Conservation Concern
BCR	Bird Conservation Region
BMP	best management practice
CCS	Certification of Continuing Suitability
Certificate or CSC	Certificate of Site Compatibility Number 58
Commission or NDPSC	North Dakota Public Service Commission
CUP	Conditional Use Permit
dBA	A-weighted decibels
DC	direct current
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	National Flood Insurance Program
GAP	Gap Analysis Program
gen-tie	generation tie
Geronimo	Geronimo Energy, LLC
GF AFB	Grand Forks Airforce Base
GIS	Geographic Information System
Harmony	Harmony Solar ND, LLC
ICBM	Intercontinental ballistic missile
IPaC	Information for Planning and Consultation
JD	Jurisdictional Determination
kV	kilovolt
MW	megawatt
NDCC	North Dakota Century Code
NDAC	North Dakota Administrative Code

Acronym/Abbreviation	Definition
NDDEQ	North Dakota Department of Environmental Quality
NDDOA	North Dakota Department of Agriculture
NDDOT	North Dakota Department of Transportation
NDDPR	North Dakota Department of Parks and Recreation
NDDWQ	North Dakota Division of Water Quality
NDGF	North Dakota Game and Fish Department
NDGISHUB	North Dakota GIS Hub
NDSSD	North Dakota State Seed Department
NDSWC	North Dakota State Water Commission
NG Renewables	National Grid Renewables Development, LLC
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NWP	Nationwide Permit
O&M	Operations and Maintenance
OSE	Office of the State Engineer
PCFM	Post-construction Fatality Monitoring
Project	Harmony Solar Project
Project Area	1,662-acre Project boundary
PV	photovoltaic
RRWRD	Rush River Water Resources District
SCADA	Supervisory Control and Data Acquisition
SHSND	State Historical Society of North Dakota
SPCC Plan	Spill Prevention, Control, and Countermeasures Plan
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish & Wildlife Service
USGS	U.S. Geological Survey
VMP	Vegetation Management Plan
WOTUS	Waters of the United States
WPA	Waterfowl Production Area
WQC	Water Quality Certification

1.0 INTRODUCTION

On February 26, 2019, the North Dakota Public Service Commission (NDPSC or Commission) issued Certificate of Site Compatibility Number 58 (CSC) to Harmony Solar ND, LLC (Harmony) for the Harmony Solar Project (Project), a 200 megawatt (MW) solar energy conversion facility in Harmony Township, Cass County, North Dakota (see Case No. PU-18-219).

Five years have passed since the issuance of the CSC. In accordance with North Dakota Century Code (NDCC) Section 49-22-17 and North Dakota Administrative Code (NDAC) Chapter 69-06-09, Harmony is submitting to the NDPSC a Certification of Continuing Suitability (CCS) for the Project. This Environmental Report was prepared in support of Harmony's CCS.

Harmony has also updated its Ten-year Plan; the updated plan was filed with the Commission on June 27, 2024 and a copy is provided in Appendix A.

1.1 Project Description

The Project is in Sections 10, 11, and 16, Township 140 North, Range 51 West, Cass County, North Dakota (Figure 1). The Project is a solar energy conversion facility that will have a nameplate capacity of up to 200 megawatts and projected average annual output of up to 407,336 megawatt-hours. The projected average annual output assumes a net capacity factor of about 23 percent. The energy delivered to the electrical transmission system will be approximately 405,877 megawatt-hours annually.

The 1,662-acre Project area (Project Area) is in the Agricultural District of Harmony Township and has not changed since the Commission considered the Project in 2018/2019 and issued the CSC (Figure 1). Project facilities remain similar to what was considered in the CSC, but Harmony has incorporated a different photovoltaic (PV) solar module (panel) into the Project layout than previously was considered. As a result, the Project layout has changed. A detailed description of the changes to the Project layout is presented in Section 1.1.

The Project facilities will include the updated solar modules and racking, inverters, security fencing, laydown areas, Project substation, an Operation and Maintenance (O&M) building, a gravel parking lot, on-site underground, or hybrid of underground and aboveground, electrical collection and communication lines, and at least two weather stations (up to 20 feet tall). All Project facilities will be within the security fence with the exception of the following segments of electrical collection lines:

- underground electrical collection lines connecting the solar arrays in Section 16 to Sections 10 and 11;
- three short segments (approximately 200-300 feet) of underground electrical collection lines connecting the solar arrays in Section 10 to solar arrays in Section 11; and
- electrical collection lines connecting the two blocks of solar arrays in Section 11 to the Project substation (see Figure 2).

The Project will interconnect to the existing electrical grid via a 345 kilovolt (kV) generation tie (gen-tie) line that will interconnect the Project substation to the existing Bison Substation located

in Township 140, Range 51, Section 11. The 345 kV gen-tie line will be less than a mile in length (current design is 0.4 mile or 2,200 feet). Pursuant to NDCC Section 49-22-03(6)(b), the Project's gen-tie line is not an "electric transmission facility" because it is less than one mile in length. As such, the gen-tie line is not within the Commission's siting jurisdiction, is not included in the CSC for the Project and is not described further in this Environmental Report. The gen-tie line has been permitted though Harmony Township and is shown on Figure 2 for reference.

Harmony remains committed to complying with the provisions of the CSC for the Project. Except for the Project layout changes described in Section 1.1, the construction plans, and operation, maintenance, and restoration for the Project remain as they were described in Harmony's July 2, 2018 Application for a Certificate of Site Compatibility[1] (2018 Application).

The entire Project Area was surveyed for natural and cultural resources in 2017 and additional investigations were conducted in 2023 to confirm resources within the Project Area. A summary of the results of these updated surveys is provided in Section 4.0 along with a discussion of potential impacts and mitigation measures related to construction and operation of the updated Project design.

1.2 Project Layout

The updated Project layout continues to optimize electrical generation and efficiency of the solar resource while avoiding and minimizing environmental, cultural, and infrastructure impacts. A detailed description of the Project facilities in the updated layout is provided in Sections 1.2.1 through 1.2.3 below. Harmony has secured all private easements for its facilities and has or will secure permits and other authorizations from the state, county and township governments and entities, as needed.

In addition to consideration of siting criteria in NDAC Section 69-06-08-01 (see Section 3.0), the updated Project layout continues to comply with applicable Harmony Township setback requirements. Harmony Township setback regulations are provided in Table 1.2-1; setback requirements for Harmony Township have not changed from what was described in the 2018 Application.

Table 1.2-1: Harmony Township Setback Requirements

Feature	Township Setback Requirement (feet)	Project Design
Road Rights-of-Way	100	At its closest, Project facilities are at least 100 feet from these features
Front Yard from Township Roads	75	
Side Yard	50	
Rear Yard	50	

Source: Harmony Township, 2017.

[1] Application for a Certificate of Site Compatibility, Case No. PU-18-219, Filed 2018.06.29. Available online at: https://apps.psc.nd.gov/webapps/cases/psdocketdetail?getId=18&getId2=219&getId3=1#.

The Project will also comply with all other applicable local, state, and federal regulatory requirements. After Project facilities are installed, areas of bare ground within the Project Area boundary will be re-vegetated in accordance with the Vegetation Management Plan (VMP); a copy of the VMP is provided in Appendix B.

Harmony is providing an updated Site Plan of the proposed solar facility in Appendix C. The Site Plan depicts the general footprint and layout of the Project facilities within the Project Area boundary. Figure 2 also depicts the proposed layout of Project facilities. Final site plans will be provided to the Commission and Harmony Township prior to construction.

Table 1.2-2 provides a comparison of the estimated land use conversion and temporary impacts for the Project layout presented in the 2018 Application and the updated layout presented herein. Image 1 follows the table and provides a visual comparison of the changes.

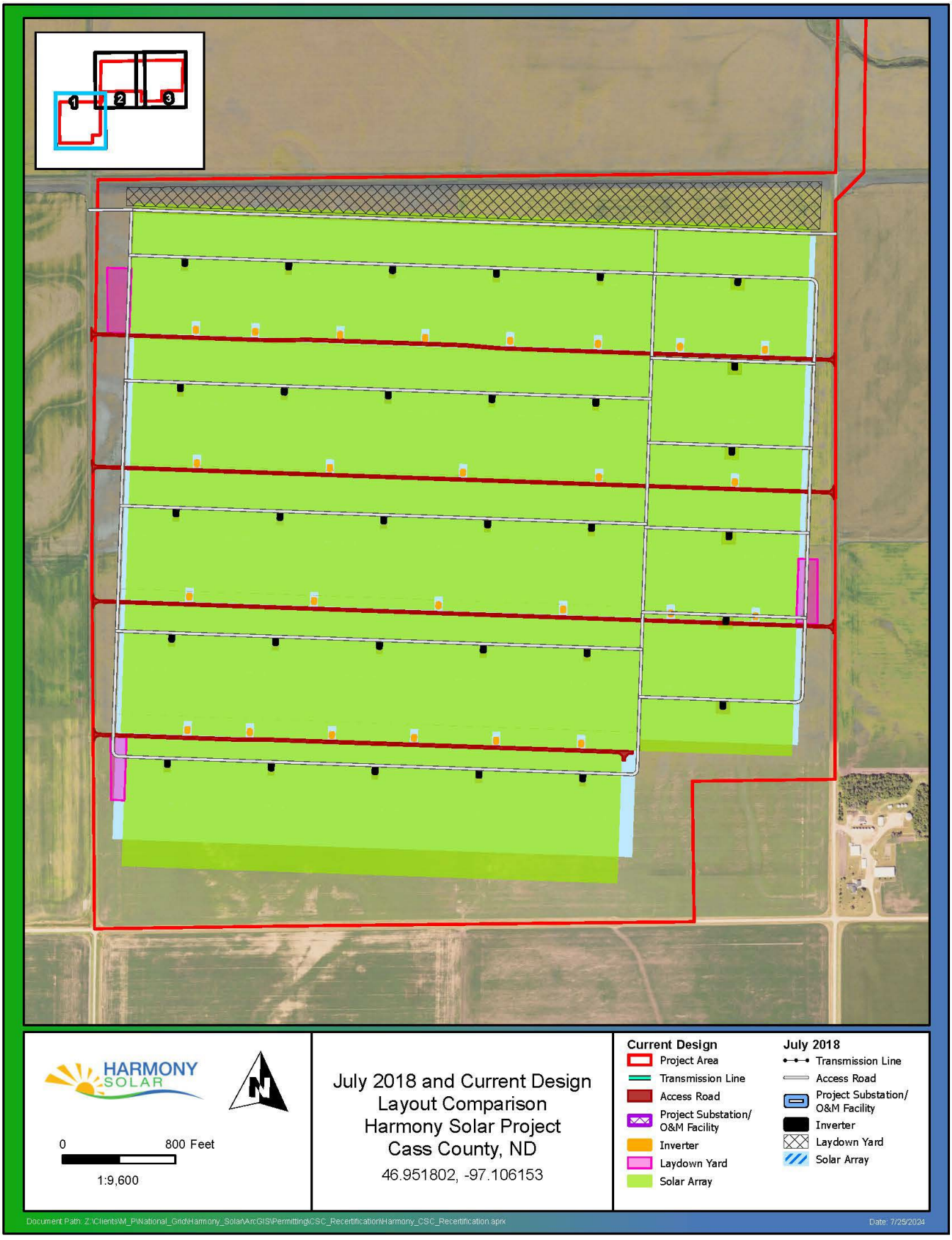
Table 1.2-2: Comparison of Estimated Impacts from Project Facilities

Description of Impact	Project Facilities	Acres of Impact	
		2018 Application	Current Project
Direct Impact	Access Roads	38.5	20.0
	Inverters	0.8	0.2
	Project substation and O&M Facility	2.4	5.9
	Laydown/Parking Area	N/A	4.4
	Direct Impact Subtotal	**41.7**	**30.6**
Conversion to Grassland	Laydown Areas	48.2	14.7
	Area within the security fence less direct impacts and laydown areas	1,271	1,255.9
	Area outside of Security Fence and up to limits of Project boundary	N/A	356.8
	Electrical Cables (outside security fence)[1]	--	3.9
	Conversion to Grassland Subtotal	**1,319.2**	**1,631.4**
	Land Use Conversion Total	**1,360.9**	**1,658.1**
Temporary Impact	Electrical Cables (outside security fence)[1]	1.1	--
	Project Total	**1,362.0**	**1,662.0**

[1] In the 2018 Application, the areas where electrical collection and communication lines would extend beyond the fence line of the solar facility were categorized separately as temporary impacts. In the updated Project design, Harmony proposes to convert the entire Project Area, less areas of direct impact, to grassland. As such, electrical collection and communication lines that extend outside of the fence line are now captured as Conversion to Grassland.

Notes:

- N/A = Not applicable; this information was not provided in the 2018 Application because these Project components were not part of the Project design at that time.
- The sum of addends may be off by up to 0.1 due to rounding.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July 2018 and Current Design
Layout Comparison
Harmony Solar Project
Cass County, ND
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Current Design
Project Area
Transmission Line
Access Road
Project Substation/
O&M Facility
Inverter
Laydown Yard
Solar Array
July 2018
Transmission Line
Access Road
Project Substation/
O&M Facility
Inverter
Laydown Yard
Solar Array
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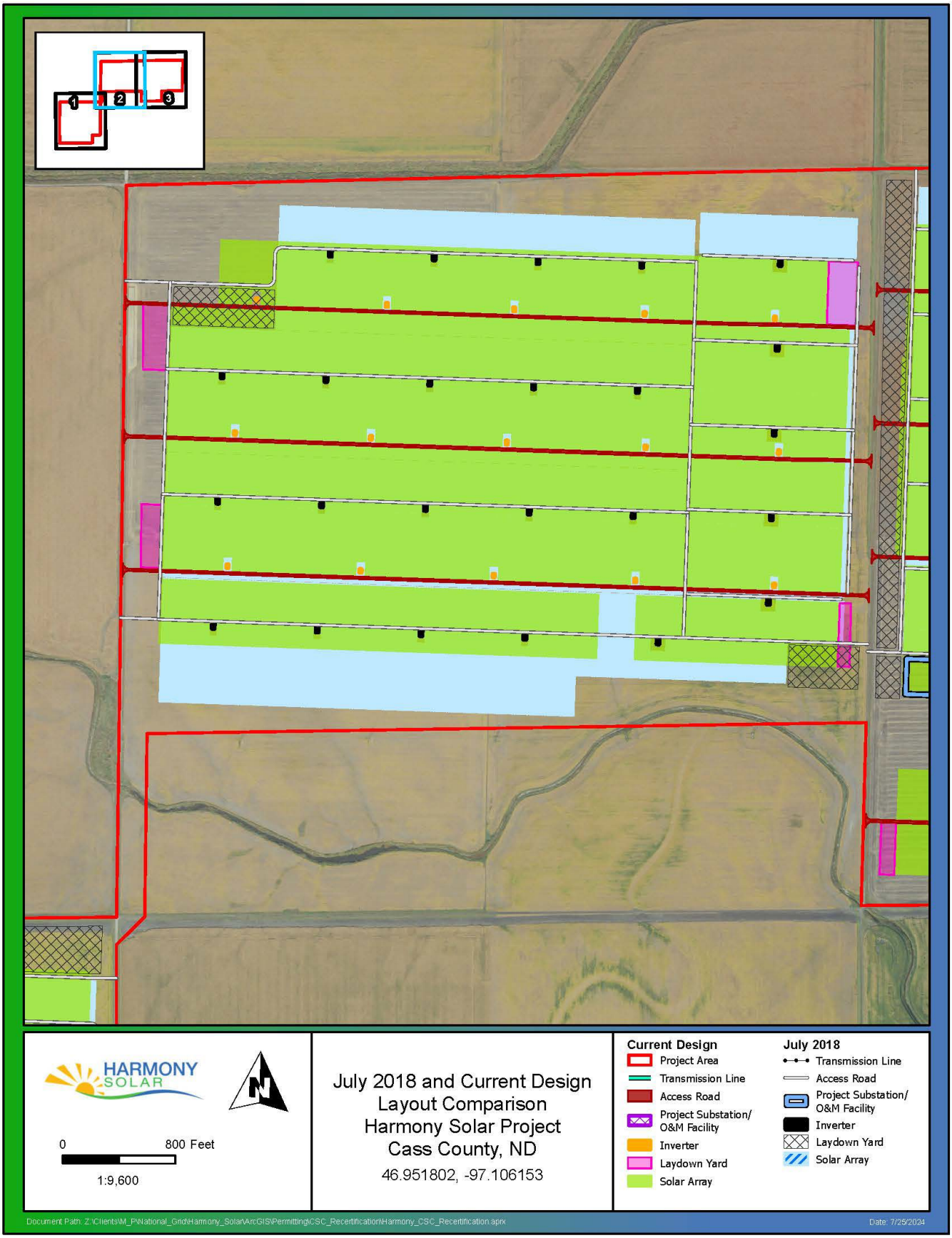
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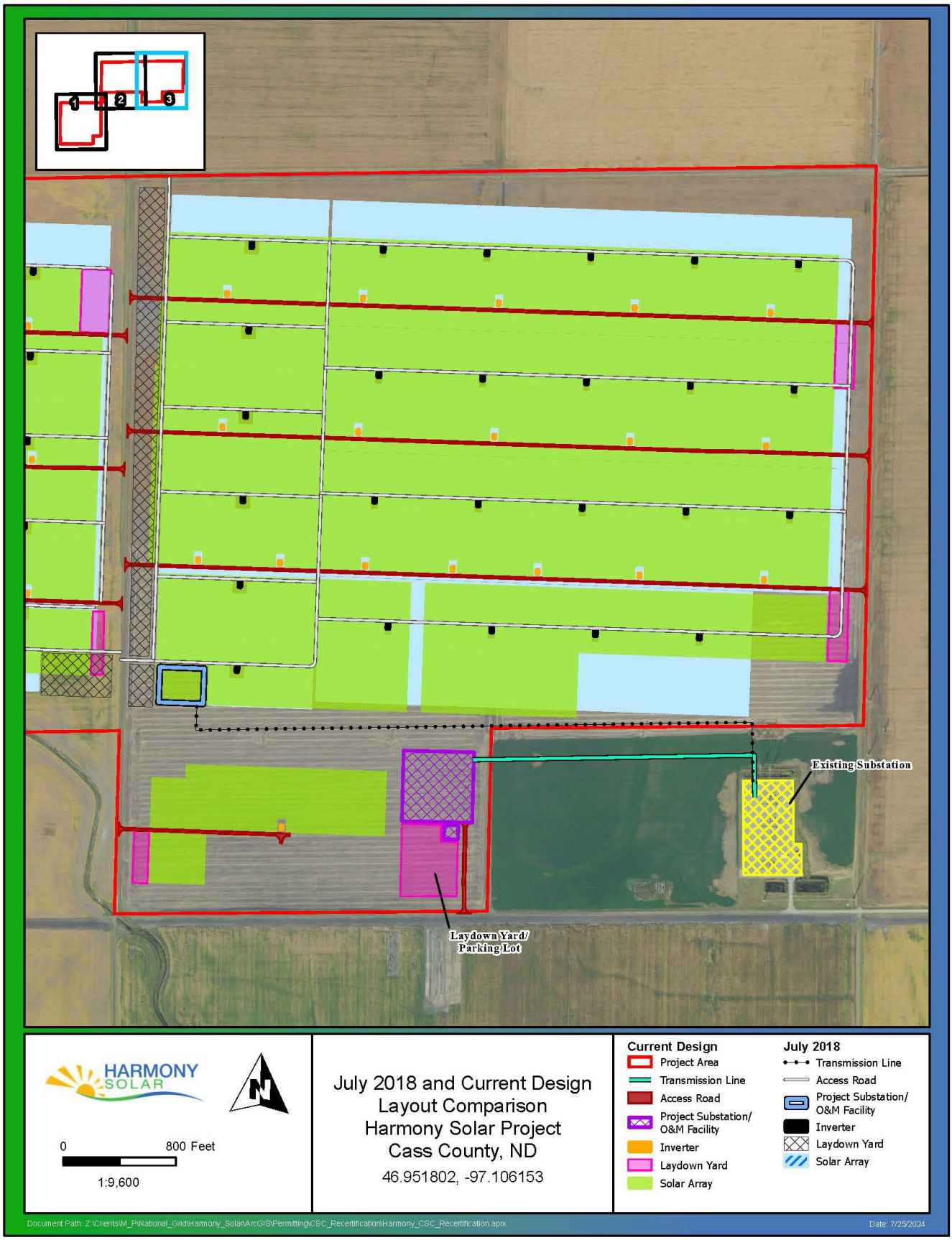
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Existing Substation
Laydown Yard/
Parking Lot
HARMONY SOLAR
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800 Feet
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July 2018 and Current Design
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Date: 7/25/2024

As illustrated in Image 1, the primary changes in the updated Project layout are as follows:

- In Table 1.2-1, the acreage provided for the area within the security fence less direct impacts and laydown areas is slightly lower than the layout presented in the 2018 Application.

- The Project substation and O&M building have moved to be directly adjacent to the Bison Substation in the southwest corner of Section 11, resulting in a shorter path for the 345 kV gen-tie line interconnecting the Project to the existing substation.

- The updated design also contemplates solar modules in the southwest corner of Section 11.

- Fewer inverters are required for the updated design, resulting in a reduction in acreage required to host these facilities.

- There is also a reduction in the overall length and acreage of permanent access roads in the updated design.

- There is an increase in the estimated acreage needed for the Project substation and the O&M building in the updated Project design.

- The previous Project layout included a 500 square foot parking lot adjacent to the O&M building. In the updated Project design, Harmony proposes to maintain a portion of the 4.4-acre laydown yard adjacent to the O&M building in Section 11 as a graveled parking lot during operation of the Project (see Figure 2 and the Site Plan in Appendix C). The final dimensions of the parking area are likely to be less than the full 4.4 acres shown in Table 1.2-2; as such, the total direct impacts for the laydown/parking area in Table 1.2-2 are overstated.

- Harmony has reduced the total acres of laydown yards that will be required for construction of the Project.

In addition to the changes listed above, Harmony proposes to revegetate the area outside of the security fenceline up to the limits of the Project Area boundary (approximately 357 acres) with a pollinator friendly seed mix in accordance with the Project VMP; these areas will be maintained as grassland for the life of the Project (see Figure 2). In the previous design, all areas outside of the security fence were described as still available for agricultural production (about 300 acres). The areas between the security fenceline and the limits of the Project Area boundary are somewhat narrow, which could make agricultural production unrealistic due to the size of modern farming equipment. Revegetating these areas will provide additional protection from soil erosion and reduce the potential for runoff into adjacent roadside ditches and the Lower Branch of Rush Creek. This increases the total acres of agricultural land that will be converted to grassland from what was presented in the 2018 Application (see Table 1.2-1).

1.2.1 Solar Facility

1.2.1.1 Solar Panels

The Project will use PV panels with tempered glass varying in size approximately 7.5-feet-long by 4-feet-wide, and 1 to 2 inches thick. The panels will be installed on a tracking racking system that utilizes galvanized steel and aluminum for the foundations and frame. Each rack will contain multiple panels. On the tracking system, the maximum tilt height of the panels will be up to 15 feet. Height may vary due to manufacturer, topography and vegetation constraints. Depending on the technology selected, the PV panels may have an aluminum frame, silicon, and weatherized plastic backing or a side-mount or under-mount aluminum frame, heat strengthened front glass, and laminate material encapsulation for weather protection.

To limit reflection, solar PV panels are constructed of dark, light-absorbing materials. Today's panels reflect as little as two percent of the incoming sunlight depending on the angle of the sun and assuming use of anti-reflective coatings. The solar array will occupy most of the Project site for the solar facilities.

Linear Axis Tracking System

A linear axis tracking system tracks the solar resource throughout the day. The panels are generally aligned in rows north and south and face east in the morning, perpendicular to the ground during mid-day, and then west in the afternoon. The panels are rotated by a small motor to slowly track the sun throughout the day. Images 2-4 below visually show the general racking equipment and dimensions of a linear axis tracking system.

Image 2: Tracking System Racking

Image 3: Tracking System Profile View

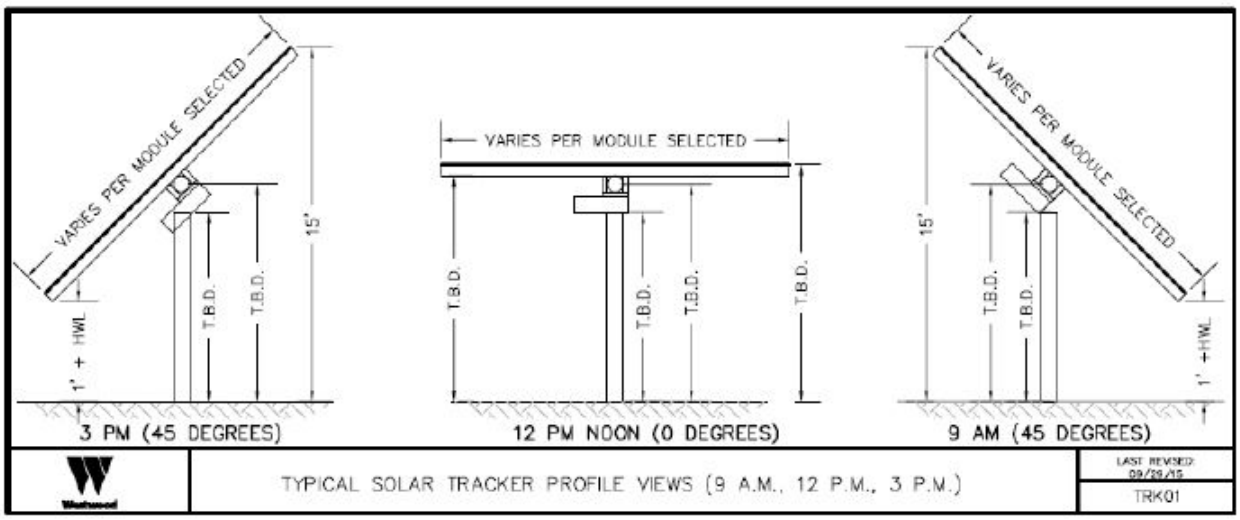


Image 4: Standard Steel Pier Foundations

Inverters, Transformers, and Electrical Collection System

Electrical wiring will connect the panels to inverters, which will convert the power from direct current (DC) to alternating current (AC). The AC will be stepped up through a transformer from the inverter output voltage to 34.5 kV and brought via the collection cables to the Project substation. The electrical collection system will be installed below-ground or a hybrid of below-ground and above-ground. Electrical collection technology is rapidly evolving and will be site-specific depending on geotechnical analysis, constructability, costs, and availability of materials. Final engineering and procurement will help determine the construction method for the electrical collection system. The electrical cables that would be used for each type of electrical collection system are described below.

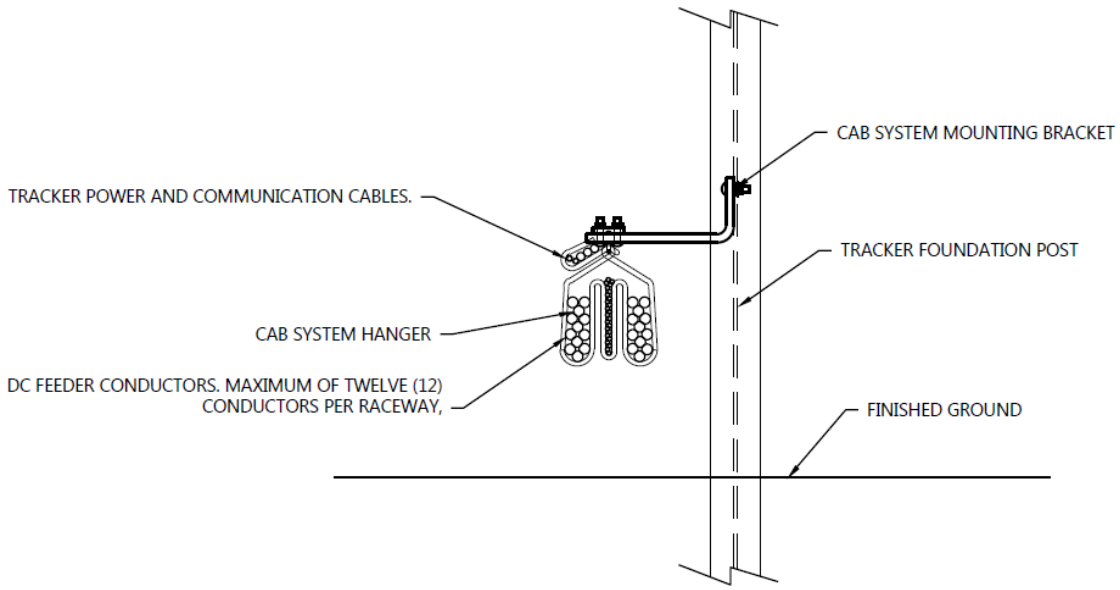
Below-ground Electrical Collection System

Inverters convert approximately 1,500 volts of DC output from the PV panels to between 650-950 volts of AC. Then a step-up transformer converts the inverter AC voltage to an intermediate voltage of 34.5kV. The panels deliver DC power to the inverters through cabling that will be placed in a below-ground trench (approximately four feet deep and one to two feet wide). Below-ground AC collection systems from the inverter skids to the substation will be installed in trenches or ploughed into place at a depth of at least four feet below grade. During all trench excavations the topsoil and subsoil will be removed and stockpiled separately. Once the cables are laid in the trench, the area will be backfilled with subsoil followed by topsoil and seeded in accordance with the Project VMP.

Hybrid Below-ground and Above-ground Electrical Collection System

A hybrid above-ground and below-ground electrical system is being considered for the Project for several reasons including ease of access for operations and maintenance, reduced ground disturbance, and cost considerations. If above-ground cabling is utilized, the DC collection lines will be strung under each row of panels on steel arms and a steel cable attached to the piles. At the end of each row, hanging brackets would connect several racks/rows of cables to a common collection point near their assigned inverter/transformer skid where the cables will be routed below-ground at a minimum depth of at least four feet below grade to the inverter/transformer skid where the current is converted to AC and voltage is stepped up to 34.5 kV. A typical drawing of the hanging brackets at the end of each row is provided below in Image 5.

Image 5: Typical Above-Ground DC Collection Hanging Bracket



From the inverter/transformer skids, AC collection lines would be installed below ground to the Project substation. Harmony plans to install the AC collection system between the southern unit and the northern unit below-ground.

Central Inverter/Transformer Skids

Regardless of the collection system configuration (below-ground or hybrid), the Project will utilize central inverter/transformer skids at locations throughout the Project and include a transformer to which the inverters will feed electricity (see Image 6). The final number of inverters for the Project will depend on the inverter size, as well as inverter and panel availability. The Project's preliminary design proposes 58 central inverter skids (one inverter is required for every 4-5 MW). These skids provide the foundation for the inverter, transformer, and Supervisory Control and Data Acquisition (SCADA) system. The skids will be placed atop a concrete slab or pier foundations and typically measure 8 feet wide by 20 feet long, with a structure height of approximately 12 feet above grade. Concrete foundations will be poured onsite or precast and assembled off-site.

The inverters are within the interior of the Project along access roads. Typical drawings of inverters are included in the Site Plan in Appendix C and Image 6 below shows a central inverter and step-up transformer station.

Image 6: Typical Inverter and Transformer Station

Access Roads

The Project will include approximately 10 miles of graveled access roads that lead to the inverters and Project substation for operation and maintenance; this is half the length of access roads proposed in the Project design presented in 2018. The final length of the access roads will depend on the equipment selected and final engineering. These roads are generally 16 feet wide and wider along curves. There are 21 access points to the Project from existing township roads; this includes the access road to the Project substation. These entrances will have locked gates.

Some upgrades or other changes to public roads may be required for construction or operation of the Project. Harmony will coordinate with the appropriate road authorities regarding any upgrades that may be needed. Upgrades or changes could include, but are not limited to, dust control, road improvements, additional aggregate, field access or driveway changes.

Safety Features

Security fencing around the perimeter of the solar facility will include 6-foot chain link fence panels with an additional 1-foot of barbed wire along the top of the panel. The Project will also have security cameras. Harmony may have security lighting at the entrances that will be down lit.

There may be lights at each inverter that will also be down lit and switch controlled for repair purposes. For more details about the lighting proposed at the Project site, see the Site Plan in Appendix C.

1.2.2 Associated Facilities

Project Substation

The Project substation will be a 34.5/345 kV step-up substation with metering and switching gear required to connect to the transmission grid. It will be designed according to regional utility practices, Midcontinent Independent Transmission System Operator Standards, Midwest Reliability Organization Standards, National Electrical Safety Code, and the Rural Utility Service Code. The area around the substation will be graveled and fenced. The substation will be constructed on approximately 5.7 acres in the southeast corner of Section 11.

Operation and Maintenance Building

An O&M building will provide access and storage for Project maintenance and operations. The O&M building will be adjacent to the Project substation in the southwest corner of Section 11 (Figure 2). Harmony will obtain a building permit from Harmony Township prior to construction. The O&M building will be constructed on approximately 0.2 acre, adjacent to the substation, and will house the equipment to operate and maintain the Project.

Parking

A 4.4-acre area adjacent to the substation and O&M building in Section 11 will be used as a laydown yard during construction and then a portion of this area will be maintained as a gravel parking lot for use during operation of the Project. Any portion of the 4.4-acre area that is not maintained for parking will be seeded in accordance with the Project VMP. Harmony will comply with all off-street parking provisions detailed in Article 6 of the Harmony Zoning Ordinance.

Weather Stations

The Project will include at least two weather stations up to 20 feet in height. Both weather stations will be within the security fence; the final locations will be determined following final engineering.

1.2.3 Temporary Facilities

In addition to the laydown yard/parking lot described above, Harmony will utilize 10 temporary laydown areas within the Project Area, totaling approximately 14.7 acres. These areas will serve both as parking areas for construction personnel and staging areas for Project components during construction. These laydown areas will be within the security fence. After construction, they will be reseeded using a pollinator friendly seed mix as described in Section 6.14 of Harmony's 2018 Application and the updated VMP in Appendix B.

1.3 Project Schedule

The anticipated schedule for land acquisition, the CCS authorization, construction, testing, and commercial operation is outlined below:

- **Land acquisition:** Complete.
- **CCS:** Harmony anticipates the CCS authorization will be issued in the 4th quarter of 2024.
- **Conditional Use Permit:** Harmony filed an application for a Conditional Use Permit (CUP) with Harmony Township in June 2017 and a CUP was issued on August 27, 2017 for a duration of three years. Harmony Township issued CUP extensions on January 7, 2021 and March 21, 2023. A copy of the March 21, 2023 CUP is provided in Appendix D.
- **Other Permits:** Harmony will acquire all other permits necessary for construction of the Project prior to conducting the work for which the permit is required. Refer to Table 6.0-1 Potential Permits/Approvals.
- **Construction:** Harmony anticipates that construction will begin as early as second quarter of 2025 or as late as second quarter 2027 and will be completed within two construction seasons.
- **Commercial Testing:** Testing for the Project is expected to begin as early as the fourth quarter of 2026 or as late as the fourth quarter of 2028, following the completion of construction.
- **Commercial Operations:** Commercial operation for the Project is scheduled to begin as early as the fourth quarter 2026 or as late as the fourth quarter of 2028, following the completion of construction and testing.

1.4 Project Ownership

Harmony has a lease option with the landowners for the Project site. Harmony is currently leasing the site for the O&M building but is exploring purchase options with the landowner. The Project will be constructed, owned, and operated by Harmony, a wholly owned subsidiary of National Grid Renewables Development, LLC (NG Renewables).

1.5 Project Cost

The total installed capital costs for the Project are estimated to be approximately $320 million, with Project cost depending on variables including, but not limited to, construction costs, taxes, tariffs, and panel selection, along with associated electrical and communication systems, and access roads.

2.0 PROJECT CONSTRUCTION AND OPERATIONS

2.1 Project Construction

2.1.1 Overview of Activities

A variety of activities must be completed to carry the Project through construction. Below is a preliminary list of activities necessary to develop the Project. Pre-construction, construction, and post-construction activities for the Project include:

- Pre-construction
  - Geotechnical analysis;
  - Design substation and electrical collection system;
  - Design solar array, access roads, and O&M building;
  - Underground utility identification (via One-Call); and
  - Procure all necessary facility components (solar panels, tracking system, transformers).
- Construction
  - Site preparation, grubbing, and grading;
  - Construct laydown areas and set up temporary job site trailers;
  - Civil construction of access roads;
  - Install PV mounting posts;
  - Install below-ground or hybrid collection system;
  - Install electrical enclosure/inverter;
  - Tracker installation;
  - PV module installation; and
  - Construct Interconnection Gen-Tie Line.
- Post-construction
  - Restore disturbed areas not intended for permanent above ground facilities;
  - Test facility; and
  - Begin commercial production.

2.1.2 Construction Activities

After the necessary permits are received, construction will begin with the initial site preparation work (such as installing erosion and sediment controls, vegetation removal, and grading), workforce mobilization, and construction of general site improvements, such as access improvements (if necessary) and the staging/laydown areas.

Areas of the site to be graded will have topsoil and organic matter stripped and segregated from the subsoil. Topsoil shall have temporary and permanent stabilization measures established in accordance with the Project's Stormwater Pollution Prevention Plan (SWPPP). Internal roads will be constructed of inorganic fill (road aggregate base) to match the surrounding existing ground elevations to allow existing drainage patterns to persist. Once the necessary grading is complete, subsoil will be replaced, followed by topsoil, blending the grade into existing topography.

While some Geotechnical studies have been completed, additional Geotechnical and pull testing studies will be performed to determine the topsoil and subsoil types, and the mechanical properties of the soils. These variables will be used to engineer the solar array foundation system. Typically, the foundation is a steel pile, which is driven into the ground with a hydraulically powered high-frequency hammer mounted on a tracked carrier. The piles are installed at pre-defined locations throughout the array area to a depth of 8' to 14' below grade, depending on soils, frost depth, and other factors.

In both the belowground and hybrid collection system design, buried electrical collection cables will be installed in trenches or ploughed into place at a depth of at least 48 inches to the top of the lines. During trench excavation the topsoil and subsoil will be removed and stockpiled separately. Once the cables are laid in the trench, the area will be backfilled with subsoil followed by topsoil.

The solar energy system (solar arrays and collection and distribution systems) will be installed next along with access roads within the arrays. The solar facilities will be constructed in blocks, and multiple blocks could be constructed simultaneously. Electrical testing and equipment inspections will be conducted on each solar energy system. If concrete foundations are used for electrical equipment (inverters or transformers or other electrical cabinets) they will be precast and assembled off-site.

During construction, equipment and work vehicles would travel to and from the site. Construction is anticipated to be consistent throughout the construction season when the majority of the access road construction, electrical and substation work is taking place. Typical construction equipment such as scrapers, dozers, 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;
- Medium duty crane;
- All-terrain forklift;
- Concrete truck and boom truck;
- High reach bucket truck; and
- Truck-mounted auger or drill rig.

Upon completion of construction, heavy equipment will be removed from the site.

2.1.3 Construction Management

Harmony will designate an on-site construction manager. This manager's responsibilities include scheduling and coordinating the activities of engineering, procurement and construction contractors. The construction manager will be supported by other members of Harmony's team who specialize in engineering, permitting, meteorology, environmental compliance, real estate and Geographic Information Systems (GIS) mapping. Harmony will also supply a landowner and community liaison during construction to facilitate community relations and coordinate operations between the construction team, local residents and farmers, and local government.

Throughout the construction phase, ongoing coordination occurs among the Project's development, design, and construction teams. The construction manager coordinates the execution of the work. This coordination includes safety and quality control programs, cost and schedule forecasting, as well as site security and ongoing communication with local officials, citizen groups, and landowners.

Following commissioning and commercial operation, the care, custody, and control of the facility transfers from the construction team to the operations staff. The construction manager works with the operations staff, the equipment suppliers, and other construction and maintenance personnel to ensure a smooth transition from the start of construction to the commercial operation date of the Project. The operations staff will have full responsibility for the facility to ensure operations and maintenance are conducted in compliance with approved permits, prudent industry practice and the equipment manufacturer's recommendations.

2.1.4 Commissioning

Upon completion of the construction phase, the Project will undergo detailed inspection and testing procedures before being commissioned. Inspection and testing will occur for each component of the solar array, as well as the associated communication, meteorological, collection, and SCADA systems.

2.2 Project Operation and Maintenance

The Project will be professionally maintained and operated. Primary tasks include scheduled monthly and quarterly inspection(s) of electrical equipment, vegetation management as well as snow removal on access drives.

The expected service life of the proposed facilities is 25 to 40 years, and Harmony estimates that the Project will result in up to 4 full-time permanent positions to operate and maintain the facilities. A maintenance plan will be created for the Project to ensure the performance of the solar facilities, including a scheduled check of the main items and a predictive maintenance approach of the devices subjected to derating/degradation. Derating/degradation refers to the known process of components losing some efficiency or otherwise degrading over the course of the Project's life cycle; like all technology and physical components, a certain amount of this is unavoidable, and Harmony will plan for it and maintain the facility as needed. Once construction is complete, the solar facility will see three to ten trucks on site daily during normal operations, and at intervals associated with the maintenance schedule described in Sections 2.2.1 through 2.2.5.

All maintenance activities will be performed by qualified personnel. Maintenance activities will be performed during the day to the extent that they do not disrupt energy production. Upon occasion, it may be desirable to perform maintenance when the sun is down. Activities that have the potential for substantial noise generation will be performed during the day to minimize impacts in areas where residents are present.

If a module needs repair, that particular section of the array can be disconnected from the array by opening the combiner box circuit. The module can then be replaced, and the combiner box circuit

closed. Additionally, the power production circuits are separated from the tracking circuits. This allows the PV modules to operate during an unscheduled outage of the tracker system.

The O&M building will house the necessary equipment to operate and maintain the Project. The O&M building will allow maintenance staff to conduct on-site diagnostics, repairs, predictive maintenance, and preventive maintenance activities. This facility will also serve as the warehouse for critical spare parts.

The generating facility will be operated through a real-time control system for most operations functions. All the monitored data will be managed by Harmony or contracted out to a qualified subcontractor. Onsite operation will be performed from time to time as required for certain resets and troubleshooting activities.

2.2.1 Supervisory Control and Data Acquisition System

The solar arrays will communicate directly with the SCADA system for remote performance monitoring, energy reporting and troubleshooting. The SCADA system provides data on solar generation and production, availability, meteorology, and communications. The SCADA system allows 24/7 monitoring of, and communications with, the Project and relays alarms and communication errors. Harmony will oversee on-site service and maintenance for the Project. Permanent, full-time staff will remain on-site to perform these duties.

2.2.2 Equipment Inspection

Inspection of the main equipment will occur at regular intervals, including:

- PV panels: visual check of the panels, tracking system and surrounding grounds to verify the integrity of the panels and tracking structure, the presence of animals and nests, etc.
- Inverters, transformer and electrical panels: visual check of the devices including the connection cabinet and the grounding network. Check for presence of water and dust.
- Electrical check: measurement of the insulation level and dispersion. Check of the main switches and safety devices (fuses).
- Noise: check of abnormal sounds.
- Cabling and wiring: visual check of the buried and aerial electrical line and connection box to verify their status.

2.2.3 Performance Monitoring

Performance monitoring of the Project facilities will consist of a weekly or monthly download of the data acquired by the onsite meteorological station (energy produced, alarms, faults, etc.).

2.2.4 Facility Maintenance

Housekeeping of the Project facilities will include road maintenance, vegetation maintenance (method is to be determined; either traditional mowing or sheep and/or lamb grazers will be utilized), fence and gate inspection, lighting system checks, and PV panel washing (if required; minimal to no washing is anticipated to be needed at Project facilities due to the naturally occurring and frequent precipitation).

2.2.5 Maintenance Schedule

For the life of the Project, Harmony will conduct the inspections and maintenance tasks described above at least twice annually to ensure all components of the solar facility are functioning properly. However, the frequency of inspection may be varied based on facility demands and experience with performance of certain components and project features. Vegetation maintenance will be conducted up to three times a year, depending on site conditions, and as described in the VMP (Appendix B).

2.3 Decommissioning and Restoration

Once the Project has reached the end of its operational life, Harmony will decommission the Project per the Commission's Solar Facility Decommissioning Rules (NDAC Chapter 69-09-10). Unless waived by the Commission in accordance with NDAC Section 69-09-10-05(2), these actions will include the following:

- Dismantling and removal of all panel racking, photovoltaic modules, supports, anchors, towers, fencing, overhead cables, inverters, transformers, substations, and other equipment;
- Removal of underground cables to a depth of twenty-four inches;
- Removal of pilings and anchors, foundations, buildings, and ancillary equipment to a depth of four feet;
- Site restoration and reclamation to the approximate original topography that existed prior to construction of the facility with topsoil respread over the disturbed areas at a depth similar to that in existence prior to the disturbance; and
- Grading and restoring topsoil of areas disturbed by the facility and reseeding according to natural resource conservation service recommendations.

Pursuant to NDAC Section 69-09-10-06, Harmony will submit a decommissioning plan to the Commission prior to Project operation. Harmony will also comply with all applicable financial assurance requirements.

In connection with the original CSC application, Harmony provided information regarding disposal/recycling of solar panels (see Late-Filed Exhibit No. 12 in Case No. PU-18-219). Harmony is providing updated information regarding disposal/recycling of solar panels in support of this CCS in Appendix E.

3.0 COMPLIANCE WITH NDAC SECTION 69-06-08-01

No changes to the Project Area are proposed as part of Harmony's CCS. Development of the updated Project layout described herein considered the siting criteria set forth in NDAC Section 69-06-08-01. The following sections provide an analysis of how the Project layout continues to comply with the exclusion areas, avoidance areas, selection criteria, and policy criteria.

3.1 Exclusion Areas[2]

The updated Project layout continues to comply with the exclusion areas criteria in NDAC Section 69-06-08-01(1). Table 3.1-1 lists the exclusion areas in effect at the time the CSC was issued, notes the information discussed in Section 3.1 of the 2018 Application, and provides any updates related to the updated Project layout. As noted in the table, prime farmland and irrigated land are no longer exclusion areas; as such the current Project layout avoids all exclusion areas. The lack of exclusion areas is shown on Figure 3.

Table 3.1-1: Summary of Exclusion Areas

Exclusion Area	2018 Application		Current Project
	Present Within Project Area?	Description	
Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; historic districts; monuments; wilderness areas; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.	None	NA	No change.
Designated or registered state: parks; forests; forest management lands; historic sites; monuments; historical markers; archaeological sites; grasslands; wild, scenic, or recreational rivers; game refuges; game management areas; management areas; and nature preserves.	None	NA	No change.

[2] As defined in NDAC 69-06-01-01, exclusion areas are "criteria that remove areas from consideration for energy conversion facility sites and transmission facility routes." Exclusion areas are composed of these limiting criteria.

Table 3.1-1: Summary of Exclusion Areas

Exclusion Area	2018 Application		Current Project
	Present Within Project Area?	Description	
County parks and recreational areas; municipal parks; parks owned or administered by other governmental subdivisions; hardwood draws; and enrolled woodlands.	None	NA	No change.
Prime farmland and unique farmland, as defined by the land inventory and monitoring division of the soil conservation service, U.S. Department of Agriculture (USDA), in 7 C.F.R. Part 657; provided, however, that if the Commission finds that the prime farmland and unique farmland that will be removed from use for the life of the facility is of such small acreage as to be of negligible impact on agricultural productions, this exclusion does not apply.	Present	Land within the Project Area is considered prime farmland or prime farmland if drained. The Project will directly impact 41.4 acres of prime farmland or prime farmland if drained that are also classified by USGS GAP as agricultural, and will result in a total of 1,353.5 acres of agricultural land designated as prime farmland or prime farmland if drained being converted to a different use during the life of the Project. This equates to approximately 3.7 percent of the prime farmland or prime farmland if drained in the Study Area. Conversion to grassland will not constitute a loss of prime farmland as the physical and chemical characteristics that make the land suitable for classification as prime farmland will remain the same. Therefore, Harmony requests that the Commission determine that the prime farmland exclusion does not apply to the Project.	NDCC Section 49-22-05.1 was amended and subsection 2 does not allow prime farmland, unique farmland, or irrigated land to be identified as exclusion and/or avoidance areas.
Irrigated land.	None	NA	NDCC Section 49-22-05.1 was amended and subsection 2 does not allow prime farmland, unique farmland, or irrigated land to be identified as

Table 3.1-1: Summary of Exclusion Areas			
	2018 Application		
Exclusion Area	Present Within Project Area?	Description	Current Project
			exclusion and/or avoidance areas
Areas critical to the life stages of threatened or endangered animal or plant species.	None	NA	No change.
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.	None	NA	No change.
Areas within 1,200 feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.	None	NA	No change.

3.2 Avoidance Areas[3]

The updated Project layout continues to comply with the avoidance area criteria in NDAC Section 69-06-08-01(3). Table 3.2-1 lists the avoidance areas in effect at the time the CSC was issued, notes the information discussed in Section 3.2 of the 2018 Application, and provides any updates to the information for the Project. Avoidance areas in the Project Area are depicted on Figure 3.

Table 3.2-1: Summary of Avoidance Areas			
	2018 Application		
Avoidance Area	Present Within Project Area?	Description	Current Project
Historical resources which are not designated as exclusion areas.	None	NA	No change.
Areas within the city limits of a city or the boundaries of a military installation.	None	NA	No change.

[3] As defined in NDAC 69-06-01-01, avoidance criteria are "criteria that remove areas from consideration for energy conversion facility sites and transmission facility routes unless it is shown that under the circumstances there are no reasonable alternatives." Avoidance areas are composed of these limiting criteria.

Table 3.2-1: Summary of Avoidance Areas

Avoidance Area	2018 Application		Current Project
	Present Within Project Area?	Description	
Areas within known floodplains as defined by the geographical boundaries of the hundred-year flood.	None	NA	No change.
Areas that are geologically unstable.	None	NA	No change.
Woodlands and wetlands.	None	NA	The 2023 wetland delineation identified three wetlands (WA001, WA011, and WA015) along the edges of the Project Area boundary (see Section 4.7 and Figure 6). The USACE determined that Wetlands WA011 and WA015 are Waters of the U.S., but Wetland W001 is not. The Project avoids permanent impacts to all three wetlands. Wetland WA015 may be temporarily impacted by installation of electrical collection and communication lines across the Lower Branch of Rush Creek to connect the solar arrays in Section 16 to the arrays in Section 10. After construction is complete, all three wetlands be seeded with a wet prairie seed mix and maintained in an herbaceous state for the life of the Project. Wetland seeding will enhance vegetation diversity and density, thereby increasing the overall functional value of each wetland and reducing runoff and sedimentation into the associated waterbodies.
Areas of recreational significance which are not designated as exclusion areas.	None	NA	No change.

3.3 Selection Criteria[4]

Per NDAC Section 69-06-08-01(5), "[a] site may be approved in an area only when it is demonstrated to the Commission by the applicant that any significant adverse effects resulting

[4] As defined in NDAC 69-06-0101, selection criteria is defined as "criteria that guide and govern the selection of energy conversion facility sites and transmission facility corridors and routes in order to minimize adverse human and environmental impact after the exclusion and avoidance criteria have been applied."

from the location, construction, and operation of the facility in that area, as they relate to the following, will be at an acceptable minimum, or that those effects will be managed and maintained at an acceptable minimum."

Table 3.3-1 lists the selection criteria in effect at the time the CSC was issued, notes the information discussed in Section 3.3 of the 2018 Application, and provides any updates to the information for the Project.

Table 3.3-1: Summary of Selection Criteria

Selection Criteria	Potential Adverse Effects from the Project	
	2018 Application	Current Project
The impact upon agriculture:		
(1) Agricultural production.	Direct impacts and conversion of land currently used for agricultural production will not result in a significant impact to agricultural production in the Study Area. As noted in Section 6.2.1, direct impacts and conversion of 1,353.5 acres of agricultural land to developed and grassland within the fenced area of the solar facility would reduce the amount of agricultural land in the Study Area by 3.8 percent. Agricultural production would be allowed to continue in the surrounding areas during construction and operation of the Project. Any revenue lost by removing land from agricultural production will be offset by solar energy production and the associated Land Lease and Solar Easement payments to the associated landowners. Additionally, the Project's seed mixes across approximately 1,319.2 acres will promote biodiversity, create stable habitat, attract pollinators, and provide the potential for agricultural production in the form of: bee hives on the site and/or providing crops for sheep, if the vegetation	Direct impacts and conversion of land currently used for agricultural production will not result in a significant impact to agricultural production in the Study Area. As noted in Section 4.2.1, direct impacts and conversion of 1,608.7 acres of agricultural land to solar facility and grassland within the Project Area boundary would reduce the amount of land used for agricultural production in Cass County (i.e., 941,171 acres according to the USDA 2022 Census of Agriculture) by about 0.2 percent. Agricultural production would be allowed to continue in the surrounding areas during construction and operation of the Project. Any revenue lost by removing land from agricultural production will be offset by solar energy production and the associated land lease and solar easement payments to the associated landowners. Additionally, the Project's seed mixes across approximately 1,631.4 acres will promote biodiversity, create stable habitat, attract pollinators, and provide the potential for agricultural production in the form of: bee hives on the site

Table 3.3-1: Summary of Selection Criteria		
Selection Criteria	**Potential Adverse Effects from the Project**	
	2018 Application	**Current Project**
	maintenance strategy will be grazing.	and/or providing crops for sheep, if the vegetation maintenance strategy will be grazing.
(2) Family farms and ranches.	Conversion of land within the Project footprint currently used for agricultural production to developed and grassland will result in some economic losses. However, the revenue lost from removing land from agricultural production will be offset by Land Lease and Solar Easement payments to the associated landowners.	No change.
(3) Land which the owner demonstrates has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation.	Landowners have not expressed concerns about or identified irrigation systems on their properties, and no known irrigation systems are present within the Project Area.	No change.
(4) Surface drainage patterns and ground water flow patterns.	No adverse impacts to surface drainage patterns and ground water flow patterns are anticipated.	No change.
(5) The agricultural quality of the cropland.	No adverse impact to the agricultural quality of cropland is anticipated. Harmony will compensate landowners for the placement of Project facilities on their property and for any crop damages that occur during construction of the Project.	No change.
The impact upon the availability and adequacy of:		
(1) Law enforcement.	No adverse impacts to the availability and adequacy of law enforcement are anticipated.	No change.
(2) School systems and education programs.	No adverse impacts to the availability and adequacy of school systems and education programs are anticipated.	No change.
(3) Governmental services and facilities.	No adverse impacts to the availability and adequacy of	No change.

Table 3.3-1: Summary of Selection Criteria		
Selection Criteria	**Potential Adverse Effects from the Project**	
	2018 Application	**Current Project**
	governmental services and facilities are anticipated.	
(4) General and mental health care facilities.	No adverse impacts to the availability and adequacy of mental health care facilities are anticipated.	No change.
(5) Recreational programs and facilities.	No adverse impacts to the availability and adequacy of recreational programs and facilities are anticipated.	No change.
(6) Transportation facilities and networks.	There will be a temporary increase in traffic during construction activities. No impacts to traffic are anticipated during operation of the facility.	No change.
(7) Retail service facilities.	No adverse impacts to the availability and adequacy of retail service facilities are anticipated.	No change.
(8) Utility services.	No adverse impacts to the availability and adequacy of utility services are anticipated.	No change.
The impact upon:		
(1) Local institutions.	No adverse impacts on local institutions are anticipated.	No change.
(2) Noise-sensitive land uses.	Noise-sensitive land uses in the Project Area are limited to residences near the solar facility. The nearest residence to the Project is approximately 1,085 feet away. This residence is owned by a Project participant. Construction of the Project will result in temporary increases in noise in the vicinity of the Project Area. During construction, Harmony will limit construction activities to daylight hours. Harmony conducted a noise modeling analysis to assess the potential for increases noise during operation of the facility. The analysis concluded that noise	Noise-sensitive land uses in the Project Area are limited to residences near the solar facility. The nearest residence to the Project is approximately 1,033 feet away. This residence is owned by a Project participant. Construction of the Project will result in temporary increases in noise in the vicinity of the Project Area. During construction, Harmony will limit construction activities to daylight hours. A noise modeling analysis conducted in support of the 2018 Application concluded that noise emitted during operation of the solar facility is not expected to be

Table 3.3-1: Summary of Selection Criteria		
Selection Criteria	Potential Adverse Effects from the Project	
	2018 Application	Current Project
	emitted during operation of the solar facility is not expected to be discernible from background noise levels at homes in the vicinity. No adverse impacts on noise-sensitive land uses are anticipated during construction or operation of the Project.	discernible from background noise levels at homes in the vicinity. Because a different inverter will be used in the updated Project design, and to utilize a limit of 45 dBA within 100 feet of an occupied residence, Harmony revisited the noise modeling assumptions. Based on the updated assumptions, sound emitted from the loudest Project component (the inverters) would be below 45 dBA within 328 feet of the inverters. The nearest residence to the solar facility is 1,033 feet away. No adverse impacts on noise-sensitive land uses are anticipated during construction or operation of the Project.
(3) Light-sensitive land uses	Construction activities will occur during daylight hours, limiting impacts of lighting. Operation of the Project will require downlit security lighting at the entrance of the Project and there may be down lit, switch controlled lights at each inverter for repair purposes. Impacts to light-sensitive land uses are not anticipated given the rural project location coupled with minimal required lighting for operations.	No change.
(3) Rural residences and businesses.	No adverse impacts on rural residences and businesses are anticipated.	No change.
(4) Aquifers.	No aquifers are present within the Project Area; therefore, no impacts on aquifers are anticipated.	No change.
(5) Human health and safety.	No adverse impacts on human health and safety are anticipated.	No change.

Table 3.3-1: Summary of Selection Criteria		
	Potential Adverse Effects from the Project	
Selection Criteria	2018 Application	Current Project
(6) Animal health and safety.	No adverse impacts on animal health and safety are anticipated.	No change.
(7) Plant life.	The Project Area is comprised of agricultural and developed land; existing vegetation in the Project Area is limited to row crops. The Project will impact 1,353.5 acres of agricultural land, 41.4 acres of which will be converted to impervious surfaces. The other 1,312.1 acres of agricultural land will be revegetated with a seed mix developed with prairie specialists (and approved by the NRCS Cass County Soil Conservation District) to design a mix that will achieve Harmony's goals for operating the solar facility, promote pollinator habitat, establish stable ground cover successfully, reduce erosion, reduce runoff, and improve infiltration. For these reasons, the overall impact on plant life in the Project Area will be positive.	The Project Area is comprised of agricultural and developed land; existing vegetation in the Project Area is limited to row crops. The Project will impact 1,608.7 acres of agricultural land, 30.0 acres of which will be converted to impervious surfaces. The other 1,578.7 acres of agricultural land will be revegetated with a seed mix developed with prairie specialists (and approved by the NRCS Cass County Soil Conservation District) designed to achieve Harmony's goals for operating the solar facility, promote pollinator habitat, establish stable ground cover successfully, reduce erosion, reduce runoff, and improve infiltration. For these reasons, the overall impact on plant life in the Project Area will be positive.
(8) Temporary and permanent housing.	During construction of the Project, temporary housing such as motels, hotels, and rental housing may be utilized by construction personnel. Harmony anticipates that sufficient temporary housing will be available within Cass County, and within the Fargo-Moorhead metropolitan area, to accommodate construction personnel. Up to 12 full-time personnel will be required during operation of the facility and sufficient long-term housing exists in Cass County and the nearby Fargo-Moorhead	No change to the adequacy of temporary housing for construction personnel. Up to 4 full-time personnel will be required during operation of the facility

Table 3.3-1: Summary of Selection Criteria		
Selection Criteria	**Potential Adverse Effects from the Project**	
	2018 Application	**Current Project**
	metropolitan area. No adverse impacts to temporary or permanent housing are anticipated.	
(9) Temporary and permanent skilled and unskilled labor.	Skilled and unskilled labor is expected to be available in Cass County or North Dakota to serve the Project's basic infrastructure and site development needs. Specialized labor will be required for certain aspects of the Project. It may be necessary to import specialized labor from other areas of North Dakota or neighboring states because the relatively short construction duration often precludes special training of local or regional labor. Skilled labor would receive short-term economic benefits during construction. No adverse impacts are anticipated.	No change.
Cumulative impact:		
The cumulative effects of the location of the facility in relation to existing and planned facilities and other industrial development.	Geronimo Energy, is developing a two-phased wind Farm in Cass County (Prosperity Wind Farm, LLC 1 and 2) located approximately 12 miles west of Harmony. This new development coupled with existing wind facilities in the area are not anticipated to have adverse cumulative effects, given the distance from the wind facilities and the fact that the solar development is low profile solar development and has other characteristics that differ from wind facilities. Additionally, Harmony is located approximately 7 miles from West Fargo, approximately 3 miles from Mapleton, and approximately 3	The location of the Project has not changed. As such, West Fargo, Mapleton, and Casselton are within 7 miles of the Project. At these distances, the Project will not interfere with any potential planned expansion of the surrounding boundaries of these municipalities. Harmony is continuing to develop a second phase of the Harmony Solar Project; however, adverse cumulative effects are not anticipated as solar is low profile, does not create odors and is virtually noiseless. Even with the planned solar development, there is an abundant amount of property in the Project vicinity

Table 3.3-1: Summary of Selection Criteria

Selection Criteria	Potential Adverse Effects from the Project	
	2018 Application	Current Project
	miles from Casselton. At these distances, the Project will not interfere with any potential planned expansion of the surrounding municipal boundaries. Harmony believes there is additional solar opportunity in the area and a second phase of Harmony is under development. However, adverse cumulative effects are not anticipated as solar is low profile, does not create odors and is virtually noiseless. Even with the planned development in the area, there is an abundant amount of property in the Project vicinity and in Cass County to accommodate other possible industrial development.	and in Cass County to accommodate other possible development. NG Renewables (formerly Geronimo Energy, LLC) is continuing to pursue a two-phased wind farm in Cass County (Prosperity Wind Farm, LLC 1 and 2) located approximately 12 miles west of Harmony. This new development coupled with existing wind facilities in the area are not anticipated to have adverse cumulative effects, given the distance from the wind facilities and the fact that the solar development is low profile and has other characteristics that differ from wind facilities. Review of Cass County's interactive web mapper for planned construction projects does not show any upcoming construction projects in Harmony Township. The nearest upcoming construction project involves road improvements on 36th Street SE, southwest of Casselton. Due to the distance between the Project and this location, adverse cumulative effects are not anticipated. Review of the NDPSC docket did not identify any additional wind or solar development projects in Cass County as of the filing of this Environmental Report.

3.4 Policy Criteria[5]

In accordance with NDAC Section 69-06-08-01(6), "The Commission may give preference to an applicant that will maximize benefits that result from the adoption of the following policies and practices, and in a proper case may require the adoption of such policies and practices. The commission may also give preference to an applicant that will maximize interstate benefits."

Table 4.4-1 lists the policy criteria in effect at the time the CSC was issued, notes the information discussed in Section 3.4 of the 2018 Application, and provides any updates to the information for the Project.

Table 3.4-1: Summary of Policy Criteria

Policy Criteria	Applicant's Policies And Practices	
	2018 Application	Current Project
Recycling of the conversion byproducts and effluents	The selected construction contractor typically develops a Waste and Recycling Management Plan. Additionally, cardboard the panels are delivered in and other reusable construction materials will be recycled.	No change.
Energy conservation through location, process, and design	The proposed Project has been designed to maximize energy conversion where available.	No change.
Training and utilization of available labor in this state for the general and specialized skills required	Harmony will create new local job opportunities for various trade professionals and will use skilled and trained labor from North Dakota, as possible.	No change.
Use of a primary energy source or raw material located within the state	The energy generated will come from available solar resources of the state. In addition, gravel will likely be obtained from a local source for access roads and inverter pad construction.	No change.
Not relocating residents	No relocation of residents will occur.	No change.
The dedication of an area adjacent to the facility to land uses such as recreation, agriculture, or wildlife management	The Project will not interfere with adjacent land uses. Additionally, the site will utilize a pollinator friendly seed mix, thereby potentially benefitting and increasing the overall populations of wildlife species in the area, including small mammals, reptiles, and pollinator insects. Further, land adjacent to the Project Area is privately owned and not	No change.

[5] As defined in NDAC 69-06-01-01, policy criteria are 'criteria' that guide and govern the selection of energy conversion facility sites and transmission facility corridors and routes in order to maximize benefits during the construction and operation of a facility.

Table 3.4-1: Summary of Policy Criteria		
	Applicant's Policies And Practices	
Policy Criteria	2018 Application	Current Project
	under Harmony's control. For these reasons, Harmony does not plan to dedicate an area of land adjacent to the Project to the specified land uses.	
Economies of construction and operation	As a 200 MW solar project, Harmony will benefit from economies of scale related to Project construction and operation. Solar energy projects have one-time costs that remain relatively stable despite the scale of the project. Therefore, a larger project will have cost advantages in comparison to a smaller project because the fixed costs are spread out over more units of output. Some examples of solar project costs that remain similar despite the project size: an on-site office space and substation procurement and construction.	No change.
Secondary uses of appropriate associated facilities for recreation and the enhancement of wildlife	The Project will not interfere with adjacent land uses. Additionally, the site will utilize a pollinator friendly seed mix, thereby potentially benefitting and increasing the overall populations of wildlife species in the area, including small mammals, reptiles, and pollinator insects.	No change.
Use of citizen coordinating committees	Harmony has coordinated and will continue to coordinate with landowners and local businesses and groups located within and near the Project Area. Therefore, a citizen coordinating committee is not needed.	No change.
A commitment of a portion of the energy produced for use in this State	Electricity generated by Harmony will enter the North Dakota grid and will follow the path of least resistance in terms of where it is used. If the power is purchased by an out of state buyer the electricity will remain near the Project and will continue to contribute towards North Dakota's renewable, recycled, and conserved energy production.	No change.
Labor relations	No impact to labor relations are anticipated.	No change.
The coordination of facilities	Existing facilities were considered in the location of the Project and its associated facilities.	No change.
Monitoring of impacts	Harmony Solar will monitor construction activities and use best management practices	No change.

Table 3.4-1: Summary of Policy Criteria		
	Applicant's Policies And Practices	
Policy Criteria	2018 Application	Current Project
	(BMPs) throughout Project construction. During Project operation and restoration, Harmony will monitor the Project and assess impacts as well and comply with all requirements set forth in the Certificate.	

4.0 UPDATED ENVIRONMENTAL ANALYSIS

A detailed analysis of potential environmental impacts was presented in Harmony's 2018 Application. Project design changes described in Section 1.0 of this Environmental Report do not significantly alter the analysis presented in the 2018 Application (see Table 4.0-1). As noted in the table below, for certain resources, Harmony conducted additional analyses to confirm that the Project continues to meet the conditions upon which the CSC was issued.

Table 4.0-1 Updates to Environmental Analysis

June 2018 CSC Application Environmental Analysis Section		Current Project
Section 6.0 Description of Environmental Setting		No update needed.
Section 6.1 Demographics		Current U.S. Census Bureau data provided.
Section 6.2 Land Use, Ownership, and Management	Land Use	Land cover/use data from the USGS GAP (2011) has not changed since the 2018 Application was filed. Updated land use impact data is provided for the current Project layout.
	Ownership and Management	No update needed.
Section 6.3 Public Services		A discussion of coordination with Cass Rural Water District regarding a water line easement along the southern edge of 32nd Street SE is provided in Section 7.5.
Section 6.4 Human Health and Safety		No update needed.
Section 6.5 Sound		Updated inverter sound specifications are provided for the current Project design.
Section 6.6 Visual		An updated Glare Analysis for the updated Project layout is provided in Appendix F.
Section 6.7 Cultural and Archaeological Resources		An updated Class I literature review was conducted in August 2023; the results are presented in Section 4.4.
Section 6.8 Recreational Resources		No update needed.
Section 6.9 Land-based Economics	Agriculture	USDA 2022 Census of Agriculture data provided.
	Woodlands	No update needed.
Section 6.10 Soils		No update needed.
Section 6.11 Geologic and Groundwater Resources		No update needed.
Section 6.12 Surface Water and Floodplain Resources		An additional wetland delineation was conducted in August 2023; the results are presented in Sections 4.6 and 4.7.
Section 6.13 Wetlands		
Section 6.14 Vegetation		Impact data is presented for the current Project design.

Table 4.0-1 Updates to Environmental Analysis	
June 2018 CSC Application Environmental Analysis Section	**Current Project**
Section 6.15 Wildlife	Updated wildlife information is provided in Section 4.9.
Section 6.16 Rare and Unique Natural Resources	Current information for federal and state threatened, endangered, and candidate species is provided, and a reassessment of potential Project impacts is presented in Section 4.10.

Table 6-11 in Section 6.17 of the 2018 Application presents a summary of potential environmental impacts and proposed mitigation measures for each of the resources listed in Table 4.0-1. Where applicable, updated information, including the results of any additional studies and analysis and updated agency consultations, are presented in Sections 4.1 through 4.10. Consistent with the analysis of environmental impacts presented in the 2018 Application, Harmony's updated review focused on the area within a 3-mile radius of the 1,622-acre Project Area (i.e., the Study Area).

Generally, the existing environment described throughout Section 6.0 of the 2018 Application has not changed since the CSC was issued. Harmony conducted additional biological and cultural resources surveys within the Project Area to provide current site-specific information on wetlands, invasive and noxious weeds, and cultural resources. The results of these surveys are summarized in the applicable sections below. Impacts are quantified where possible based on either publicly available information or field survey data. Project impacts are calculated as follows:

- Land use conversion from agricultural and developed land to solar facility and grassland of 1,662.0 acres, consisting of:
  - Direct impacts, or land use conversion from agricultural and developed to solar facility (approximately 30.6 acres), which includes access roads, inverters, the Project substation and O&M facility footprint, and the laydown/parking area; and
  - Land use conversion from agricultural and developed land to grassland (approximately 1,631.4 acres), which includes the entire Project Area, less the direct impacts, and consists of the laydown areas, land beneath the solar arrays, the electrical cables connecting the groups of solar arrays where they extend outside of the security fence, and unused space within and outside of the security fence that will be taken out of crop production and planted with an approved seed mix.

The footprint of impacts described above will depend on final engineering.

4.1 Demographics

The Project Area is in Harmony Township, Cass County, North Dakota, which has not changed since the CSC was issued. The incorporated communities that are geographically closest to the Project Area are Casselton (3.6 miles southwest), Mapleton (4.5 miles south/southeast), and

Amenia (5.2 miles northwest). The nearest metropolitan area is Fargo-West Fargo which is approximately 7.4 miles southeast of the Project Area.

Table 4.1-1 presents updated population and economic information gathered from the state and county profiles on the U.S. Census Bureau's Explore Census Data website (U.S. Census Bureau, 2024a and 2024b).

Table 4.1-1: Demographic Information

State/County	Total Population 2020 Census	Vacant Housing Units	Per Capita Income (Dollars)	Percentage of Population Below Poverty Level (All People)	Unemployment Rate (percent)
North Dakota	779,094	48,089	41,800	11.5	2.2
Cass County	184,525	6,725	41,923	13.0	2.1
Sources: U.S. Census Bureau, 2024a and 2024b.					

Compared to the U.S. Census Bureau information provided in Section 6.1 of the 2018 Application, population numbers, vacant housing units, and per capita incomes have all increased at both the state and county levels. The percentage of the population below the poverty level has remained fairly constant at the state level, but is two percent higher at the county level. Conversely, unemployment rates have decreased at both the state and county levels.

4.1.1 Demographic Impacts/Mitigation

The Project continues to be designed to be socioeconomically beneficial to landowners, local governments, and communities. Landowner compensation is established by voluntary land lease agreements. Harmony remains committed to voluntarily forming the "Harmony Community Fund," for the purpose of engaging in and contributing money to the support of charitable activities within the communities near the Project.

In general, the land surrounding the solar facility would continue to be farmed. The annual lease payments to landowners are designed to positively compensate the landowners for any land removed from agricultural production.

Construction of the Project would provide temporary increases to the revenue of the area through increased demand for housing, lodging, food services, fuel, transportation and general supplies.

The Project will also create new local job opportunities for various trade professions that live and work in the area and it is typical to advertise locally to fill required construction positions. Opportunity exists for sub-contracting to local contractors for gravel, fill, and civil work. Additional personal income will also be generated by circulation and recirculation of dollars paid out by the Project as business expenditures and state and local taxes.

General skilled labor is expected to be available in Cass County or North Dakota to serve the Project's basic infrastructure and site development needs. Specialized labor will be required for certain aspects of the Project. It may be necessary to import specialized labor from other areas of

North Dakota or neighboring states because the relatively short construction duration often precludes special training of local or regional labor.

No substantial effects on temporary or permanent housing are anticipated. During construction, out-of-town laborers will likely use lodging facilities nearby. The operations and maintenance of the facility will require few long-term laborers. The Project anticipates that sufficient temporary and permanent housing will be available within Cass County, and within the Fargo-Moorhead metropolitan area, to accommodate these laborers.

The socioeconomic impacts associated with the Project layout changes described herein are anticipated to be the same as what was presented in the 2018 Application. The Project would have a positive impact on the socioeconomic conditions in the Study Area; therefore, no mitigative measures are proposed.

4.2 Land Use, Ownership, and Management

Land use, ownership, and management within the Study Area remains the same as what was presented in Section 6.2 of the 2018 Application and considered prior to issuance of the CSC.

The Project is located within a rural landscape, and the primary land use in the Study Area is agricultural (95.5 percent; USGS, 2011; Figure 4). The remainder of the Study Area consists of developed land (4.0 percent) and a small amount of forested land (0.4 percent), open land (<0.1 percent), and open water (<0.1 percent). Developed land within the Study Area generally consists of public roads and utility infrastructure, such as the existing Bison Substation. Forested land is a category in the USGS; however, forested land within the Study Area consists of isolated rows of relatively young trees that were planted for use as shelter belts or wind breaks along the edges of agricultural fields. Small areas of open land within the Study Area consist of shrub/scrub or herbaceous vegetation interspersed between agricultural fields and farmsteads, or areas of riparian vegetation along waterbody margins. The Lower Branch of the Rush River crosses through the Study Area and accounts for the small amount of open water noted in Table 6-2 of the 2018 Application.

Farmsteads are sparsely scattered throughout the Study Area, generally situated near public roads. No known center pivot irrigation systems are present within the Study Area. Based on a refreshed review of available aerial photography, approximately 72 occupied or occupiable residences are located within the Study Area; this is five more residences than were present when the same analysis was conducted for the 2018 Application. The nearest residence to the edge of a solar array is 1,033 feet away. The Project will not cause displacement or relocation of residences.

To the best of Harmony's knowledge, no mining is taking place or has taken place in the Study Area. The nearest gravel pit is approximately 15 miles west of the Project.

All land within the Study Area is privately owned. Harmony has not identified any state or federal conservation areas, including but not limited to state parks, state recreation areas, state nature preserves and natural areas, scenic trails, wildlife refuges, U.S. Fish & Wildlife Service (USFWS) wetland or grassland easements, or Waterfowl Production Areas within the Study Area. The

closest state conservation area is the Magnolia State Game Management Area which is located approximately 14 miles west/southwest of the Project Area and outside of the Study Area.

4.2.1 Land Use Impacts/Mitigation

Table 4.2-1 provides the total acres of each land use type that would be affected by construction and operation based on the updated Project design presented in this Environmental Report. Land use impacts that were presented in the 2018 Application are also provided to allow comparison of the previous and current Project designs.

Table 4.2-1: Land Use Impacts

	2018 Application			Current Project		
Impact Type	**Agricultural**	**Developed**	**Total**	**Agricultural**	**Developed**	**Total**
Direct	41.4	0.3	41.7	30.0	0.6	30.6
Conversion to Grassland	1,312.1	7.1	1,319.2	1,578.7	52.7	1,631.4
Land Use Conversion Subtotal	**1,353.5**	**7.4**	**1,360.9**	**1,608.7**	**53.3**	**1,662.0**
Temporary[1]	0.8	0.3	1.1	N/A	N/A	N/A
Total	**1,354.3**	**7.7**	**1,362.0**	**1,608.7**	**53.3**	**1,662.0**

[1] In the 2018 Application, the areas where electrical collection and communication lines would extend beyond the fence line of the solar facility were categorized separately as temporary impacts. In the updated Project design, Harmony proposed to convert the entire Project Area, less areas of direct impact, to grassland. As such, electrical collection and communication lines that extend outside of the fence line are now captured as Conversion to Grassland.

Source: USGS, 2011

Note: The sum of addends may be off by up to 0.1 due to rounding.

The Project Area has not changed; as such, the current Project design would predominantly affect agricultural and developed land as was true in the previous Project design presented in the 2018 Application.

Agricultural land will be converted from agricultural use to solar energy use for the life of the Project but preserved and the soils given the opportunity to rest and regenerate. Agricultural land within the fenced area of the solar facility will be converted to open, herbaceous (i.e., grassland) cover with the exception of the substation and O&M facility, inverters, and access roads which will be converted to developed land and impervious surfaces (25.6 acres).

As was true of the previous Project design, the conversion of agricultural land to grassland and low impact developed land within the fenced area of the solar facility will have a minimal impact on the rural character of the surrounding area or Cass County. The Project would reduce the amount of land used for agricultural production (i.e., 941,171 acres according to the USDA 2022 Census of Agriculture) in Cass County by about 0.1 percent. Agricultural production would be allowed to continue in the surrounding areas during construction and operation of the Project.

Harmony remains committed to working with landowners to avoid and minimize detrimental impacts to agricultural land and crops during construction. If unavoidable impacts to crop planting, crop damage, soil compaction, or drain tile do occur, Harmony will compensate landowners or use restorative techniques (including but not limited to, drain tile repair and soil restoration) as mitigative measures.

There are no residences within the Project Area; the nearest residence is 1,033 feet from the Project facilities; this residence is owned by a Project participant. No residences will be impacted by the updated Project layout presented herein; therefore, no mitigation is proposed.

As noted in Section 6.2 of the 2018 Application, land in the Project Area is privately owned. Harmony has not identified any federal or state conservation areas within the Project Area; therefore, no impacts to these areas would occur and no mitigation measures specific to conservation areas are proposed.

4.3 Sound

The Project Area has not changed from what was considered by the Commission prior to the issuance of the CSC. As such, the setting of the Project remains the same as what was described in Section 6.5 of the 2018 Application. Common sound sources within an agricultural and/or rural environment include, but are not limited to, sound from farm equipment such as tractors and combines, sound generated from traffic on roadways, sounds from birds, and wind rustling through the vegetation. Typically, the ambient acoustic environment of a rural or agriculturally oriented community has equivalent continuous sound levels (Leq, which is an energy-based time-averaged noise level) ranging from 30 A-weighted decibels (dBA) to 60 dBA.

4.3.1 Sound Impacts/Mitigation

Noise will be emitted by construction vehicles during the period of active construction and the amount of noise will vary based on what type of construction is occurring at the facility on a given day. As discussed in Section 6.5.1 of the 2018 Application, these noise impacts will be temporary and will resolve when construction is complete.

The main source of noise emitted during operation of the Project will be from the inverters, and to a lesser extent from the transformers and rotation of the tracking system. All electrical equipment will be designed to comply with National Electrical Manufacturer Association Standards. Neither North Dakota nor Cass County has defined noise standards for solar facilities. However, the Commission has a requirement of a maximum of 45 dBA within 100 feet of an occupied residence or community building for wind energy conversion facilities. Harmony has applied the current wind energy standard to the analysis of potential noise effects from operation of the Project as described herein.

The updated Project design contemplates a different inverter than was identified in Table 6-5 of the 2018 Application. The ATI DuraTrack HZ v3 tracker is still proposed for the Project and the noise specifications for this tracker are the same as what was presented in the 2018 Application; however, the distance to comply with the current noise standard of 45 dBA has been updated.

Table 4.3-1 provides the anticipated distance to reach 45 dBA from the inverters and trackers under consideration for the Project.

Table 4.3-1: Inverter and Tracker Noise Levels

Facility Type	Equipment Model	Distance to 45 dBA
Inverter	SMA Sunny Central 4200	328 feet
Tracker	ATI DuraTrack HZ v3	9 feet

The results of noise modeling conducted by technology manufactures outlined in Table 4.3-1 show that noise levels will be 45 dBA at 328 feet from the inverter and within 9 feet from the tracker. As such, even if a requirement of no more than 45 dBA within 100 feet of an occupied residence were imposed, the Project would meet the requirement, as the nearest home to the facility is 1,033 feet away and the nearest community building is the Central Cass Public School which is about 4.0 miles southwest of the edge of a solar array. Further, because the inverters are typically located within the middle of the solar arrays, the noise levels from Project equipment are not expected to be discernible from background noise levels at homes in the vicinity.

Harmony remains committed to limiting construction to daylight hours. No noise impacts are anticipated during operation; therefore, no mitigation measures are proposed.

4.4 Cultural and Archaeological Resources

Area M Consulting (Area M) conducted a Class I and Class III cultural resources inventory for the Project Area in 2016. No cultural resources were identified within the Project Area or Cultural Resource Study Area (i.e., within 0.5 mile of the Project Area) as a result of this investigation. The results of Area M's review were submitted to the State Historical Society of North Dakota (SHSND) for review and comment in 2017. In a letter dated September 8, 2017, SHSND noted the report was acceptable and agreed with Area M's recommendation that the Project would have no adverse impact on historic resources eligible for listing in the National Register of Historic Places (NRHP). A copy of Area M's Class I and Class III inventory report was provided in Appendix E of the 2018 Application and copies of the correspondence with SHSND were provided in Appendix C of the 2018 Application.

In support of this CCS, Tetra Tech conducted an updated Class I Cultural Resources Inventory in August 2023 to verify the results of the previous investigations have not changed. The updated research identified one additional Class III inventory completed in 2022 that includes portions of the Project Area and Cultural Resource Study Area. Between this additional Class III inventory, Area M's previous investigations, and another Class III inventory conducted in 2008 that also covers portions of the Study Area and Project Area, the entire Project Area has been inventoried for the existence of cultural resources and no cultural resources were identified. A copy of the updated Class I Cultural Resources Inventory is provided in Appendix G.

No archaeological sites or historic architectural resources were identified as a result of previous Class I and Class III inventories of the Project Area or Study Area and no cultural resources were identified as a result of the updated Class I inventory conducted in August 2023. As such, the

updated Project layout will not impact historic properties listed in, recommended for, or potentially eligible for listing in the NRHP.

Harmony has prepared an Unanticipated Discoveries Plan that outlines the steps to be taken if previously unrecorded cultural resources or human remains are encountered during construction. A copy is provided in Appendix H. No additional mitigation measures are proposed.

4.5 Land-based Economics

According to the USDA's 2022 Census of Agriculture, of the 1,129,536 acres that comprise Cass County, approximately 941,171 acres (83 percent) are farmland. A total of 801 individual farms are in Cass County, with an average farm size of 1,175 acres. The three top crops (in acres) include soybeans, corn, and wheat (predominantly spring wheat for grain), while cattle, hogs and pigs, sheep and lambs, and poultry are the top livestock categories in the county. The market value of agricultural products sold in Cass County in 2022 was approximately $613 million. Crop sales accounted for approximately 97 percent of the total value of agricultural products sold, while livestock, poultry, and their products accounted for the remaining three percent (USDA, 2022).

4.5.1 Land-Based Economics Impacts/Mitigation

The updated Project layout would require conversion of approximately 1,608.7 acres of agricultural land to solar facility and grassland cover for the life of the Project. This would reduce the amount of land used for agricultural production (i.e., 941,171 acres according to the USDA 2022 Census of Agriculture) in Cass County by about 0.2 percent, which would not have a significant impact on the overall agricultural market in Cass County. Agricultural production would be allowed to continue in the surrounding areas during construction and operation of the Project. As noted in the 2018 Application, no areas used for animal husbandry are located within the Project Area; therefore, no impacts on livestock are anticipated.

As described in Section 6.9.1 of the 2018 Application, any loss of revenue that occurs from removing land from agricultural production will be offset by solar energy production and the land lease and solar easement payments to the participating landowners. Harmony remains committed to restoring areas disturbed during construction to pre-construction contours and characteristics to the extent practicable. Restoration will help the Project's land surfaces to drain properly, blend with the natural terrain, re-vegetate naturally, and avoid erosion.

Based on discussions with Project landowners, Harmony does not believe drain tile is present in the Project Area. However, Harmony will gather additional information about the existence of drain tile from landowners and other data sources, possibly including, but not limited to, infrared aerial photographs. In the event that damage occurs to drain tile or private ditches as a result of construction activities or operation of the Project, Harmony will work with the affected property owners to repair any damages.

4.6 Surface Water and Floodplain Resources

As described in Section 6.12 of the 2018 Application, the Study Area is in the eastern part of Cass County within the Lower Sheyenne Watershed, which is part of the Hudson Bay drainage. Numerous lakes and ponds are located throughout Cass County; however, many of the lakes and ponds are in the west and southwest portion of the county and average 4.7 acres in size. These lakes and ponds provide flood protection, irrigation, and recreation. There are no lakes within the Study Area.

Surface water and floodplain resources in the Project Area remain the same as what was described in Section 6.12 of the 2018 Application. According to the USGS National Hydrography Dataset (NHD), two intermittent streams are located within the Project Area (NDGISHUB, 2022). One unnamed intermittent stream is mapped in the southwest portion of the Project Area within an agricultural setting in Section 16. The second intermittent stream is the Lower Branch Rush River, and it is mapped within the central portion of the Project Area in Section 10. A wetland and waterbody survey of the Project Area was completed in 2018 and the results were summarized in Section 6.12 of the 2018 Application. A second survey was completed in 2023. Both surveys determined that the NHD mapped unnamed stream in Section 16 is not present. Both surveys also confirmed the presence of the Lower Branch Rush River in Section 10.

The Lower Branch Rush River intersects the Project Area in two locations. The first location is at the Project Area's narrowest point along 160th Avenue SE where underground collector lines are proposed to connect the solar arrays in Section 16 to the arrays in Section 10. The second location consists of an approximately 1,125-foot section of the stream that crosses in and out of the south-central boundary of the Project Area in Section 10. The stream is outside of the fenced area in this location and no Project facilities are planned where the stream crosses through the Project Area boundary (Figure 6 and Appendix C). The remaining sources of surface water are wetlands, which are valuable for surface and subsurface water storage, nutrient cycling, retention of sedimentation, and plant and animal habitats. Wetlands are described further in Section 4.7.

There are no flood rating maps compiled by the Federal Emergency Management Agency (FEMA) for the Study Area due to its rural location. Additionally, the North Dakota State Water Commission (NDSWC) stated in a 2017 letter that there are no permits required relative to the National Flood Insurance Program (FIRM) based on the current effective FIRM and state minimum standards; a copy of this letter was provided in Appendix C of the 2018 Application. A follow up letter was submitted to the NDSWC on March 8, 2024; no response has been received to date.

4.6.1 Surface Water and Floodplain Impacts/Mitigation

Harmony submitted the 2018 wetland delineation report to the U.S. Army Corps of Engineers (USACE), Omaha District, North Dakota Regulatory Branch for a Jurisdictional Determination (JD) of Waters of the U.S. in the Project Area. In a letter dated January 12, 2017, the USACE provided an approved JD (AJD) for the Lower Branch Rush River; the agency did not identify any other wetlands or waterbodies as Waters of the United States (WOTUS); however, the AJD expired January 12, 2022 and is no longer valid. On November 9, 2023 an updated AJD request was submitted to the USACE for the wetland delineation report of survey work completed in 2023. In

a letter dated February 28, 2024 (Appendix I), the USACE provided an AJD that identified the portions of the Lower Branch Rush River present within the Project Area as WOTUS.

As noted above, facilities in the current Project layout avoid the segment of the Lower Branch Rush River where it crosses the Project Area in the southeast corner of Section 10. Underground electrical collection lines connecting the solar arrays in Section 16 to the arrays in Section 10 will cross the segment of the Lower Branch Rush River located within the Project area along the western edge of Section 10 (Figure 6); this crossing of the Lower Branch Rush River was part of the previous Project design when the CSC was issued. The collection lines will either be installed via horizontal directional drill under the waterbody or trenching. Due to the small impact area around this waterbody (i.e., less than 0.5 acre), the waterbody crossing will likely be permitted under a Section 404 USACE Nationwide Permit (NWP). In addition, the ND Division of Water Quality (NDDWQ) issues Water Quality Certification (WQC) with conditions for NWPs. As such, NWP and NDDWQ WQC specific general and/or regional conditions will be adhered to during construction and operation of the Project to protect topsoil, minimize soil erosion, and protect adjacent wetland and waterbody resources from direct and indirect impacts. Practices may include containing excavated material, use of silt fences, protecting exposed soil, stabilizing restored material, and re-vegetating disturbed areas with native species.

The Rush River Water Resources District (RRWRD) manages an easement associated with the Lower Branch Rush River where the electrical collection lines would be installed for the Project. A Utility Permit from the RRWRD is required for this crossing of the Lower Branch Rush River. Harmony is coordinating with Cass County and the RRWRD and will obtain the Utility Permit prior to constructing the crossing. Harmony will comply with all conditions of the Utility Permit.

The NDSWC provided contact information should surface water or groundwater be diverted for construction. Additionally, the Office of the State Engineer (OSE) reviewed the Project and determined that the Project will be constructed in the vicinity of surface waters. As such, the OSE requested to be notified regarding potential Project impacts to water resources, as these impacts may require a drainage permit or a construction permit. Harmony is determining the construction method for the installation of the collection lines across the Lower Branch Rush River and will coordinate with NDSWC and the OSE and will obtain all required authorizations.

The Project will not impact known floodplain areas; therefore, no mitigation measures are proposed.

4.7 Wetlands

As summarized in Section 6.13 of the 2018 Application, a desktop assessment of the Project Area was conducted followed by a formal wetland delineation in 2018. In support of this Environmental Report, an updated desktop assessment and wetland delineation were conducted in 2023 (Appendix J). The 2023 desktop assessment identified 20 potential wetlands through aerial imagery and existing data sources. Three of these were confirmed as wetland during field survey – WA001, WA011, and WA015 (Figure 6). WA001 (0.065 ac) is located along the northeast edge of the Project Area, adjacent to a roadside ditch and within an agricultural setting. WA001 was not previously delineated during the 2018 field survey, but due to more recent field conditions and the disturbed nature of the agricultural field, WA001 developed and was delineated during the 2023

field survey. WA011 (0.641 ac) and WA015 (0.063 ac) are riparian wetlands associated with the Lower Branch Rush River. WA011 and WA015 were included as part of the associated waterbody and were not delineated as separate features during the 2018 field survey. However, during the 2023 field survey, the riparian wetlands were delineated as separate features. WA001 was classified as a temporarily flooded, farmed wetland (PEMAf). WA011 and WA015 were classified as excavated palustrine emergent, seasonally flooded shallow marsh (PEMCx). The findings of the 2023 survey were the same as those of the 2018 survey, aside from the addition of wetland WA001.

4.7.1 Wetlands Impacts/Mitigation

As noted above in Section 4.6.1, On November 9, 2023 an updated AJD request was submitted to the USACE along with the 2023 Wetland Delineation Report. In a letter dated February 28, 2024 (Appendix I), the USACE provided an AJD that identified the two wetlands (WA011 and WA015) associated with the Lower Branch Rush River as WOTUS. Wetland WA001 was determined not to be a WOTUS.

The Project will not have any permanent impacts to wetlands, although Project construction may temporarily impact Wetland WA015. WA015 is associated with the segment of the Lower Branch Rush River located in the Project Area's narrowest point along 160th Avenue SE in Section 10 where underground collector lines are proposed, as noted above. Any impacts to WA015 would be temporary and permitted under the same NWP as the waterbody crossing discussed above in section 4.6.1. As noted in Section 1.2.1, Harmony proposes to seed the area outside of the security fenceline up to the limits of the Project Area boundary, where these wetlands are located, in accordance with the Project VMP. As such, Wetlands WA001, WA011, and WA015 will be seeded with a wet prairie seed mix and maintained in an herbaceous state for the life of the Project. Wetland seeding will enhance vegetation diversity and density, thereby increasing the overall functional value of each wetland and reducing runoff and sedimentation into the associated waterbodies.

4.8 Vegetation

The vegetation within the Study Area and Project Area remains similar to what was presented in the 2018 Application. As discussed in Section 4.2, land use in the Study Area and Project Area is agricultural (USGS, 2011). The three top crops (in acres) include soybeans, corn, and wheat (predominantly spring wheat for grain) (USDA, 2022). One noxious weed, *Amaranthus palmeri*, was identified during the 2023 wetland delineation. It was associated with wetlands WA011 and WA015. Vegetative cover throughout the Project Area at the time of survey was primarily soybean (*Glycine max*) and wheat (*Triticum aestivum*) with *Typhus angustifolia*, *Phalaris arundinacea* and *Amaranthus palmeri* being dominant species within the wetlands associated with the Lower Branch Rush River.(Appendix J).

4.8.1 Vegetation Impacts/Mitigation

As discussed in Section 4.2, the current Project layout will impact 1,608.7 acres of agricultural land, 30.0 acres of which will be converted to impervious surfaces. The other 1,578.7 acres of agricultural land will be revegetated with a pollinator-friendly seed mix and maintained as

grassland for the life of the Project. Typically, a solar site has a shorter prairie mix within the panel footprint, taller prairie plantings in the open space between the fence and array, and a wet seed mix for any wetlands or areas anticipated to hold water. The mixes are designed to be native and are developed with prairie specialists to design a mix that will achieve Harmony's goals for operating the solar facility, promote pollinator habitat, establish stable ground cover successfully, reduce erosion, reduce runoff, and improve infiltration.

Harmony has developed two sets of seed mixes for this Project that each consist of a short, tall, and wet seed mixes. One set reflects a management method of traditional mowing, the other reflects a management method of utilizing sheep as grazers. The main difference between the mowing and grazing is that the grazers will eat all the legumes first, so legumes are cut from the grazing mix and replaced with other species. Harmony's maintenance method has yet to be determined, and, as such both seed mixes are included in the updated VMP for the Project (Appendix B).

Harmony consulted with the North Dakota Department of Agriculture (NDDOA) on the seed mixes and the updated VMP in correspondence dated March 18, April 30, and May 22, 2024 (Appendix I). In correspondence dated May 22, 2024, the NDDOA recommended that the VMP include the maintenance of seed labels and certificates of analysis from the seed certification agency in the state from which the seed was obtained or, if no labels are available, to request an analysis by the North Dakota State Seed Department (NDSSD) prior to planting. Harmony confirmed in correspondence dated June 5, 2024 that the VMP includes seed tag compliance and provided an updated VMP that includes a statement regarding obtaining an analysis from NDSSD if seed tags are not available.

Harmony consulted with Cass County on the updated VMP in correspondence dated June 6 and June 21, 2024 (Appendix I). A response from Cass County specific to the updated VMP is pending.

4.9 Wildlife

Avian Species

Consistent with the 2018 Application, the Study Area is located on the eastern edge of the Central Flyway, one of the primary north-south migration routes between migratory bird nesting and wintering habitat migratory bird routes. The Study Area remains within the Prairie Potholes Bird Conservation Region (BCR) (USFWS, 2021). However, the USFWS updated the Birds of Conservation Concern (BCC) in 2021 (USFWS, 2021). Based on the 2021 update, there are 34 species of birds within the Prairie Potholes BCR as BCC; BCC are avian species that represent the agency's highest conservation priorities. According to the USFWS Information for Planning and Consultation (IPaC) website, the BCC that may be present in the Project Area include the bobolink (*Dolichonyx oryzivorus*), chestnut-collared longspur (*Calcarius ornatus*), and pectoral sandpiper (*Calidris melanotos*) (USFWS, 2024a).

Land uses in the Study Area have not changed from what was described in the 2018 Application and remain primarily agricultural (95.5 percent), with some developed land (4.0 percent) and small amounts of forested land (0.4 percent), open land (<0.1 percent), and open water (<0.1 percent). Because of the small amount of forested land in the Study Area, few migratory bird species that

use trees or forested areas as habitat will be present. Similarly, because of the small amount of open water and absence of wetlands in the Study Area, no wetland- or water-dependent birds are anticipated to use the site, including waterfowl and waterbirds. Species of migratory birds associated with grassland would also be limited or absent. Overall, few if any BCC are likely to use the Study Area as habitat.

Since the issuance of the CSC, the Project site continues to meet the conditions upon which the CSC was issued. In a letter dated November 14, 2023, Harmony requested an updated review of the Project from USFWS for potential impacts on species under its jurisdiction. In a letter dated December 18, 2023, the USFWS provided updated comments and recommendations on the Project.

In a letter dated January 29, 2024, Harmony requested an updated review of the Project from the North Dakota Game and Fish (NDGF). In a letter dated February 21, 2024, NDGF recommended that Harmony conduct a minimum of 2 years post-construction fatality monitoring, a practice that is more typical for wind energy conversion projects. In a follow-up meeting on June 13, 2024, Harmony and NDGF discussed potential alternatives to fatality monitoring, including guidance outlined in the National Solar Research Plan by the Renewable Energy Wildlife Institute, which would allow for information beyond avian mortality to be recorded and considered. NDGF indicated support of these additional studies but maintained the recommendation to also conduct post-construction fatality monitoring. NDGF confirmed that no additional pre-construction studies or surveys are needed.

Other Wildlife Species

Wildlife within the Study Area remains similar to what was described in the 2018 Application. As noted above, the NDGF provided updated recommendations to Harmony in a letter dated February 21, 2024 (Appendix I) and included the following recommendations specific to other wildlife species:

- Utilize wildlife safe fencing and implement measures or design features to ensure wildlife is not trapped within the facility.
- Design facility lighting to minimize light pollution.
- Develop and implement a noxious weed plan.
- Utilize wildlife-friendly seed mixes and plantings to the extent possible.
- Explore cost share opportunities for seed and monitoring to establish pollinator habitat.

4.9.1 Wildlife Impacts/Mitigation

Given that that Project Area is currently used as cropland, occurrence of wildlife within the Project Area is likely low. As a result, impacts on wildlife from the current Project layout are expected to be minor and insignificant, and similar to what was described in the 2018 Application and considered by the Commission prior to issuance of the CSC.

After construction and during operation, the Project may provide more wildlife habitat than the current land use provides. In areas of the Project where there are land-use conversion impacts and temporary impacts, Harmony will restore the site with a pollinator-friendly vegetation mix that may provide habitat for wildlife, including grassland birds, rodents, reptiles, and insects. In sum, although 30.0 acres within the Project Area would have permanent facilities and would not serve as wildlife habitat during operations, 1,578.7 acres would be restored and maintained as grassland, thereby potentially benefitting and increasing the overall populations of wildlife species in the area, including small mammals, reptiles, and pollinator insects.

Harmony is coordinating with USFWS and NDGF on post-construction studies for the Project. Harmony submitted a Draft Post-construction Fatality Monitoring (PCFM) Plan for USFWS and NDGF review that Harmony proposes to implement during the first year of operation of the facility. The Draft PCFM Plan utilizes current, scientifically validated methods to estimate the number of bird fatalities adjusted for searcher efficiency, carcass persistence, and spatial and temporal sampling intensity, and has been informed by study design guidance from the USGS and USFWS. The monitoring results will be provided to the NDGF to provide additional data on solar facility-related wildlife fatalities in North Dakota, to assist with recommendations for future projects. Coordination with USFWS and NDGF is ongoing.

4.10 Rare and Unique Natural Resources

Federal Listed Species

In a letter dated November 14, 2023, Harmony requested an updated review of the Project from USFWS for potential impacts on species under the agency's jurisdiction. In a letter dated December 18, 2023, the USFWS provided comments on the Project, including a list of threatened, endangered, proposed, and candidate species that may be present in the Project Area. The list included the northern long-eared bat (*Myotis spetentrionalis*), Dakota skipper (*Hesperia dacotae*), Western prairie-fringed orchid (*Platanthera praeclara*), and the monarch butterfly (*Danaus plexippus*). The letter further noted that the list of species is valid for 90 days and referred Harmony to the USFWS' IPaC database to obtain an updated list of species for use in determining if the Project may affect listed species (Appendix I).

In July 2024 Harmony reviewed the USFWS IPaC website (USFWS, 2024a) for a list of federally listed threatened and endangered species, candidate species, and designated critical habitat that may be present within the Project Area. There is no federally designated critical habitat within the Project Area (USFWS, 2024a). The IPaC review identified the federally endangered northern long-eared bat and monarch butterfly, a candidate species, as having the potential to occur in the Project Area. Further, the IPaC review notes that the northern long-eared bat only needs to be considered if the Project includes wind turbine operation (Appendix I). As the Project does not include wind turbine operation, the northern long-eared bat is not discussed further in this section.

Monarch Butterfly

On December 17, 2020, the USFWS published the result of its 12-month review of the monarch butterfly and determined that listing the species under the Endangered Species Act (ESA) was warranted but precluded. The species meets the criteria for listing as an endangered or threatened

species, but the USFWS cannot currently implement the listing due to limited staff and/or funding and because there are other listing actions with a higher priority. The species is now a candidate for listing; however, candidate species are not protected under the ESA. In March 2024, the USFWS announced it would submit a warranted or not warranted finding for the monarch by no later than December 4, 2024; indicating this extension would allow additional time to consider all the best available scientific and commercial data pertaining to the species and allow for necessary internal review (Iowa State University, 2024).

State Species of Conservation Priority

At the state level, North Dakota has identified 115 Species of Conservation Priority that are the focus of its Wildlife Action Plan, including 47 birds, 2 amphibians, 9 reptiles, 21 mammals, 22 fish, 10 freshwater mussels, and 4 insects (NDGF, 2015). Species of Conservation Priority are categorized in three different levels according to each species' conservation need. The NDGF focuses its efforts on conserving Species of Conservation Priority, but the state does not have prohibitions or require take permits associated with these species. Both of the federally listed species discussed above, the northern long-eared bat and monarch butterfly, are Level I Species of Conservation Priority (NDGF, 2015).

In a letter dated January 29, 2024, Harmony requested an updated review of the Project from NDGF for potential impacts on species under the agency's jurisdiction. The NDGF provided updated recommendations to Harmony in a letter dated February 21, 2024 (Appendix I). The letter did not identify species of concern or significant ecological communities within this area but recommended that Harmony coordinate with the USFWS regarding species listed under the ESA. The letter also included general recommendations regarding wildlife, which are further discussed in section 4.9.

In a letter dated March 8, 2024, Harmony requested an updated review of the Project from North Dakota Department of Parks and Recreation (NDDPR) for potential impacts on resources or species (via the North Dakota Natural Heritage biological conservation database) under the agencies' jurisdiction. The NDDPR response is pending.

4.10.1 Rare and Unique Natural Resources Impacts/Mitigation

Per the Official Species List generated in IPaC for the Project (Appendix I), the Dakota skipper and western prairie-fringed orchid are no longer species of concern in the Project Area. Per the guidance received from the USFWS, Harmony reviewed the IPaC database to obtain an updated list of species and for use in determining if the Project may affect listed species. The IPaC review indicated that the northern long-eared bat and monarch butterfly may be present within the Project Area; but further clarified that the northern long-eared bat only needs to be considered if the project includes wind turbine operations.

The monarch butterfly is a candidate for listing; however, candidate species are not protected under the ESA. As discussed above, the Project was designed to occur primarily in cultivated cropland. The Project will also avoid woodlands, shrublands, grasslands, and water resources to the degree practicable. It is possible that the Project will have minor, temporary impacts to existing vegetation serving as a food source to monarch butterflies; however, no long-term significant impacts to the

species are anticipated. As noted above, 1,578.7 acres of agricultural land will be revegetated with a pollinator friendly seed mix in accordance with the VMP (Appendix B). Typically, a solar site has a shorter prairie mix within the panel footprint, taller prairie plantings in the open space between the fence and array, and a wet seed mix for any wetlands or areas anticipated to hold water. The mixes are designed to be native and are developed with prairie specialists to design a mix that will achieve Harmony's goals for operating the solar facility, promote pollinator habitat, establish stable ground cover successfully, reduce erosion, reduce runoff, and improve infiltration.

The likelihood of North Dakota Species of Conservation Priority occurring within the Project is also low. According to the NDDPR's review of the North Dakota Natural Heritage biological conservation database in April 2016, there are no species of concern within one mile of the Project; an updated review from NDDPR is pending. In addition, current land use within the Project is agricultural. No impacts on North Dakota Species of Conservation Priority are anticipated, and no species-specific mitigation is proposed. As discussed above, Harmony will plant approximately 1,627.5 acres of the Project Area with a pollinator friendly seed mix that may provide habitat for Species of Conservation Priority.

5.0 FACTORS CONSIDERED

As further discussed in Sections 5.1 through 5.10, an analysis of the factors listed in NDCC Section 49-22-09 shows that the updated Project layout continues to meet the conditions upon which the CSC was issued.

5.1 Public Health and Welfare, Natural Resources, and the Environment

Section 8.0 of the 2018 Application and this Environmental Report present an analysis of the potential impacts of the Project on public health and welfare, natural resources, and the environment, as well as the proposed measures that would mitigate, minimize, or avoid impacts.

5.2 Minimizing Adverse Environmental Effects

Harmony has updated the Project design to incorporate the best available technologies, thereby optimizing solar and land resources, while minimizing adverse environmental effects. Harmony remains committed to the avoidance and minimization measures identified throughout Section 6.0 of the 2018 Application and described in this Environmental Report.

5.3 Potential for Beneficial Uses of Waste Energy

Since solar energy does not create waste energy, there would be no use of waste energy associated with this Project.

5.4 Unavoidable Adverse Environmental Effects

The unavoidable adverse environmental effects of the updated Project layout described herein remain the same as those described in Section 8.4 of the 2018 Application. The estimated acres of land use conversion and temporary impacts from the updated Project layout are presented in Section 1.2 of this Environmental Report.

5.5 Alternatives to the Proposed Site

No alternatives to the Project's designated site were proposed during the public hearing prior to issuance of the CSC.

5.6 Irreversible and Irretrievable Commitment of Natural Resources

The irreversible and irretrievable commit of natural resources from the updated Project layout described herein remain the same as those described in Section 8.6 of the 2018 Application.

5.7 Direct and Indirect Economic Impacts

The direct economic impacts of the operation of the Project will be positive in both the short-term and the long-term, as stated in Section 8.7 of the 2018 Application. Landowners will be directly compensated for the use of their land, and they have chosen to participate in the Project, in part, because of the positive economic impact it will provide to them and their local community. Shorter-term economic benefits during construction include wages and salaries paid to local hires, which will contribute to the total personal income of the region.

There are also significant indirect benefits related to the supplies and services required for the construction and operation of a large-scale $320 million facility in this area. Additional personal income will be generated for residents in the county and the state by circulation and recirculation of dollars paid out by Harmony as business expenditures and state and local taxes. Expenditures will be made for equipment, energy, fuel, operating supplies, and other products and services, which will benefit businesses in the county and the state. The additional tax revenue and diversified income to landowners will have a positive impact on the local economy.

The development of solar energy in this region can also play an important role in diversifying and strengthening the economic base of eastern North Dakota. Additionally, continuing to establish North Dakota as a producer of renewable energy sources may spur the development of related businesses in the area, which will contribute to the economic growth in the region.

5.8 Existing Development Plans of the State, Local Government and Private Entities at or in the Vicinity of the Site

As stated in Section 8.8 of the 2018 Application, no conflicts are anticipated with existing state and local government or private entities' development plans. Harmony consulted with Harmony Township and Cass County prior to submittal of its CCS; to date, no conflict with existing development plans have been identified. Harmony received a CUP from Harmony Township in 2017, which was extended in 2021 and again in 2023.

5.9 Effect of Site on Cultural Resources

As discussed in Section 4.4, Harmony completed a Class I and Class III investigation of the Project Area in 2016 and no cultural resources were identified as a result. A report detailing the results of this investigation was provided to SHSND for review and comment and in a letter dated September 8, 2017, SHSND noted the report was acceptable and agreed with Area M's recommendation that the Project would have no adverse impact on historic resources eligible for listing in the NRHP. A refreshed Class I literature search was conducted in 2023 to verify the previous results; no cultural resources were identified.

Harmony is providing a copy of its Unanticipated Discoveries Plan in Appendix H, which details a process for prompt communication and action regarding the discovery of previously unknown cultural resources or human remains, should they be encountered during construction.

5.10 Effect of Site on Biological Resources

The potential impacts on biological resources from the current Project layout described herein remain similar to what was described in the 2018 Application and considered by the Commission prior to issuance of the CSC. The Project may have a temporary impact on the Lower Branch Rush River and its associated wetlands, depending on the construction method chosen for installing electrical collection lines across the waterbody (i.e., horizontal directional drill or trenching). Harmony will use BMPs to minimize impacts at this stream crossing. No FEMA floodplains are present within the Project Area.

Based on agency consultations to date, there are no documented occurrences of protected species in the Project Area. Harmony is consulting with the USFWS and NDGF regarding post-construction studies.

6.0 IDENTIFICATION OF POTENTIAL PERMITS/APPROVALS

Table 6.0-1: Potential Permits/Approvals

Agency	Permit	Applicability	Permit Status and Timing
FEDERAL			
US Army Corp of Engineers	Section 404 Permit for wetland/waterbody impacts.	Dredging or filling jurisdictional waters of the United States	May or may not be required dependent upon construction methodology for electrical cable installation crossing Lower Branch Rush River .
U.S. Environmental Protection Agency	Spill Prevention, Control, and Countermeasures Plan (SPCC Plan)	Required if any facility associated with the Project (O&M or substation) has oil storage of more than 1,320 gallons	To be obtained prior to construction, if necessary.
STATE			
North Dakota Public Service Commission	Certificate of Site Compatibility	Construction of energy conversion facility	Obtained February 26, 2019 (Number 58).
North Dakota Parks and Recreation Department	Review and Coordination	Provide results of Natural Heritage Database search within one mile of the Project	Complete. No records within one mile of the Project.
North Dakota Dept. of Heath	Section 401 Certification	Required for filling in jurisdictional waters of the United States	An Individual Section 401 certification will not be required, as the Project will either not impact jurisdictional waters of the U.S. or will qualify for a Nationwide Permit from the USACE, dependent upon construction methodology for electrical cable installation crossing Lower Branch Rush River.
	North Dakota Pollutant Discharge Elimination System General Permit (includes Stormwater Pollution Prevention Plan)	For stormwater discharges from construction activities with disturbances greater than one acre	To be obtained prior to construction.

Table 6.0-1: Potential Permits/Approvals			
Agency	**Permit**	**Applicability**	**Permit Status and Timing**
	Potable/Wastewater Permit	Required for installation of water or wastewater systems	To be obtained prior to construction of low-volume well at O&M Facility.
State Historical Society of North Dakota/State Historic Preservation Office	Review and Coordination	Provide concurrence on Class I and Class III inventory	Complete.
North Dakota State Water Commission	Drain Permit	Required for any pond, slough, lake or sheetwater drainage for areas with a watershed of 80 acres or more	Not anticipated at this time.
	Water Permit	Required when withdrawn water is greater than 12.5 acre-feet	Not anticipated at this time.
LOCAL			
Cass County	Floodplain Development Permit	Required for development within a floodplain	Not applicable. FEMA has not designated floodplains in the Project Area.
Harmony Township	Township Road Access Permit	Required for access from township roads	Harmony will coordinate with the Township to acquire this permit prior to construction.
	Conditional Use Permit	Required for construction within Harmony Township	Permit received August 27, 2017. Extensions received in 2021 and 2023.
	Building Permit	Required for construction within Harmony Township	Harmony will obtain prior to construction.
Cass Rural Water District	Water Line Easement	A water line easement overlaps with Harmony's easement in Section 11.	Harmony coordinated with Cass Rural Water District and associated landowners on the details of the easement and location of the water line in advance of their easement signing and construction of the line so both projects can coexist successfully. Harmony will coordinate with Cass Rural Water District on crossing agreements when later stage design is finalized.

Table 6.0-1: Potential Permits/Approvals

Agency	Permit	Applicability	Permit Status and Timing
Rush River Water Resource District	Utility Permit	Required for utilities under Lower Branch Rush River	Harmony will obtain prior to construction.

7.0 AGENCY COMMENTS

In support of this CCS, and pursuant to NDAC Section 69-06-04-01(4), Harmony distributed an updated request for comment letter to the 35 federal and state agencies entitled to notice as designated in NDAC Section 69-06-01-05. Additionally, Harmony has continued to coordinate with various local agencies including Cass County Commissioners, the Cass County Weed Control Officer, Cass County Soil Conservation District, Harmony Township, Cass Rural Water District, Rush River Water Resource District, and the Greater Fargo Moorhead Economic Development Corporation.

Responses to the updated request for comment letters received as of the date of this filing are summarized below and have been referenced and incorporated where appropriate in this Environmental Report. Refer to Appendix I for copies of the request for comment letter, mailing list, and responses received to date. Copies of agency responses to the September 25, 2017 request for comment and a summary of these responses were provided in Harmony's 2018 Application.

7.1 U.S. Army Corps of Engineers, North Dakota Regulatory Office

Harmony requested a JD from the USACE in November 2023 and provided a copy of the 2023 Tetra Tech wetland delineation report as part of the request. The USACE provided a JD on WOTUS in a letter dated February 28, 2024 and noted that some aquatic resources in the Project Area are jurisdictional, while others are not. A summary of the JD findings is presented in Sections 4.6 and 4.7. The JD is valid for 5 years and will expire on February 28, 2029.

7.2 U.S. Fish and Wildlife Service

Harmony requested comments on the updated Project layout in a letter dated November 14, 2023 to the USFWS North Dakota Ecological Service Office. The USFWS responded on December 18, 2023, noting some changes in protected species status since its original review of the Project in 2017 and providing recommendations for avoidance and minimization of impacts on protected species and their habitats. The USFWS further requested copies of any wildlife/habitat studies conducted for the Project. A copy of the USFWS response is provided in Appendix I.

In its response letter, USFWS noted that a number of the recommendations provided are most applicable to wind energy generation projects, but the agency provided guidelines and methods for applying mitigation measures such as post-construction mortality monitoring to solar facilities. As a follow up to the USFWS recommendations, and to recommendations received from the NDGF on February 21, 2024 (refer to Section 7.5 below), Harmony met with staff from the USFWS and the NDGF on June 13, 2024 to discuss the Project.

The main topic of discussion in the June 2024 meeting was agency recommendations for post-construction mortality modeling. Harmony presented information about past avian mortality studies at solar facilities and noted changes in solar panel design (i.e., use of trackers and anti-reflective coating) has minimized avian fatalities at operating solar facilities. Harmony discussed that an ecosystem-based approach similar to the one recommended by the National Solar Research Plan by the Renewable Energy Wildlife Institute may be a more effective way to examine the relationship between solar facilities and wildlife. The NDGF noted general agreement with the

ecosystem-based approach but clarified that it will continue to prioritize post-construction mortality monitoring because it is the opinion of the NDGF that the risk to wildlife from utility scale solar projects is still uncertain.

As follow-up to the June 2024 meeting, Harmony provided a proposed plan for pre- and post-construction monitoring, including a PCFM, to the USFWS and NDGF via email on July 17, 2024. A copy of this correspondence is provided in Appendix I. No response has been received as of this filing.

Harmony is continuing to consult with the USFWS and the NDGF about the Project and post-construction studies.

7.3 U.S. Air Force

Harmony received a response from the Grand Forks Airforce Base (GF AFB) to its request for comment on May 8, 2024 noting that the agency will review the proposal and send any feedback it may have. The GF AFB further recommended a contact at the Twentieth Air Force Ninety-first Missile Wing and noted that Lieutenant Colonel Haney is the correct contact for any future correspondence with the GF AFB. Harmony sent a project notification email to the identified contact on May 8, 2024. No additional response has been received to date.

7.4 Federal Aviation Administration

Harmony filed a Federal Aviation Administration (FAA) 7460-1 Notice of Proposed Construction forms for the max elevation and an additional 16 vertices within the solar arrays on March 16, 2023. On March 27, 2023 the FAA provided Determinations of No Hazard to air navigation for each of the 17 points within the Project. As such, Project facilities will not exceed obstruction standards and would not be a hazard to air navigation. Copies of the Determinations of No Hazard are provided in Appendix I.

7.5 North Dakota Game and Fish Department

Harmony requested comments on the updated Project layout from NDGF on January 29, 2024. In a letter dated February 21, 2024, NDGF provided recommendations related to site selection; micro-siting to avoid habitat loss, fragmentation, and impacts to threatened and endangered species; storm water management; pre-construction monitoring; construction practices; post-construction monitoring; pollinator opportunities to consider during site revegetation; and voluntary offsets.

As noted in Sections 4.9 and 6.2, Harmony met with the NDGF and USFWS staff to discuss post-construction monitoring recommendations made by both agencies. A summary of the correspondence with NDGF and USFWS to date is provided in Section 7.2 and copies of agency correspondence and meeting minutes are provided in Appendix I. A detailed discussion of wildlife and protected species is provided in Sections 4.9 and 4.10.

7.6 North Dakota Department of Agriculture

In its request for comment letter, Harmony provided a history of past communication with the NDDOA regarding the agency's review of the VMP for the Project. In its response on May 22, 2024, the NDDOA recommended that the VMP, "include the maintenance of seed labels and certificates of analysis from the seed certification agency in the state from which the seed was obtained or, if no labels are available, to request an analysis by the NDSSD prior to planting." Harmony provided a response on June 5, 2024 in which it noted that the NDSSD previously reviewed the Project VMP, provided copies of such correspondence and an updated copy of the Project VMP, and stated that Section 2.4 of the VMP had been updated to include a commitment to request an analysis from the NDSSD if seed tags are not available. Copies of correspondence with the NDDOA are provided in Appendix I.

7.7 North Dakota Department of Environmental Quality

The North Dakota Department of Environmental Quality (NDDEQ) responded to Harmony's request for comment on March 21, 2024. NDDEQ noted it has no land in or adjacent to the proposed Project Area nor does it have any projects scheduled in this location. The agency provided recommendations related to management and transport of solid waste; stormwater permitting requirements; minimizing degradation of waterways during construction; fugitive dust control during construction; and guidance for aggregate testing to ensure sources do not contain erionite. Copies of correspondence with NDDEQ are provided in Appendix I.

7.8 North Dakota Department of Transportation

In a letter dated March 14, 2024, the North Dakota Department of Transportation (NDDOT) indicated the Project should have no adverse effect on the NDDOT highways. NDDOT noted that if work was required on highway right-of-way, appropriate permits and risk management documents will need to be obtained from the District Engineer. A copy of NDDOT's response is provided in Appendix I.

7.9 North Dakota Aeronautics Commission

In a letter received on March 13, 2024, the North Dakota Aeronautics Commission (Aeronautics Commission) noted that the Project Area is 6 to 11 miles from the nearest public airports in Casselton, West Fargo, and it is unlikely the Project will directly impact these public airfields. The agency further notes that one small private airstrip is located 4 miles northwest of the Project Area and would not likely be impacted by the Project. The Aeronautics Commission recommends continuing to follow FAA obstruction evaluation procedures as the Project advances to ensure all safety measures are being considered.

7.10 Cass County

Harmony has been coordinating with Cass County staff since 2017 and the Cass County Commission previously provided a letter of support for the Project that was summarized in Section 9.8 of the 2018 Application and a copy of the letter was provided in Appendix C.

In addition to sending an updated Project notification and request for comment letter to Cass County on March 14, 2024, Harmony contacted the county on March 18, 2024 to provide a copy of the Project VMP and request an updated review and comment on this plan. The county forwarded the VMP to the NDDOA for review; a summary of the NDDOA's comments is presented in Section 6.6. Subsequent to its coordination with NDDOA, Harmony again contacted Cass County on June 6 and June 21, 2024 to provide an updated VMP that incorporates NDDOA's recommendations and request a refreshed review of the plan by the county. In addition to the updated VMP, Harmony provided copies of exhibits filed on the PSC docket for the Project during previous proceedings and requested contact information for the county Weed Control Officer. A response from the county is pending.

Harmony also contacted the Cass County Commission on May 22, 2024 to provide additional details about its CCS request for the Project and to request an updated letter of support. On July 1, 2024, Harmony attended the Cass County Commission meeting to present Project updates and request the county issue an updated letter of support. During the meeting, the Cass County Commission restated its support for the Project and approved issuance of an updated letter of support for the Project; a copy of this letter is provided in Appendix I.

7.11 Harmony Township

Harmony originally received a CUP from Harmony Township in August of 2017. An extension of the CUP was issued on January 7, 2021 and again on March 21, 2023. Harmony Township strongly supports the Project and has provided a letter of support (refer to Appendix I).

7.12 Rush River Water Resource District

Harmony began coordination with the RRWRD in early 2017 to identify and ensure avoidance of their easements along the Lower Rush River. A summary of correspondence between Harmony and RRWRD was provided in Section 9.11 of the 2018 Application and copies of correspondence were provided in Appendix C.

As shown in the updated Project layout depicted in Figure 2, collection lines connecting the solar modules in Section 16 to the solar modules in Section 10 will cross a RRWRD easement where these facilities cross the Lower Branch of Rush River in the southwest corner of Section 10. As such, the Project will require a Utility Permit from the RRWRD for the easement crossing. The Project Area also overlaps RRWRD easements in the southeast corner of Section 10 and the southwestern corner of Section 11; however, no Project facilities are currently planned in these locations. Harmony will continue to coordinate with the RRWRD to obtain a Utility Permit for the easement crossing in the southwest corner of Section 10 prior to constructing the crossing.

7.13 Cass Rural Water District

Harmony has been coordinating with the Cass Rural Water District regarding a water line easement that runs along the south side of 32nd Street SE (refer to Figure 2). The water line easement partially overlaps Harmony's easement in Section 11. Harmony coordinated with Cass Rural Water District and associated landowners on the details of the easement and location of the water line in advance of the landowner signing an easement with Cass Rural Water District and construction of the line

so both projects can coexist successfully. Harmony will coordinate with Cass Rural Water District on crossing agreements when later stage design is finalized.

8.0 REFERENCES

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