

Data Source(s): Westwood (2021); ESRI WMS USA Topo, National Geographic, & World Streets Basemaps (Accessed 2021); Census Bureau (2019).

**Legend**

- Project Area
- Municipal Boundary
- Major Road



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**Hayward Solar Project**

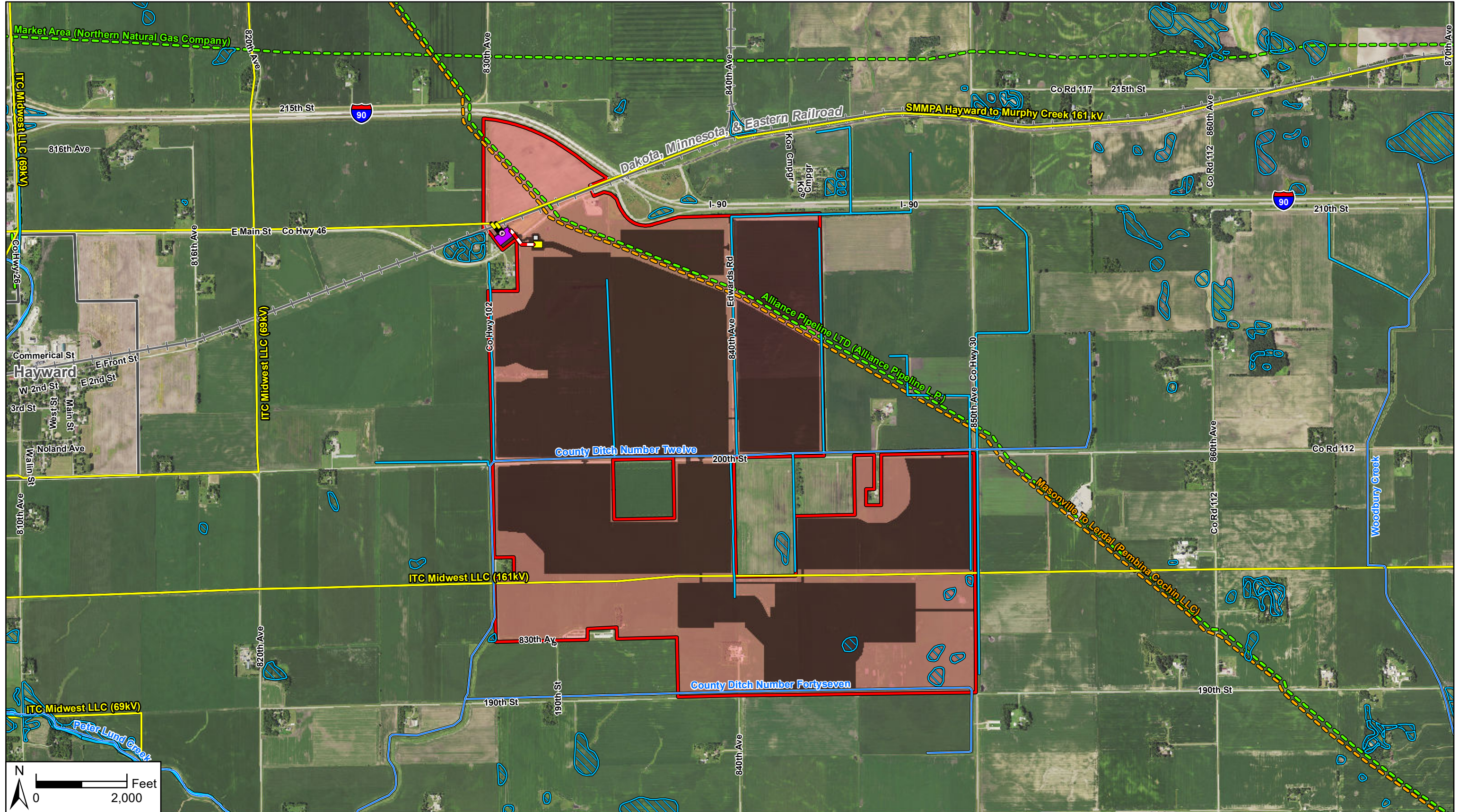
Freeborn County, Minnesota

Project Location &  
USGS Topography

Amended FIGURE 1 (October, 2021)

Map Document: N:\0026599\_00\GIS\SPA\_Figures\Hayward\_SPA\_Fig01\_ProjectLocation\USGS Topography\_210921.mxd 9/21/2021 4:23:04 PM radevils





Data Source(s): Westwood (2021); Minnesota NAIP Imagery (2019); Census Bureau (2019); Ventyx Velocity Suite, Ventyx Energy LLC, (2020); USGS NHD Dataset (2019); U.S. Fish and Wildlife Service (2020); Ducks Unlimited (2020); NPMS (2021). Existing pipeline routes are approximate.



**Legend**

- |                                      |                               |                              |                               |                    |
|--------------------------------------|-------------------------------|------------------------------|-------------------------------|--------------------|
| Project Area                         | Amended Proposed Substation   | Amended POI                  | Existing Transmission Line    | Named NHD Flowline |
| Current Site Control Area            | Amended SMMPA Switchyard      | Amended SMMPA Line Tap       | Existing Natural Gas Pipeline | NWI Wetland        |
| Amended Preliminary Development Area | Amended Proposed O&M Building | Amended Project Gen-Tie Line | Existing Crude Oil Pipeline   | Railroad           |
| Municipal Boundary                   |                               |                              |                               |                    |

**Hayward Solar Project**

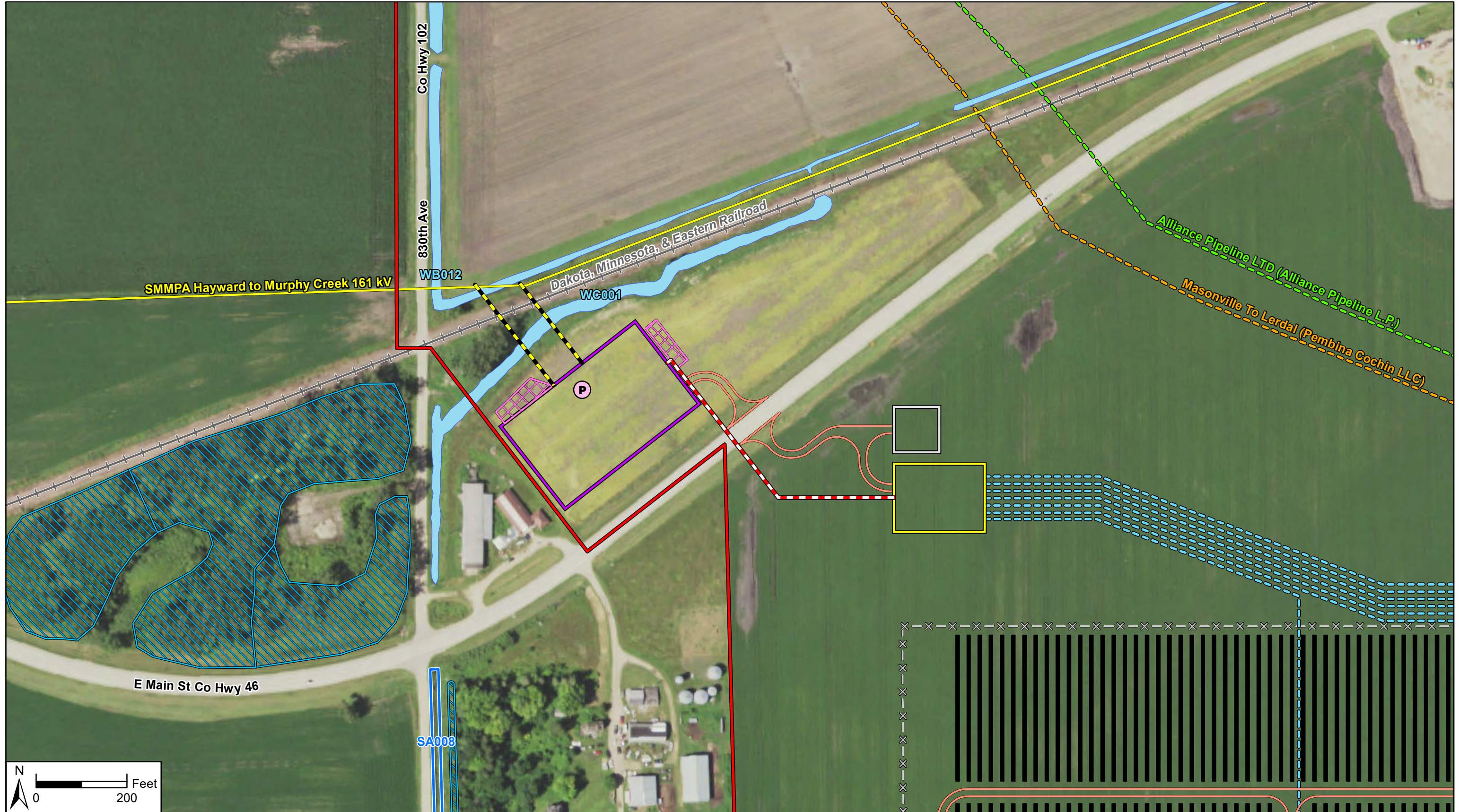
Freeborn County, Minnesota

**Land Rights & Preliminary Development Area**

Amended FIGURE 2 (October, 2021)

Map Document: N:\0026599\_00\GIS\SPR\_Figures\Hayward\_SPA\_Fig02\_LandRights&PreliminaryDevelopmentArea\_210923.mxd, 9/23/2021, 6:44:13 PM, radevib





Data Source(s): Westwood (2021); Minnesota NAIP Imagery (2019); Census Bureau (2019); Ventyx Velocity Suite, Ventyx Energy LLC, (2020); USGS NHD Dataset (2019); U.S. Fish and Wildlife Service (2020); Ducks Unlimited (2020); NPMS (2021). Existing pipeline routes are approximate.

**Legend**

- |                                     |  |                                       |                                      |                               |                                  |
|-------------------------------------|--|---------------------------------------|--------------------------------------|-------------------------------|----------------------------------|
| Project Area                        | Amended Proposed Project Access Road                 | Amended Proposed Project Substation   | Amended POI                          | Existing Transmission Line    | Field Delineated Wetland (2021)  |
| Proposed Project Solar Array Layout | Amended SMMPA Line Tap                               | Amended SMMPA Switchyard              | Amended Proposed Project Water Basin | Existing Natural Gas Pipeline | Field Delineated Waterway (2021) |
| Proposed Project Fence Boundary     | Amended Project Gen-Tie Line                         | Amended Proposed Project O&M Building | Named NHD Flowline                   | Existing Crude Oil Pipeline   |                                  |
|                                     | Amended Proposed Project Underground Collection Line | Proposed Project Inverter             | NWI Wetland                          | Railroad                      |                                  |

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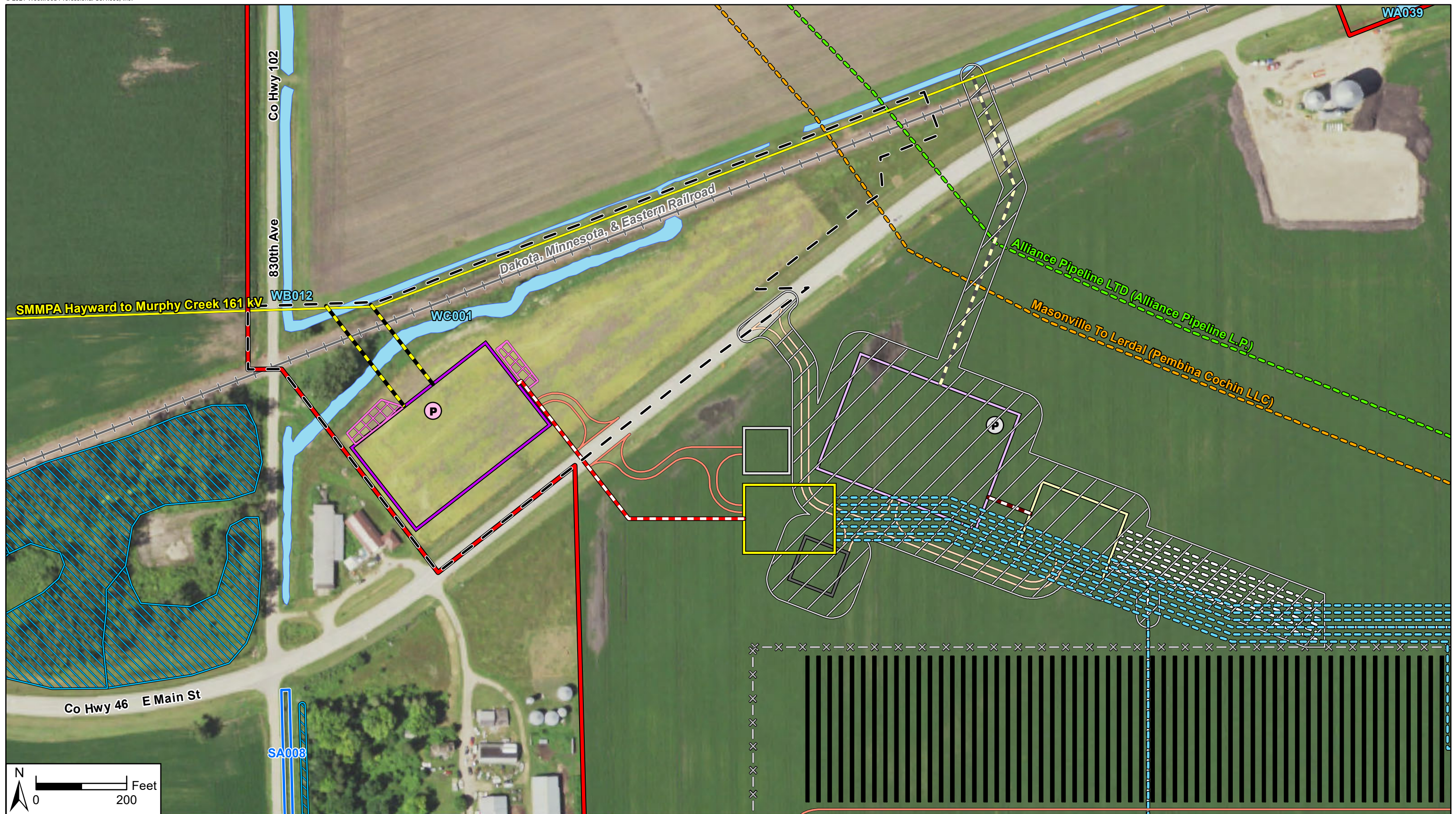
**Hayward Solar Project**  
Freeborn County, Minnesota

**Project Interconnection Facilities**

Amended FIGURE 3 (October, 2021)

Map Document: N:\0026599\_00\GIS\SPR\_Figures\Hayward\_SPA\_Fig03\_ProjectInterconnectionFacilities\_210923.mxd, 9/23/2021, 6:45:24 PM radevito





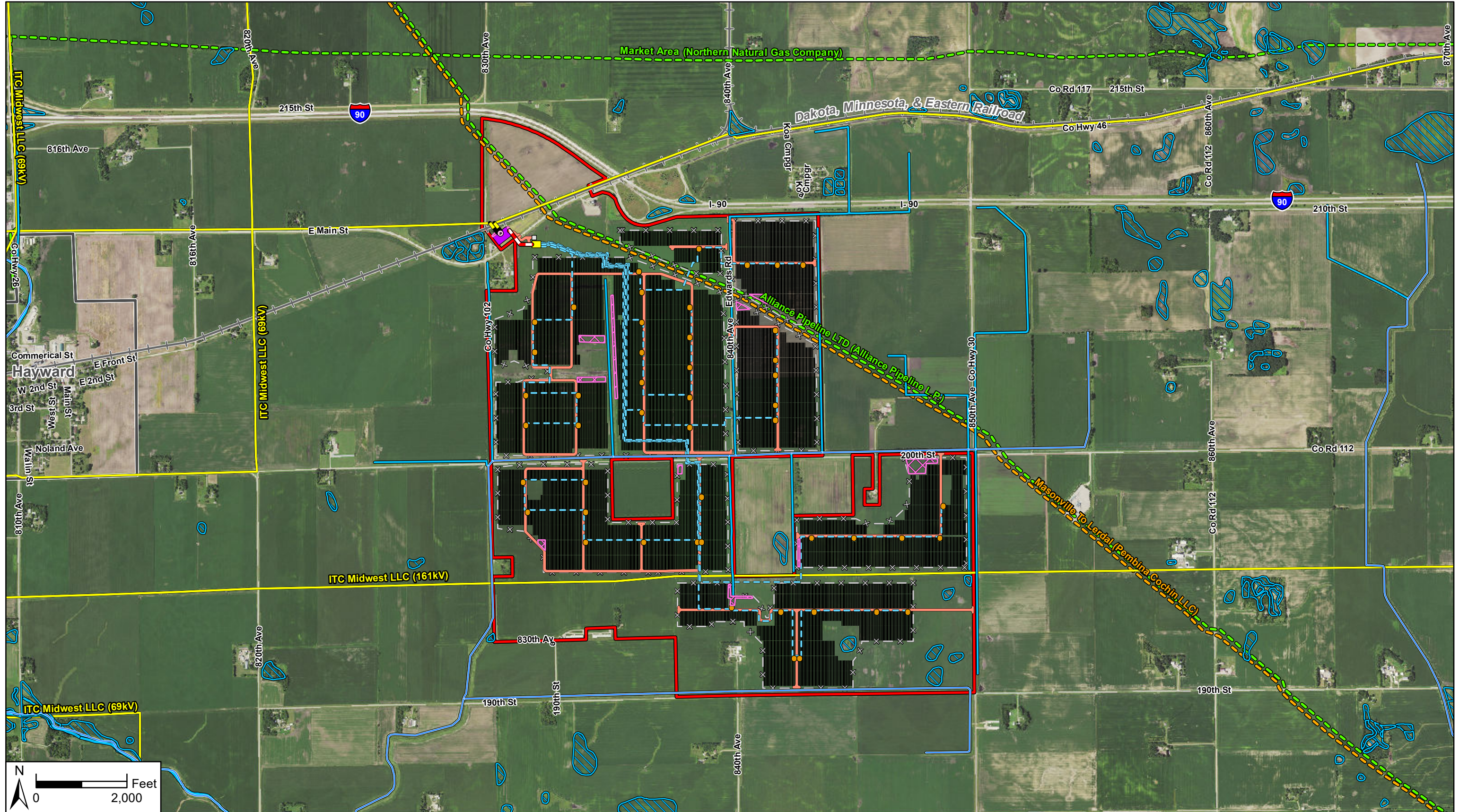
Data Source(s): Westwood (2021); Minnesota NAIIP Imagery (2019); Census Bureau (2019); Ventyx Velocity Suite, Ventyx Energy LLC, (2020); USGS NHD Dataset (2019); U.S. Fish and Wildlife Service (2020); Ducks Unlimited (2020); NPMS (2021). Existing pipeline routes are approximate.

Legend	
	Amended Project Area
	Amendment Area Added to Initial SPA Project Area
	Replaced Project Utilities Area
	Proposed Project Solar Array Layout
	Amended SMMPA Line Tap
	Amended Project Gen-Tie Line
	Amended Proposed Project Access Road
	Amended Proposed Project Underground Collection Line
	Initial SPA SMMPA Line Tap
	Initial SPA Project Gen-Tie Line
	Initial SPA Proposed Project Access Road
	Initial SPA Proposed Underground Collection Line
	Amended POI
	Amended Proposed Project Substation
	Amended SMMPA Switchyard
	Amended Proposed Project O&M Building
	Initial SPA POI
	Initial SPA Proposed Project Substation
	Initial SPA SMMPA Switchyard
	Initial SPA Proposed Project O&M Building
	Proposed Project Fence Boundary
	Amended Proposed Project Water Basin
	Named NHD Flowline
	NWI Wetland
	Existing Transmission Line
	Existing Natural Gas Pipeline
	Existing Crude Oil Pipeline
	Railroad
	Field Delineated Wetland (2021)
	Field Delineated Waterway (2021)

**Hayward Solar Project**  
Freeborn County, Minnesota  
Previous & Current Project Interconnection Facilities  
New FIGURE 3a (October, 2021)

Map Document: N:\0206599\_00\GIS\SPA\_Figures\Hayward\_SPA\_Fig3a\_Prevous&CurrentProjectInterconnectionFacilities\_210923.mxd 9/23/2021 6:49:53 PM radevib





Data Source(s): Westwood (2021); Minnesota NAIP Imagery (2019); Census Bureau (2019); Ventyx Velocity Suite, Ventyx Energy LLC (2020); USGS NHD Dataset (2019); U.S. Fish and Wildlife Service (2020); Ducks Unlimited (2020); NPMS (2021). Existing pipeline routes are approximate.



**Legend**

- Project Area
- Proposed Project Solar Array Layout
- Proposed Project Fence Boundary
- Municipal Boundary
- Amended Proposed Project Access Road
- Amended Proposed Project Collection Line
- Proposed Project Inverter
- Amended Proposed Project Substation
- Amended SMMPA Switchyard
- Amended Proposed Project O&M Building
- Amended POI
- Amended SMMPA Line Tap
- Amended Project Gen-Tie Line
- Amended Proposed Project Water Basin
- Named NHD Flowline
- NWI Wetland
- Existing Transmission Line
- Existing Natural Gas Pipeline
- Existing Crude Oil Pipeline
- Railroad

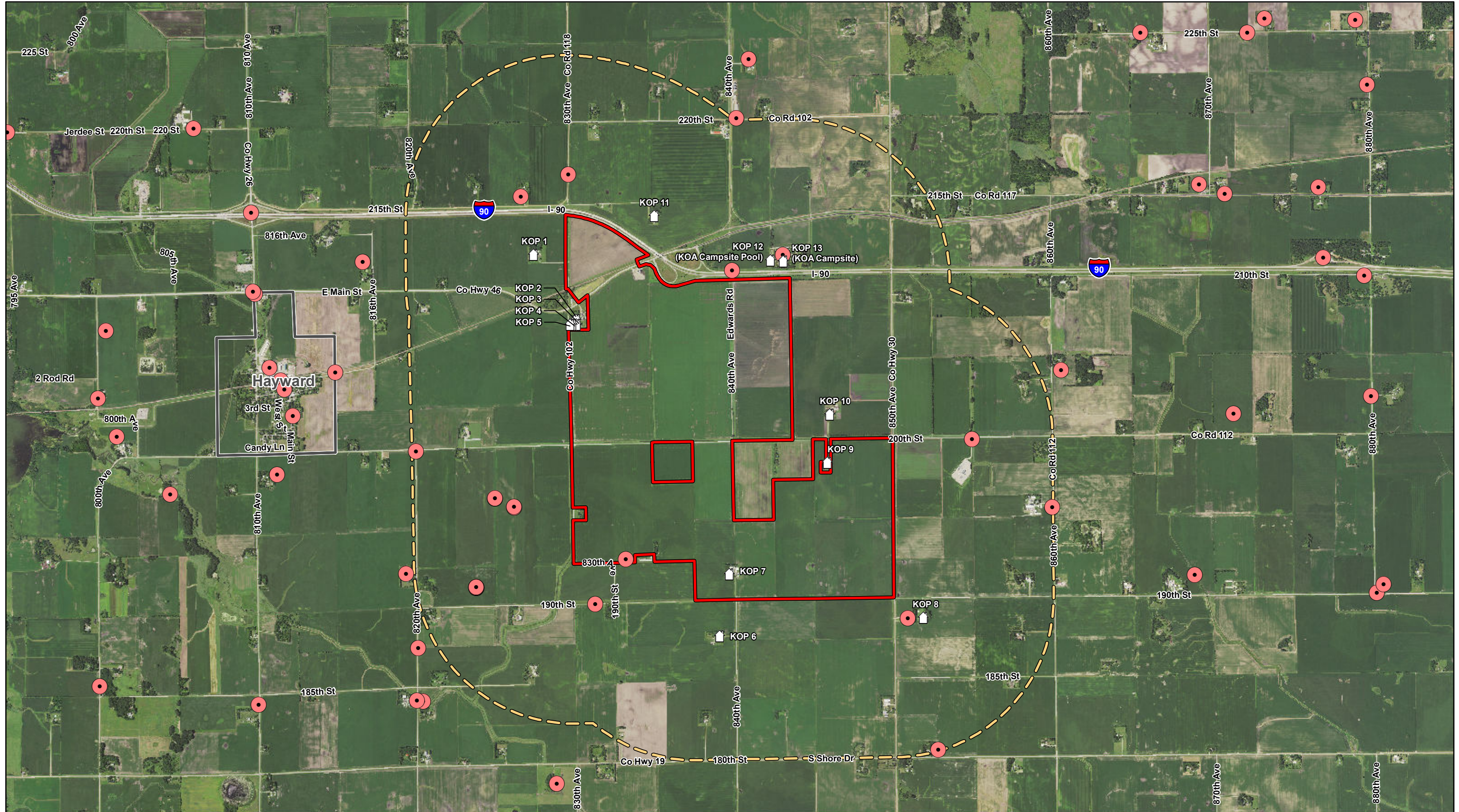
**Hayward Solar Project**  
Freeborn County, Minnesota

**Preliminary Facility Design**

Amended FIGURE 4 (October, 2021)

Map Document: N:\0206599\_00\GIS\SPR\_Figures\Hayward\_SPA\_Fig04\_PreliminaryFacilityDesign\_210923.mxd, 9/23/2021, 6:44:49 PM, radevib





Data Source(s): Westwood (2021); Minnesota NAIP Imagery (2019); Census Bureau (2019); Minnesota Pollution Control Agency (2021).

**Legend**

- Project Area
- 1-Mile Project Area Buffer
- MPCA Site
- Nearby Residence or Campground Site
- Municipal Boundary



**Hayward Solar Project**  
Freeborn County, Minnesota

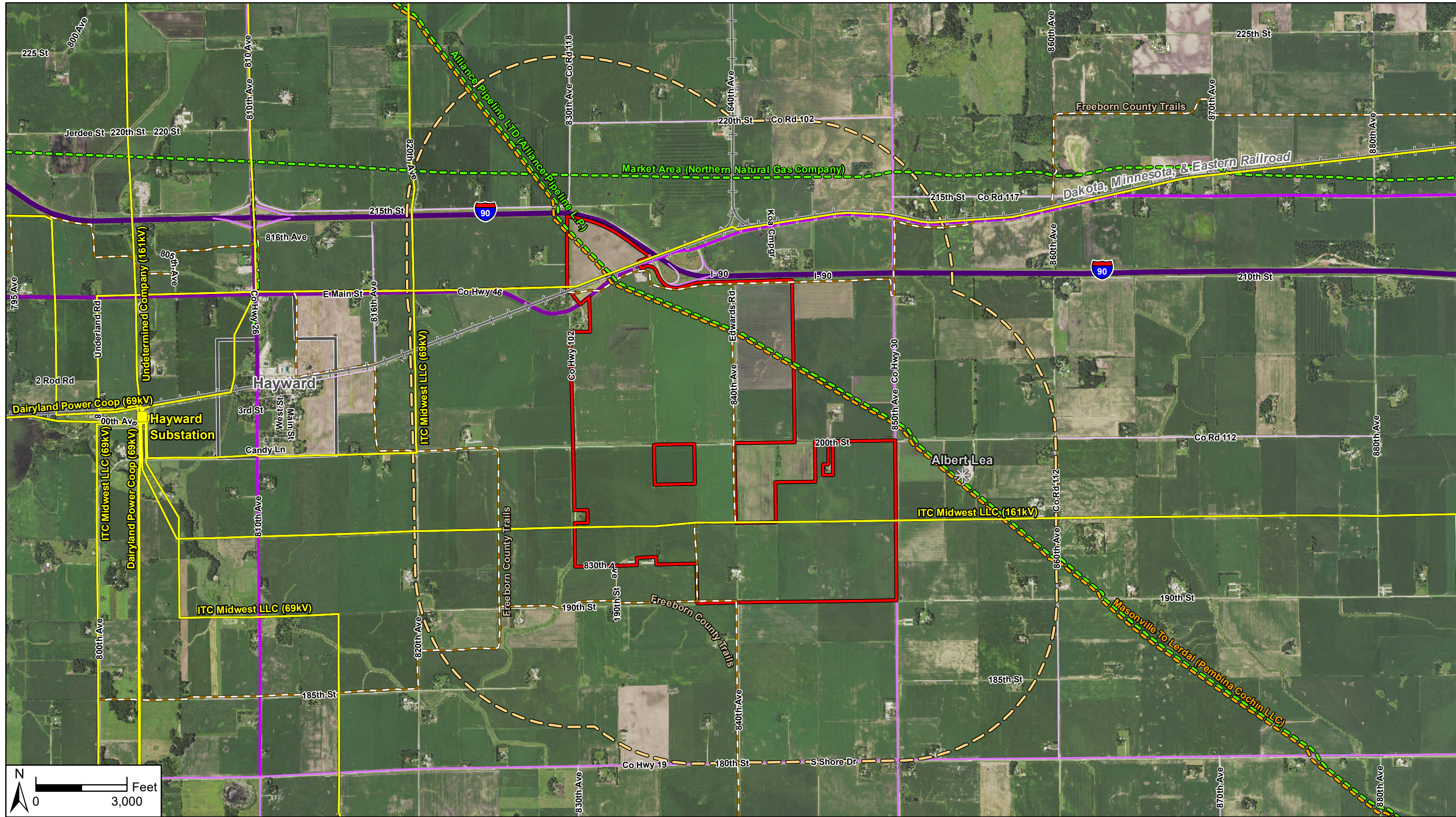
**MPCA Sites in Project Vicinity**

Amended FIGURE 5 (October, 2021)

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Data Source(s): Westwood (2021); Minnesota NAIP Imagery (2019); Census Bureau (2019); Ventyx Velocity Suite, Ventyx Energy LLC (2021); NIMS (2020); MNDOT (2021); NPMS (2021). Existing pipeline routes are approximate.

**Legend**

- |                            |                                |                               |                  |             |                |
|----------------------------|--------------------------------|-------------------------------|------------------|-------------|----------------|
| Project Area               | Existing Substation            | Existing Transmission Line    | Railroad         | 15 - 205    | 1,501 - 2,800  |
| 1-Mile Project Area Buffer | Airport                        | Existing Natural Gas Pipeline | Snowmobile Trail | 206 - 810   | 2,801 - 12,700 |
| Municipal Boundary         | Natural Gas Compressor Station | Existing Crude Oil Pipeline   |                  | 811 - 1,500 |                |

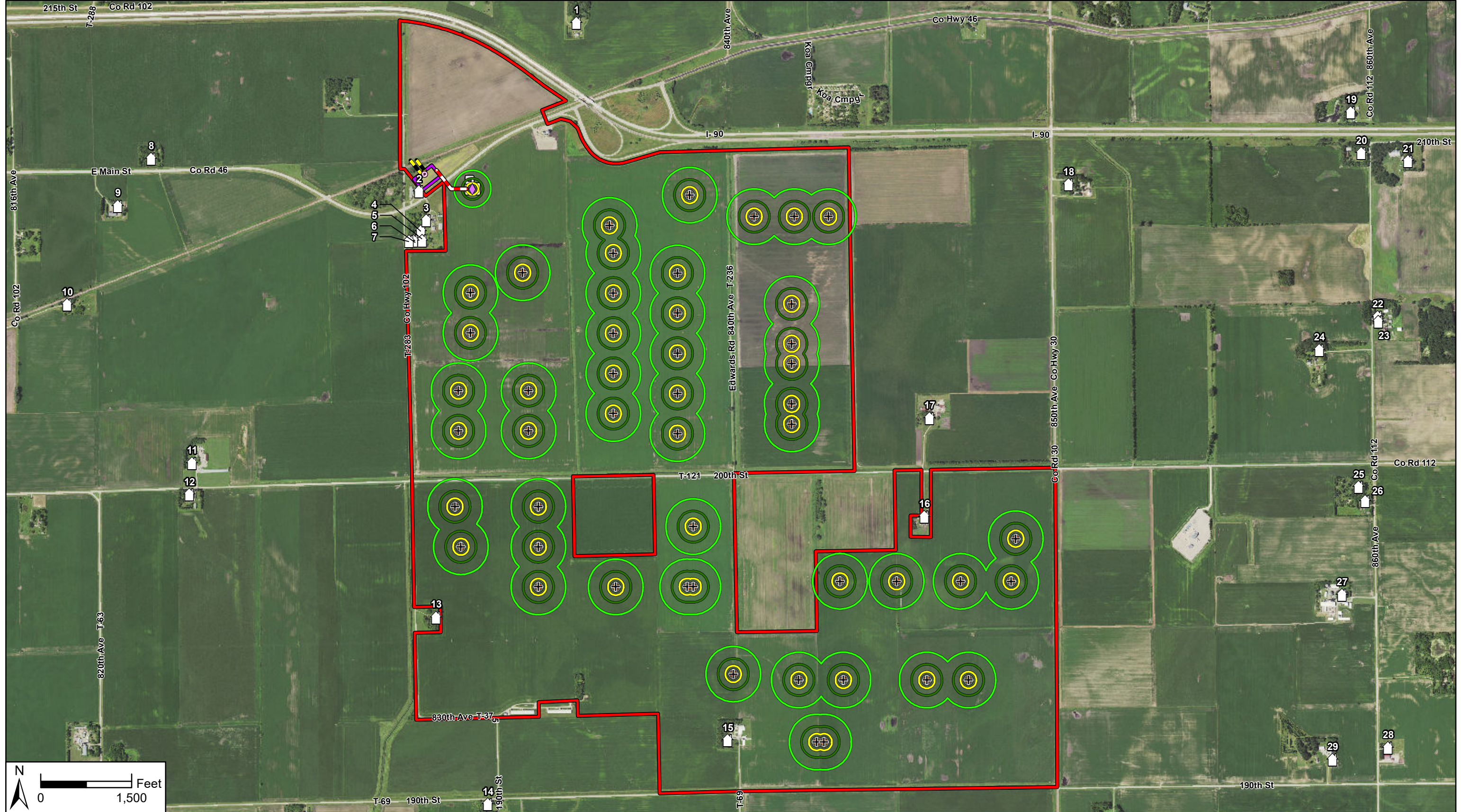
**Hayward Solar Project**

Freeborn County, Minnesota

**Existing Infrastructure & Traffic Summary**

Amended FIGURE 6 (October, 2021)





Data Source(s): Westwood (2021); Minnesota NAIP Imagery (2019); Census Bureau (2019).

**Legend**

- Project Area
- Amended Proposed Project Substation
- Amended SMMPA Switchyard
- Amended Proposed Project O&M Building

- ⊙ Amended POI
- ⚡ Amended SMMPA Line Tap
- +— Amended Project Gen-Tie Line

- + Proposed Project Inverter Skid
- ◆ Amended Proposed Project Substation Transformer
- 🏠 Residence

**Decibel Levels**

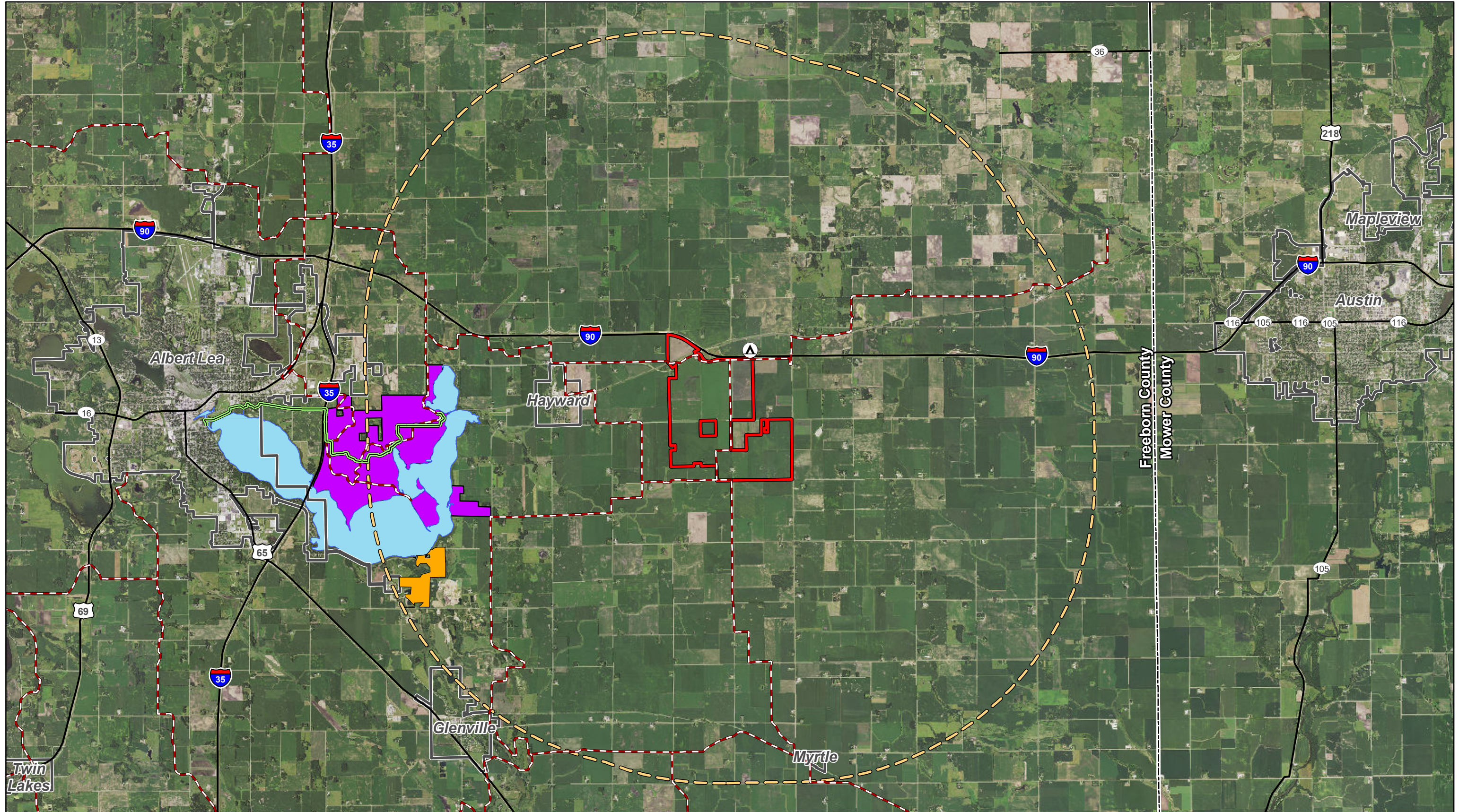
- 90dBA
- 55dBA
- 40dBA
- 75dBA
- 50dBA
- 35dBA
- 60dBA
- 45dBA

**Hayward Solar Project**  
Freeborn County, Minnesota

**Noise Modeling Results**

Amended FIGURE 7 (October, 2021)





Data Source(s): Westwood (2021); Minnesota NAIP Imagery (2019); Census Bureau (2019); Conservation Biology Institute PAD-US (2016); MNDNR (Various Dates); Freeborn County, MN (2020).

**Legend**

- Project Area
- 5-Mile Project Area Buffer
- Municipal Boundary
- County Boundary
- Albert Lea/Austin KOA Campground
- Juglans Woods AMA
- Myre-Big Island State Park
- Albert Lea Lake
- Blazing Star State Trail
- Freeborn County Snowmobile Trail
- Major Road



**Hayward Solar Project**  
Freeborn County, Minnesota

Recreation

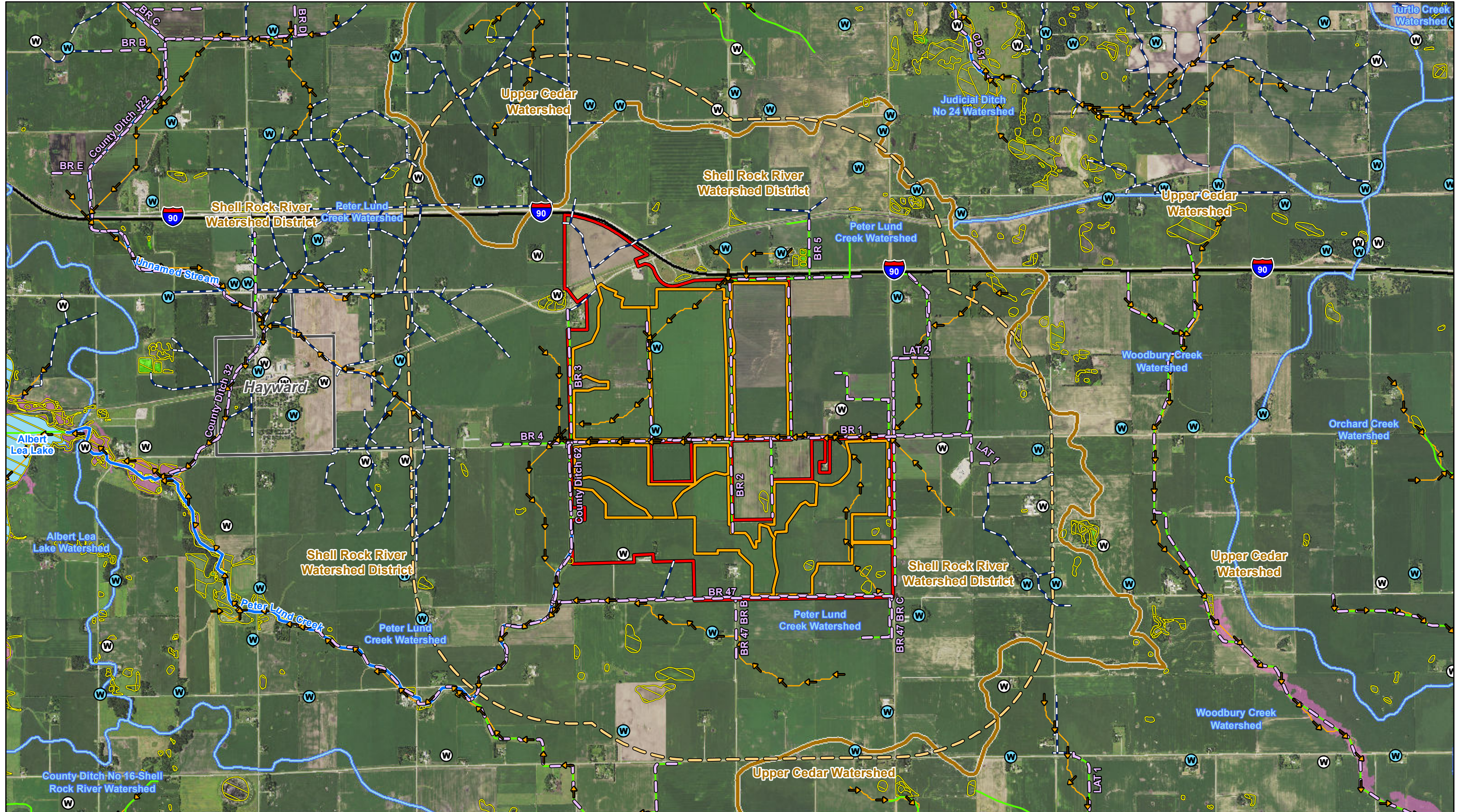
Amended FIGURE 8 (October, 2021)

**Westwood**

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Map Document: N:\0026599\_00\GIS\SPA\_Figures\Hayward\_SPA\_Fig08\_Recreation\_210921.mxd 9/21/2021 4:13:01 PM radevib

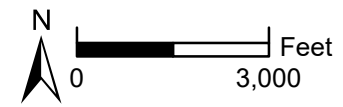




Data Source(s): Westwood (2021); ESRI WMS World Imagery Basemap (Accessed 2020); Census Bureau (2019); U.S. Department of Agriculture, Natural Resources Conservation Service (2020); Minnesota Geological Survey & Department of Health County Well Index (2018).

**Legend**

- |                            |                          |                   |                 |                                     |
|----------------------------|--------------------------|-------------------|-----------------|-------------------------------------|
| Project Area               | Flow Direction Line      | Drainage Ditch    | PWI Watercourse | Located Well                        |
| 1-Mile Project Area Buffer | Hydro Drainage Area      | Public Drain Tile | PWI Basin       | Unlocated Well (Not Field Verified) |
| Major Road                 | Major Watershed Boundary | NWI Wetland       | NHD Flowline    |                                     |
| Municipal Boundary         | Minor Watershed Boundary | FEMA Floodplain   | NHD Waterbody   |                                     |



**Hayward Solar Project**  
Freeborn County, Minnesota

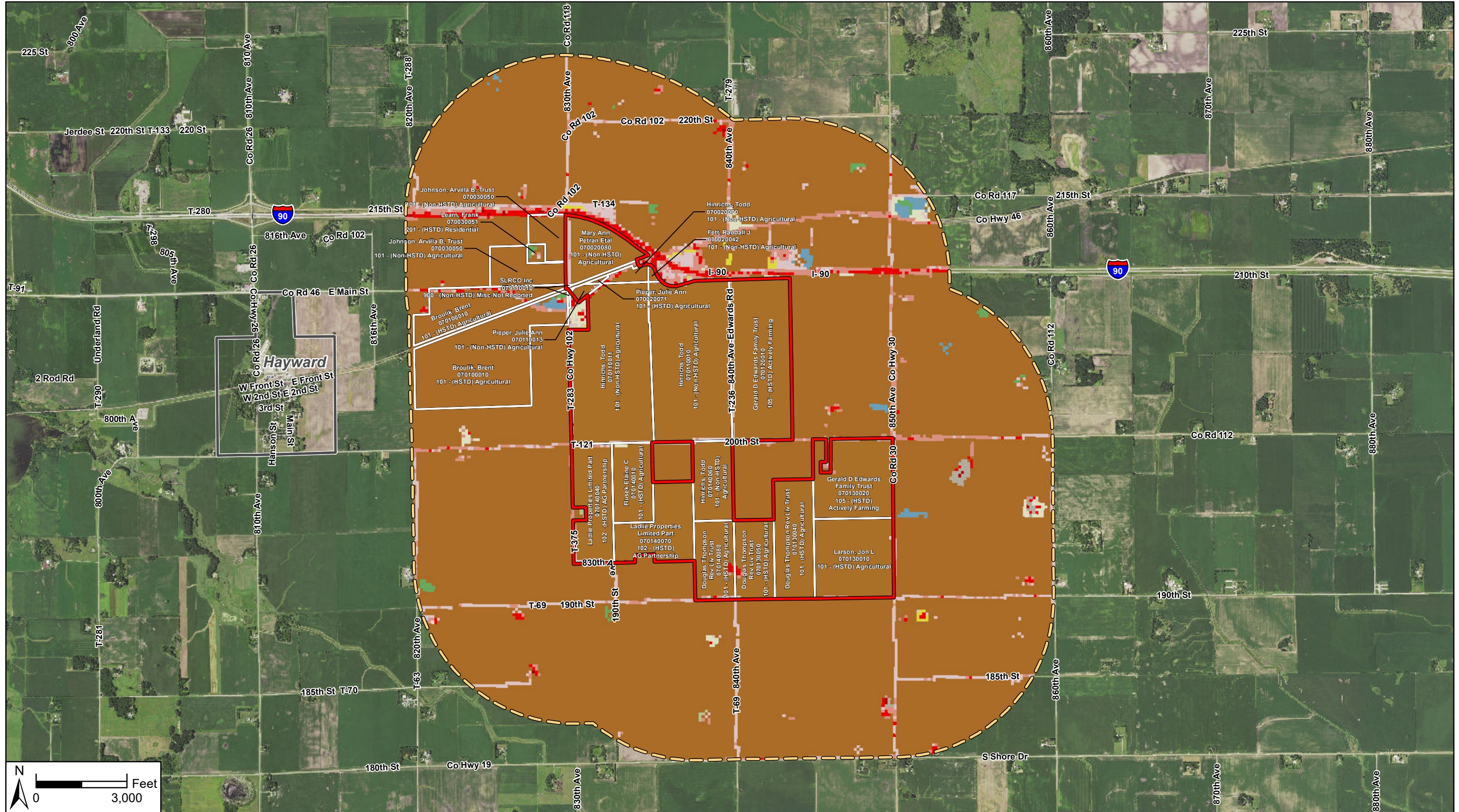
**Water Resources & Wells**

Amended FIGURE 9 (October 2021)

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Data Source(s): Westwood (2021); Minnesota NAIP Imagery (2019); Census Bureau (2019); U.S. Geological Survey (2016); Freeborn County, MN (2021).

**Legend**

- Project Area
- Project Area Parcel
- 1-Mile Project Area Buffer

**NLCD Land Cover Type (Percentage of Project Area)**

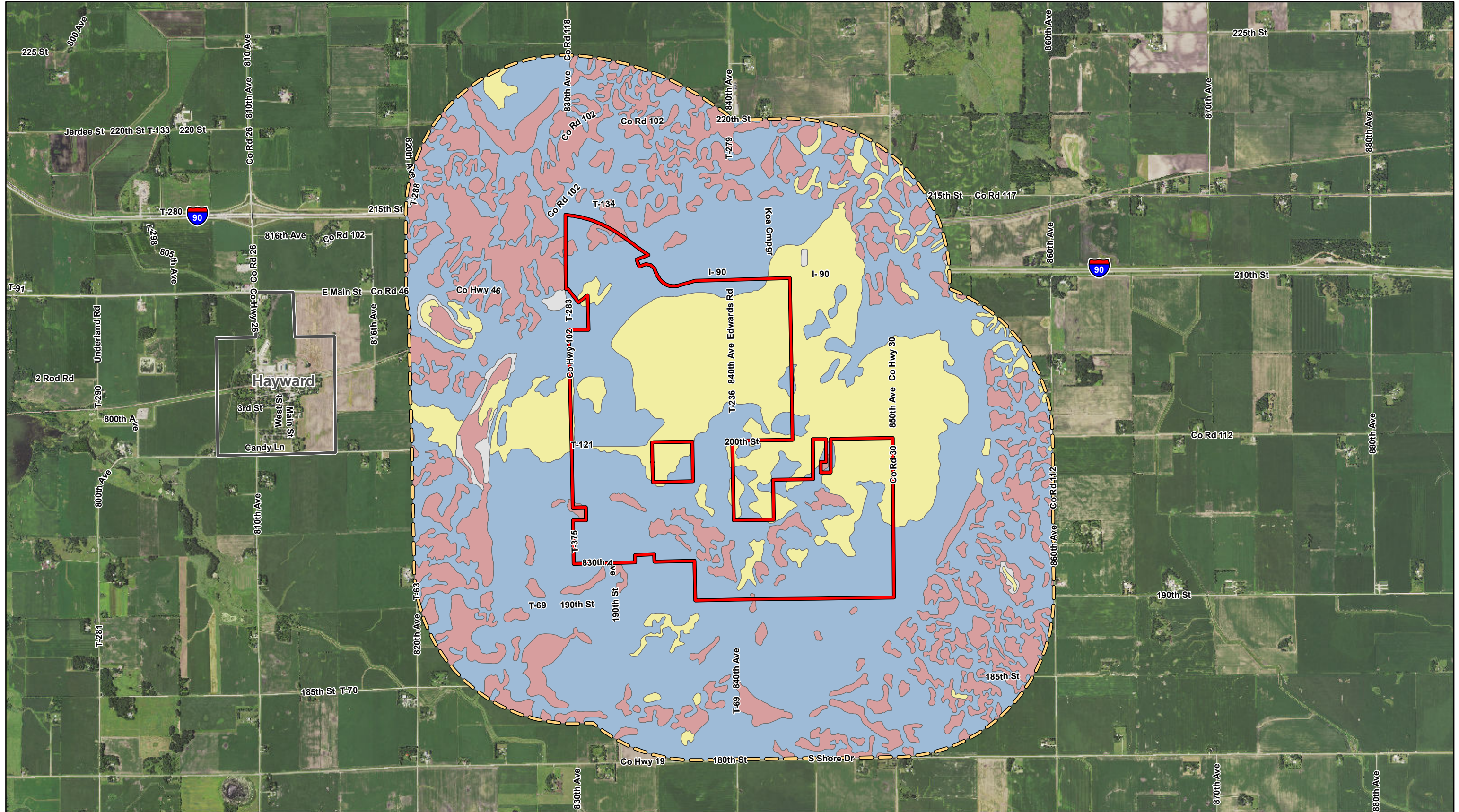
- |  |  |   |
|--|--|---|
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #8B4513; border: 1px solid black; margin-right: 5px;"></span> Cultivated Crops (96.55%)           | <span style="display: inline-block; width: 15px; height: 10px; background-color: #D3D3D3; border: 1px solid black; margin-right: 5px;"></span> Developed, Open Space (1.85%) | <span style="display: inline-block; width: 15px; height: 10px; background-color: #A9A9A9; border: 1px solid black; margin-right: 5px;"></span> Barren Land (0%)                 |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #DC143C; border: 1px solid black; margin-right: 5px;"></span> Developed, High Intensity (0.007%)  | <span style="display: inline-block; width: 15px; height: 10px; background-color: #FFFF00; border: 1px solid black; margin-right: 5px;"></span> Hay/Pasture (0.02%)           | <span style="display: inline-block; width: 15px; height: 10px; background-color: #3CB371; border: 1px solid black; margin-right: 5px;"></span> Deciduous Forest (0%)            |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #F08080; border: 1px solid black; margin-right: 5px;"></span> Developed, Low Intensity (1.13%)    | <span style="display: inline-block; width: 15px; height: 10px; background-color: #90EE90; border: 1px solid black; margin-right: 5px;"></span> Herbaceous (0.11%)            | <span style="display: inline-block; width: 15px; height: 10px; background-color: #4682B4; border: 1px solid black; margin-right: 5px;"></span> Emergent Herbaceous Wetland (0%) |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #FF0000; border: 1px solid black; margin-right: 5px;"></span> Developed, Medium Intensity (0.33%) | <span style="display: inline-block; width: 15px; height: 10px; background-color: #90EE90; border: 1px solid black; margin-right: 5px;"></span> Mixed Forest (0.003%)         |   |

**Hayward Solar Project**  
Freeborn County, Minnesota

NLCD Land Cover & Zoning



Amended FIGURE 10 (October, 2021)









Data Source(s): Westwood (2021); Minnesota NAIP Imagery (2019); Census Bureau (2019); U.S. Department of Agriculture, Natural Resources Conservation Service (2020).

**Legend**

-  Project Area
-  1-Mile Project Area Buffer
-  Municipal Boundary

**Prime Farmland Classifications (Acreage & Percentage of Project Area)**

-  All areas are prime farmland - 107.68 Acres (5.46%)
-  Farmland of statewide importance - 756.42 Acres (38.36%)
-  Prime farmland if drained - 1,107.65 Acres (56.18%)
-  Not prime farmland - 0 Acres (0%)



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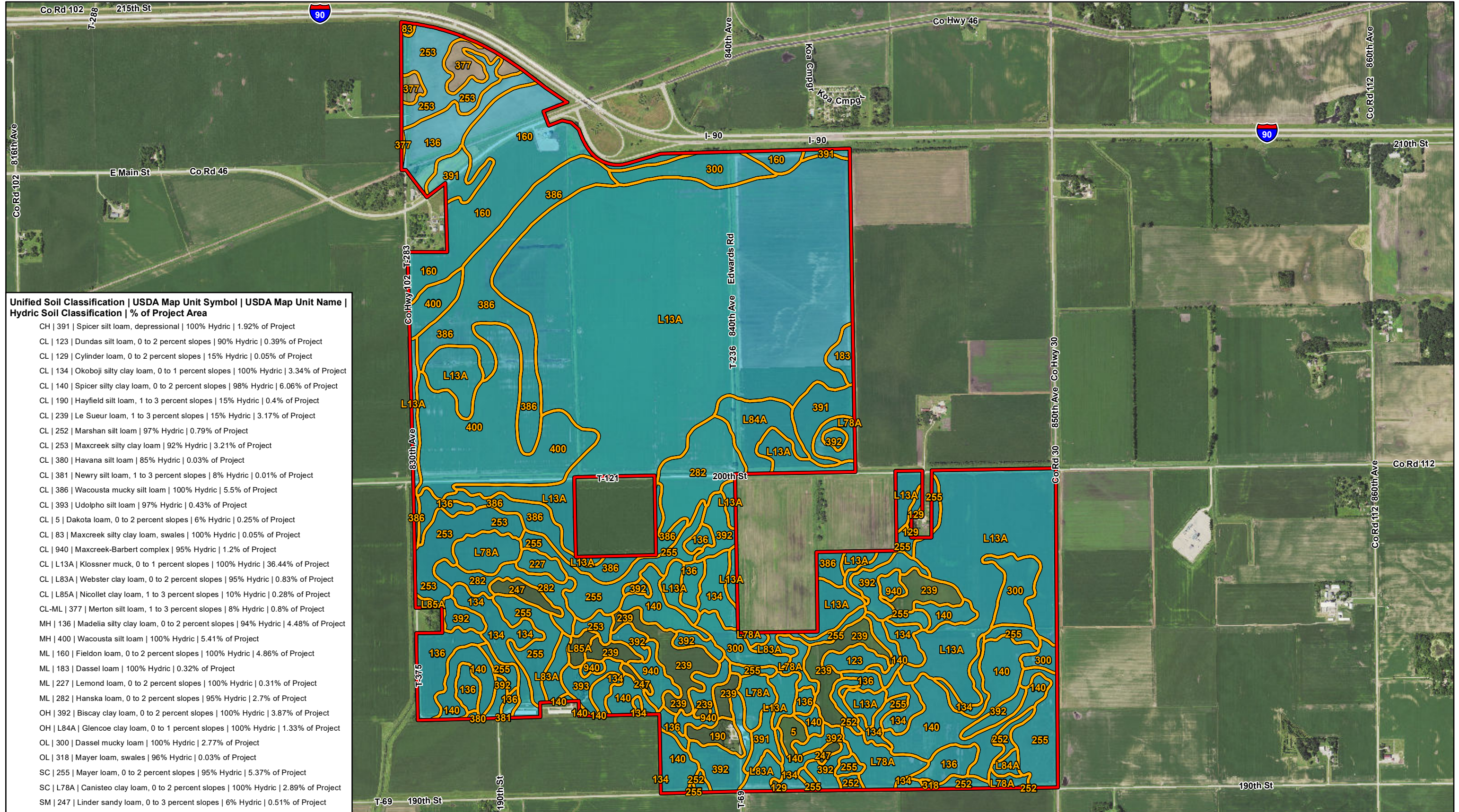
**Hayward Solar Project**

Freeborn County, Minnesota

**Prime Farmland & Farmland Classifications**

Amended FIGURE 11 (October, 2021)





**Unified Soil Classification | USDA Map Unit Symbol | USDA Map Unit Name | Hydric Soil Classification | % of Project Area**

CH   391   Spicer silt loam, depressional   100% Hydric   1.92% of Project
CL   123   Dundas silt loam, 0 to 2 percent slopes   90% Hydric   0.39% of Project
CL   129   Cylinder loam, 0 to 2 percent slopes   15% Hydric   0.05% of Project
CL   134   Okoboji silty clay loam, 0 to 1 percent slopes   100% Hydric   3.34% of Project
CL   140   Spicer silty clay loam, 0 to 2 percent slopes   98% Hydric   6.06% of Project
CL   190   Hayfield silt loam, 1 to 3 percent slopes   15% Hydric   0.4% of Project
CL   239   Le Sueur loam, 1 to 3 percent slopes   15% Hydric   3.17% of Project
CL   252   Marshan silt loam   97% Hydric   0.79% of Project
CL   253   Maxcreek silty clay loam   92% Hydric   3.21% of Project
CL   380   Havana silt loam   85% Hydric   0.03% of Project
CL   381   Newry silt loam, 1 to 3 percent slopes   8% Hydric   0.01% of Project
CL   386   Wacousta mucky silt loam   100% Hydric   5.5% of Project
CL   393   Udolpho silt loam   97% Hydric   0.43% of Project
CL   5   Dakota loam, 0 to 2 percent slopes   6% Hydric   0.25% of Project
CL   83   Maxcreek silty clay loam, swales   100% Hydric   0.05% of Project
CL   940   Maxcreek-Barbert complex   95% Hydric   1.2% of Project
CL   L13A   Klossner muck, 0 to 1 percent slopes   100% Hydric   36.44% of Project
CL   L83A   Webster clay loam, 0 to 2 percent slopes   95% Hydric   0.83% of Project
CL   L85A   Nicollet clay loam, 1 to 3 percent slopes   10% Hydric   0.28% of Project
CL-ML   377   Merton silt loam, 1 to 3 percent slopes   8% Hydric   0.8% of Project
MH   136   Madelia silty clay loam, 0 to 2 percent slopes   94% Hydric   4.48% of Project
MH   400   Wacousta silt loam   100% Hydric   5.41% of Project
ML   160   Fieldon loam, 0 to 2 percent slopes   100% Hydric   4.86% of Project
ML   183   Dassel loam   100% Hydric   0.32% of Project
ML   227   Lemond loam, 0 to 2 percent slopes   100% Hydric   0.31% of Project
ML   282   Hanska loam, 0 to 2 percent slopes   95% Hydric   2.7% of Project
OH   392   Biscay clay loam, 0 to 2 percent slopes   100% Hydric   3.87% of Project
OH   L84A   Glencoe clay loam, 0 to 1 percent slopes   100% Hydric   1.33% of Project
OL   300   Dassel mucky loam   100% Hydric   2.77% of Project
OL   318   Mayer loam, swales   96% Hydric   0.03% of Project
SC   255   Mayer loam, 0 to 2 percent slopes   95% Hydric   5.37% of Project
SC   L78A   Canisteo clay loam, 0 to 2 percent slopes   100% Hydric   2.89% of Project
SM   247   Linder sandy loam, 0 to 3 percent slopes   6% Hydric   0.51% of Project

Data Source(s): Westwood (2021); Minnesota NAIP Imagery (2019); Census Bureau (2019); U.S. Department of Agriculture, Natural Resources Conservation Service (2021).

**Legend**

- Project Area
- Soil Unit Boundary
- All Hydric/Predominantly Hydric Soil



**Hayward Solar Project**  
Freeborn County, Minnesota

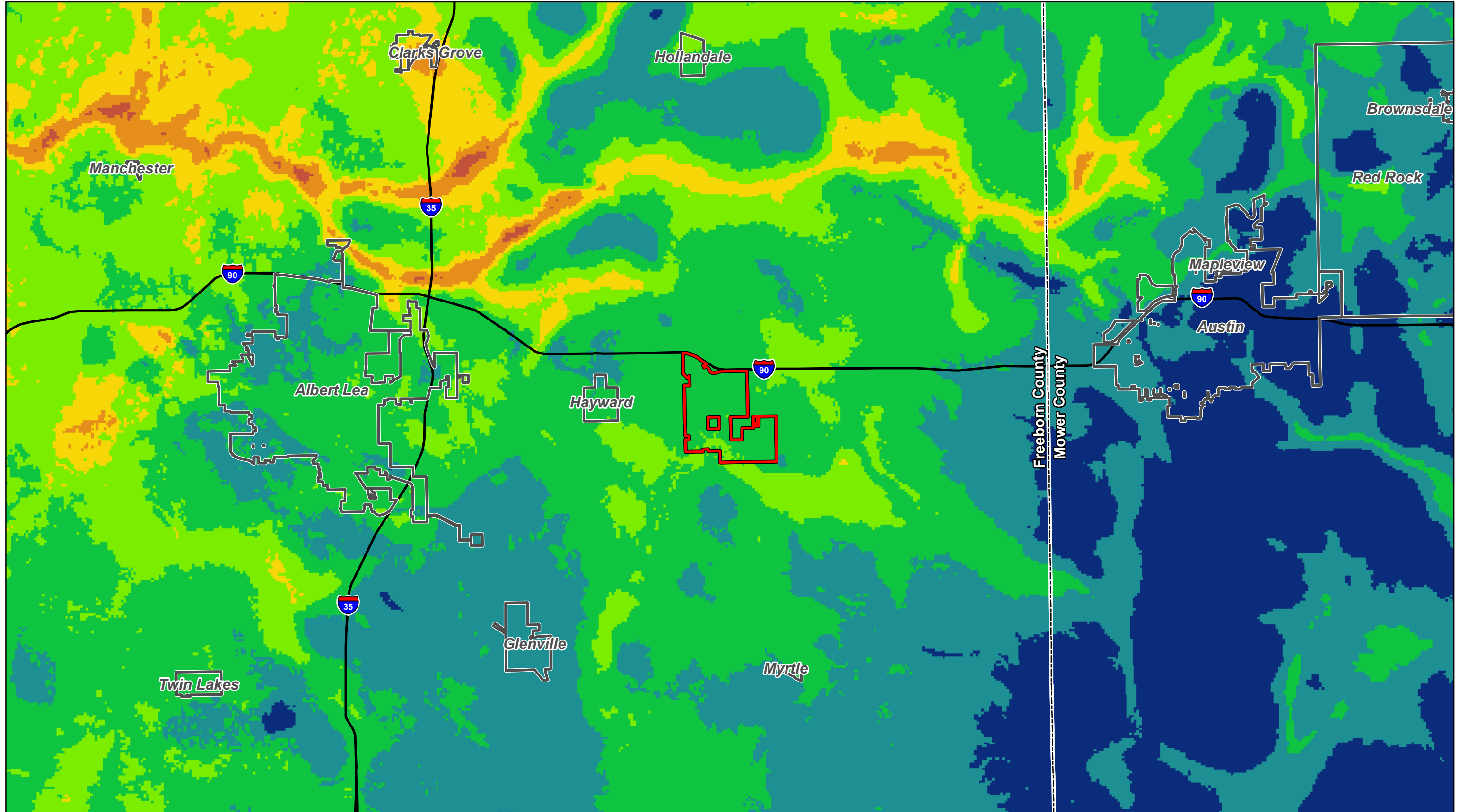
Hydric Soils

Amended FIGURE 12 (October, 2021)

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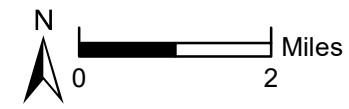
Data Source(s): Westwood (2021); Census Bureau (2019); U.S. Geological Survey National Geological and Geophysical Data Preservation Program (2020).

**Legend**

- Project Area
- Municipal Boundary
- County Boundary
- Major Highway

**Depth to Bedrock in Feet**

	0 - 50		100 - 150		200 - 250
	50 - 100		150 - 200		250 - 300
	300 - 350				



**Hayward Solar Project**

Freeborn County, Minnesota

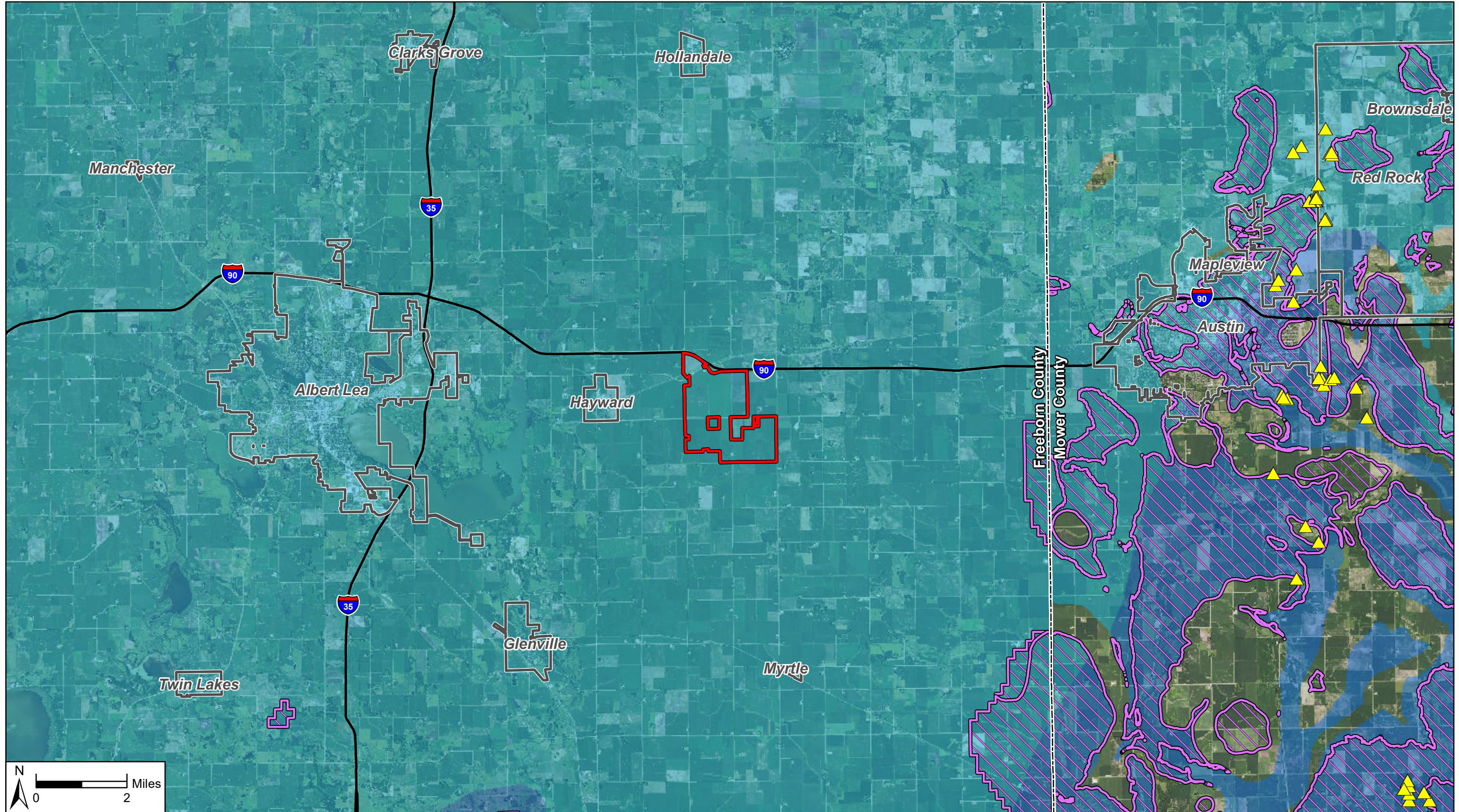
Depth To Bedrock

Amended FIGURE 13 (October, 2021)

**Westwood**

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Data Source(s): Westwood (2021); Minnesota NAIP Imagery (2019); Census Bureau (2019); U.S. Minnesota Geological Survey, Freeborn County; University of Minnesota - Twin Cities, MN DNR (2020).

**Legend**

- Project Area
- Municipal Boundary
- County Boundary
- Major Highway
- ▲ Karst Feature
- Carbonate Minnesota Region Prone to Surface Karst Feature Development

- Carbonate rocks buried under >50 ft of glacially derived insoluble sediments in a humid climate
- Carbonate rocks buried under ≤50 ft of glacially derived insoluble sediments in a humid climate

**Hayward Solar Project**

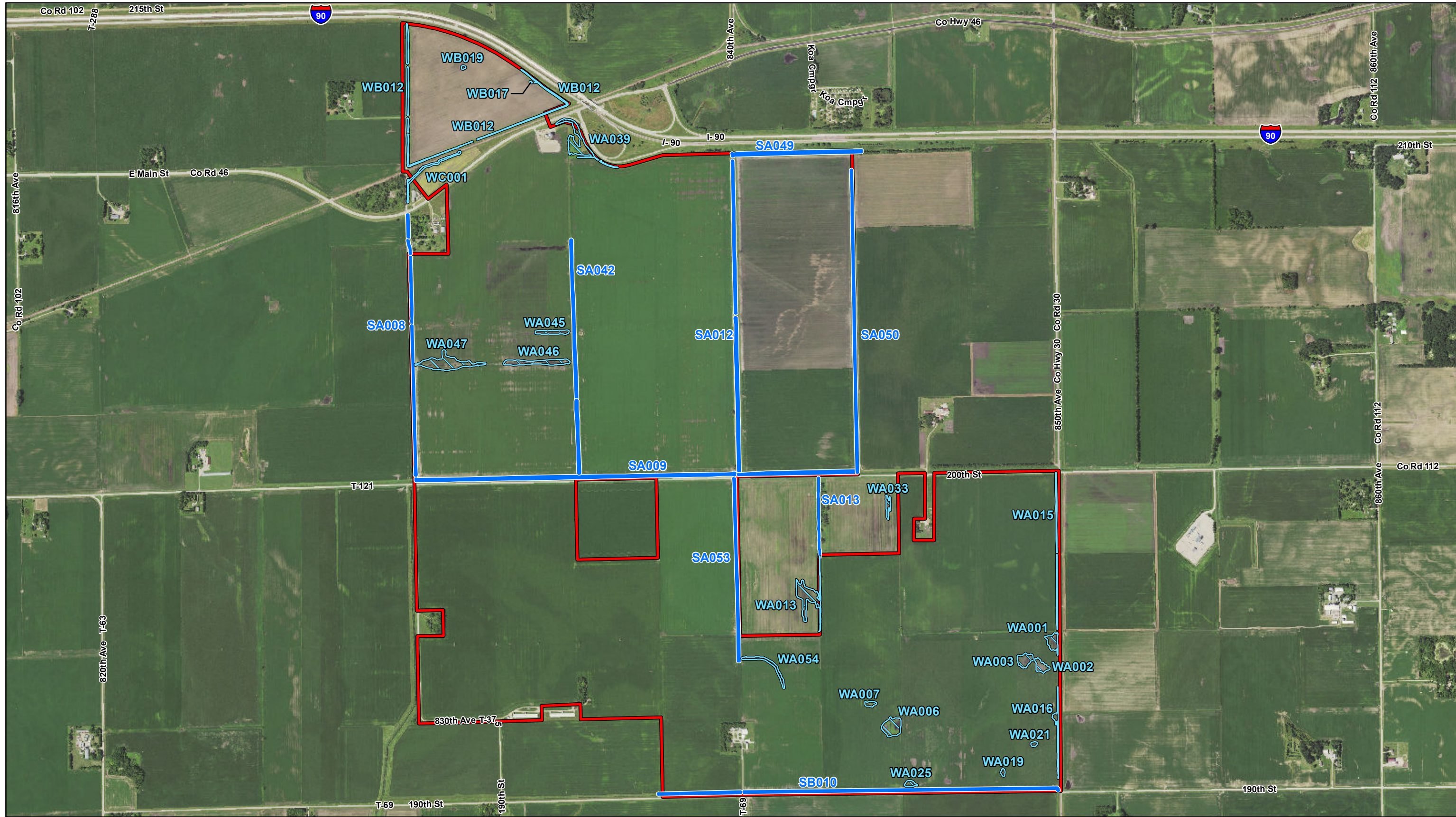
Freeborn County, Minnesota

**Karst Features**

Amended FIGURE 14 (October, 2021)

Map Document: N:\0026599\_00\GIS\SPR\_Figures\Hayward\_SPA\_Fig14\_KarstFeatures\_210921.mxd 9/21/2021 4:15:52 PM radevito





Data Source(s): Westwood (2021); Minnesota NAIP Imagery (2019); Census Bureau (2019); Tetratich (2020).

**Legend**

Project Area

Field Delineated Wetland (2021)

Field Delineated Waterway (2021)



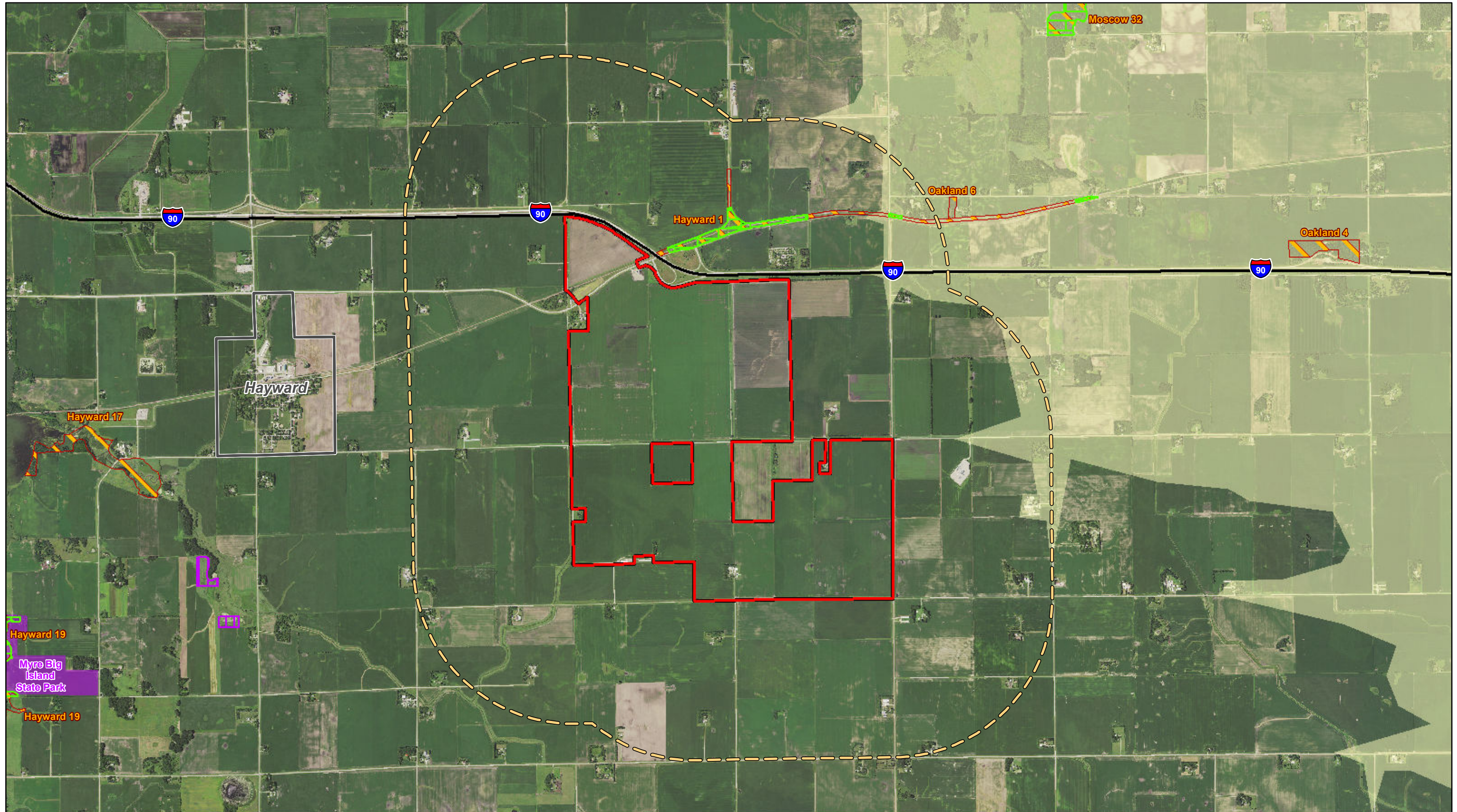
**Hayward Solar Project**

Freeborn County, Minnesota

**Delineated Wetlands & Waterways**

Amended FIGURE 15 (October, 2021)





Data Source(s): Westwood (2021); Minnesota NAIP Imagery (2019); Census Bureau (2019); MNDNR (Various Dates); The Minnesota County Biological Survey, MNDNR, Division of Ecological Resources (2015); NCED and Partners (2016); U.S. Fish and Wildlife Service (Various Dates); U.S. Fish and Wildlife Service (2018); MNDNR (2020); Conservation Biology Institute PAD-US (2016).

**Legend**

- Project Area
- 1-Mile Project Area Buffer
- Municipal Boundary
- Major Road
- Native Plant Community
- MBS Site of Biodiversity Significance
- National Conservation Easement
- Minnesota Wildlife Management Area
- State Park Area
- Rusty Patched Bumble Bee High Potential Zone
- Rusty Patched Bumble Bee Low Potential Zone
- National Conservation Easement
- State Park Area



**Hayward Solar Project**  
Freeborn County, Minnesota

Rare & Unique Natural Resources

Amended FIGURE 16 (October, 2021)