

Appendix P

Farmland Classification

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Farmland Classification

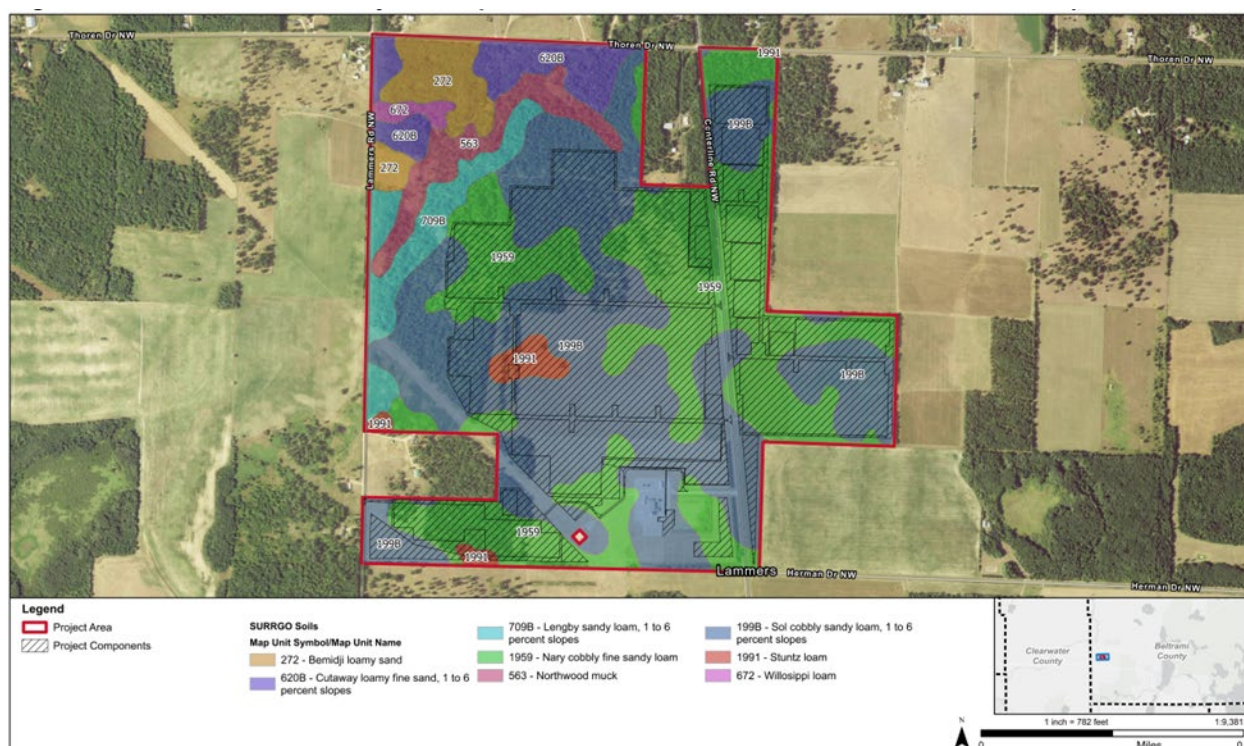
Under Minnesota law, no large electric power generating plant site may be permitted where the developed portion of the plant site includes more than 0.5 acres of prime farmland per megawatt (MW) of net generating capacity, unless there is no feasible and prudent alternative (MN Rules 7850.4400, subp. 4, also known as the Prime Farmland Rule). Economic considerations alone cannot be used as a justification for the use of more prime farmland. Under the Prime Farmland Rule, the Solway Solar Project, with its proposed up to 66 MW nameplate generating capacity, would be allowed to build on no more than 33 acres of prime farmland. This includes not only those soil types classified as “prime farmland”, but also those soil types rated “prime farmland if drained.”

“Prime farmland” means those soils that meet the specifications of Code of Federal Regulations 1980, title 7, section 657.5, paragraph (a) which provides:

“(p)prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water).”

The overall Solway Solar Project Area is approximately 487 acres in size and contains eight NRCS/SSURGO soil types (see **Figure M-1**).

Figure M-1. SSURGO Soil Types in the Solway Solar Project Area



Source: National Agriculture Imagery Program 2023

Of these eight soil types, Lengby sandy loam is the only type considered prime farmland. Two soil types, Stuntz loam and Willosipi loam, are considered prime farmland if drained. The remaining five soil types are considered “not prime farmland” or “farmland of statewide importance”, which is a

classification that does not meet the standard of prime farmland. **Table M-1** lists the acreages of soil types within the 487-acre Project Area (the overall Project property owned by OTP) and the 267-acre Project Footprint (the actual area covered by proposed Project facilities). **Table M-1** also lists the relevant farmland and other agricultural classifications for each soil type.

Table M-1. Solway Solar Project Area Soils: Agriculture-Related Classification Data

Soil Name	SSURGO Map Unit Symbol	Acreage within Project Area	Acreage within Project Footprint	Prime Farmland Rating ¹	Land Capability Classification ²	Hydric Rating ³	MN Crop Productivity Index ⁴
Sol cobbly sandy loam, 1-6% slope	199B	221.8	140.5	Not Prime Farmland	4s	2	50
Nary cobbly fine sandy loam	1959	165.9	119.5	Farmland of Statewide Importance	3s	2	58
Lengby sandy loam	709B	24.5	0	Prime farmland	2e	2	72
Cutaway fine sandy loam	620B	23.3	0	Farmland of Statewide Importance	3s	2	56
Bemidji sandy loam	272	20.4	0	Farmland of Statewide Importance	3s	2,3	64
Northwood muck	563	19.9	0	Not Prime Farmland	6w	2,3	15
Stuntz loam	1991	8.7	6.7	Prime if drained	2w	2,3	92
Willosipi loam	672	3.5	0	Prime if drained	2w	2	58

Key

¹Prime Farmland Rating:

Prime Farmland – “land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses.”

Farmland of Statewide Importance – Land that has agricultural value but is “land that does not meet the criteria for prime or unique farmland.” (NRCS/SSURGO 2024a)

²Land Capability Classification:

There are eight classes within the Land capability Classifications. Soils on the Solway site fall under four of those classifications, which are defined as:

- Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices. (Lengby sandy loam, Stuntz loam, Willosipi loam)
- Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both. (Nary cobbly fine sandy loam, Cutaway fine sandy loam, Bemidji sandy loam)
- Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both. (Sol cobbly sandy loam)
- Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat. (Northwood muck) (NRCS/SSURGO 2024b)

³Hydric Rating:

There are five levels of Hydric Ratings. Soils on the Solway site fall under only two of those ratings, which are defined as:

- Hydric Code 2 - Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - Show evidence that the soil meets the definition of a hydric soil.
- Hydric Code 3 – Soils that are frequently ponded for long or very long duration during the growing season:
 - Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - Show evidence that the soil meets the definition of a hydric soil. (NRCS/SSURGO 2024c)

⁴MN Crop Productivity Index:

The Minnesota Crop Productivity Index (CPI) ratings provide a relative ranking of soils based on their potential for intensive row crop production. An index can be used to rate the potential yield of one soil against that of another over a period of time. Ratings range from 0 to 100. The higher numbers indicate higher production potential. (NRCS/SSURGO 2024d)

Table M-1 and **Figure M-1** show that 92.9% (~451.3 acres) of the overall Solway Solar Project Area lies within soil units that are not classified as prime farmland or prime farmland if drained. The most prevalent soil type, Sol cobbly sandy loam, is classified “not prime farmland”, and covers 241.7 acres, or 49.6% of the overall Project Area. The second most prevalent soil type on the site, Nary cobbly fine sandy loam, along with two other soil types, Cutaway and Bemidji, are classified as “farmland of statewide importance”, and cover a total of 209.6 acres, or 43% of the overall Project Area. Lengby sandy loam (563) is the only soil type classified as “prime farmland.” Two other soil types, Stuntz loam (1991) and Willosippi loam (672), are classified “prime farmland if drained.” Together these three soil types total 36.7 acres, or 7.5% of the overall Project Area.

The Project falls below the Prime Farmland Rule’s “0.5 acre/net MW generating capacity” ratio because only 6.7 acres of Stuntz loam (1991, prime if drained) are covered by the Project Footprint. As shown on **Figure M-1**, the Willosippi loam (672, prime if drained) and Lengby sandy loam (563, prime) soil units would not be affected by the Project Footprint. The Stuntz loam (1991, prime if drained) unit covers 8.7 acres, or ~1.8% of the overall Project Area. Of this, 6.7 acres of Stuntz loam would be covered by the Project Footprint.

Conclusion

Based on the proposed Project configuration and NRCS SSURGO soils mapping, the proposed Project Footprint will impact 6.7 acres of prime farmland, if drained, which is below the 33 acres allowed for a 66 MW electric power generating plant site under the Prime Farmland Rule. Therefore, the Solway Solar Project complies with the Minnesota Prime Farmland Rule.

References

- ¹Natural Resources Conservation Service/SSURGO. 2024a. Farmland Classification-Beltrami County, Minnesota (OTP Solway Solar Project). Report created 8/8/24 via NRCS Web Soil Survey site ([Web Soil Survey \(usda.gov\)](https://websoilsurvey.sc.egov.usda.gov/)) Accessed 8/8/24
- ²NRCS/SSURGO 2024b. Land Capability Classification - Beltrami County, MN. Report created 8/8/24 via NRCS Web Soil Survey. [Web Soil Survey \(usda.gov\)](https://websoilsurvey.sc.egov.usda.gov/) Accessed 8/8/2024.
- ³NRCS/SSURGO 2024c. Hydric Soils Ratings - Beltrami County, MN. Report created 8/8/24 via NRCS Web Soil Survey. [Web Soil Survey \(usda.gov\)](https://websoilsurvey.sc.egov.usda.gov/) Accessed 8/8/2024.
- ⁴NRCS/SSURGO 2024d. MN Crop Productivity Index- Beltrami County, MN (Solway_TaxParcel_20240730). Report created 8/8/24 via NRCS Web Soil Survey. [Web Soil Survey \(usda.gov\)](https://websoilsurvey.sc.egov.usda.gov/) Accessed 7/30/2024.