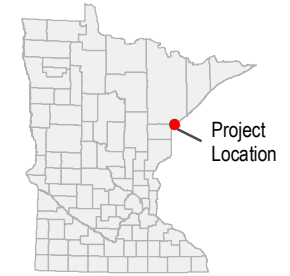
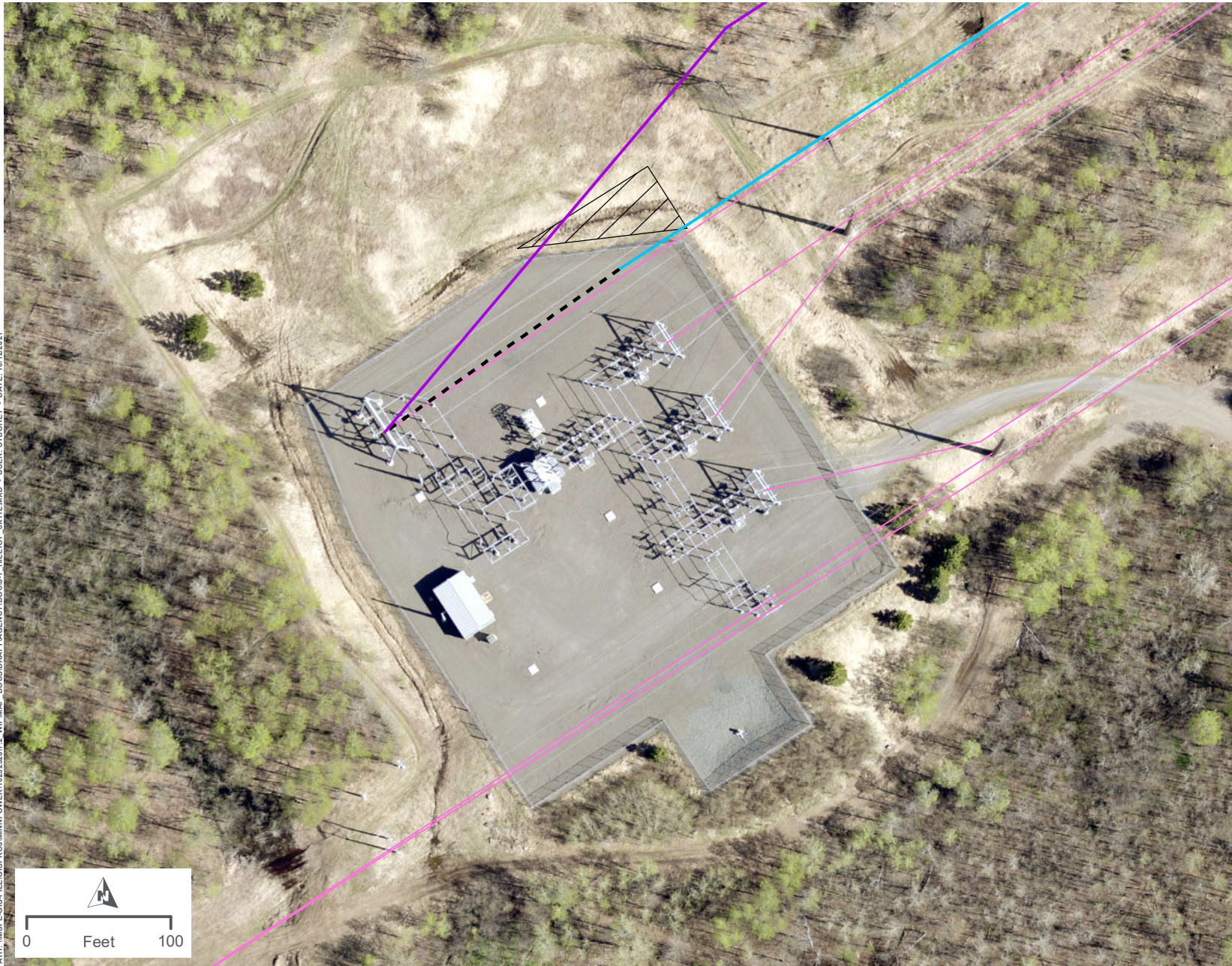


## **APPENDIX J**






### **DETAILED ROUTE MAPS AND FIGURES SHOWING THE RIDGEVIEW SUBSTATION AND HILLTOP SUBSTATION EXPANSIONS**



PATH: \\MSPEC\SIS-FILES\GIS\PROJECTS\MINNPOWER\1025232017.2\_WIP\MAP\_DCS\DRIFT\AGENCY\DOC\J-1\_HILLTOP\_03141.WXD - USER: STUOHEY - DATE: 10/12/2021



#### LEGEND

-  Substation Expansion Area
-  Project 115 kV Transmission Line (Single Circuit)
-  Project 230 kV Transmission Line (Single Circuit)
-  Removed Transmission Line (Realigned)
-  Existing Transmission Line

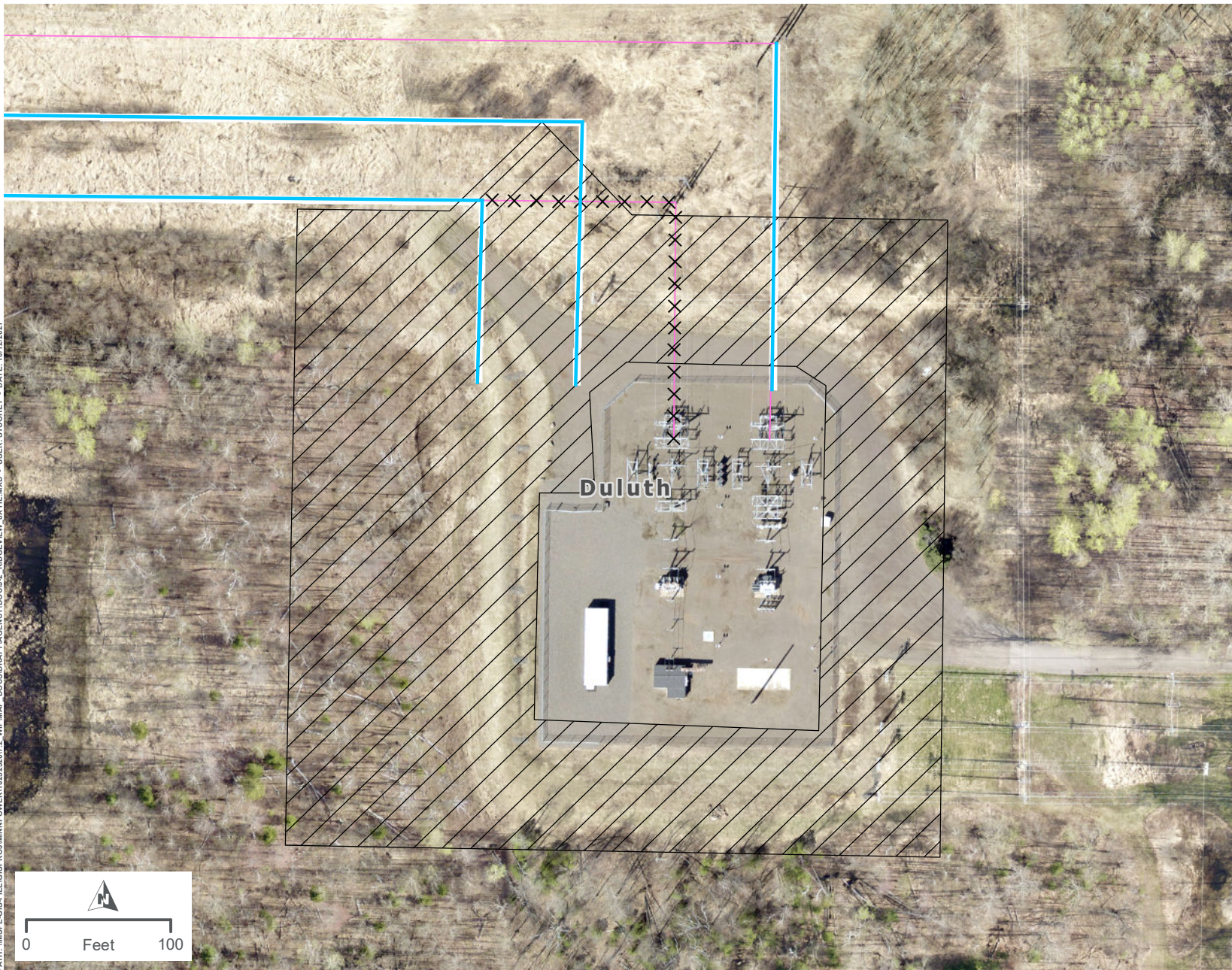


## HILLTOP SUBSTATION EXPANSION DULUTH LOOP RELIABILITY PROJECT





APPENDIX J-1



PATH: \\MSPEC\GIS\FILES\PROJECTS\MINNPOWER\102522017.2\_VIP\MAP DOCS\DRAFT\AGENCY\1000\J2 RIDGEVIEW AX14L.WXD - USER: STUDIOEY - DATE: 10/12/2021



#### LEGEND

-  Substation Expansion Area
-  Project 115 kV Transmission Line (Single Circuit)
-  Removed Transmission Line (Realigned)
-  Existing Transmission Line

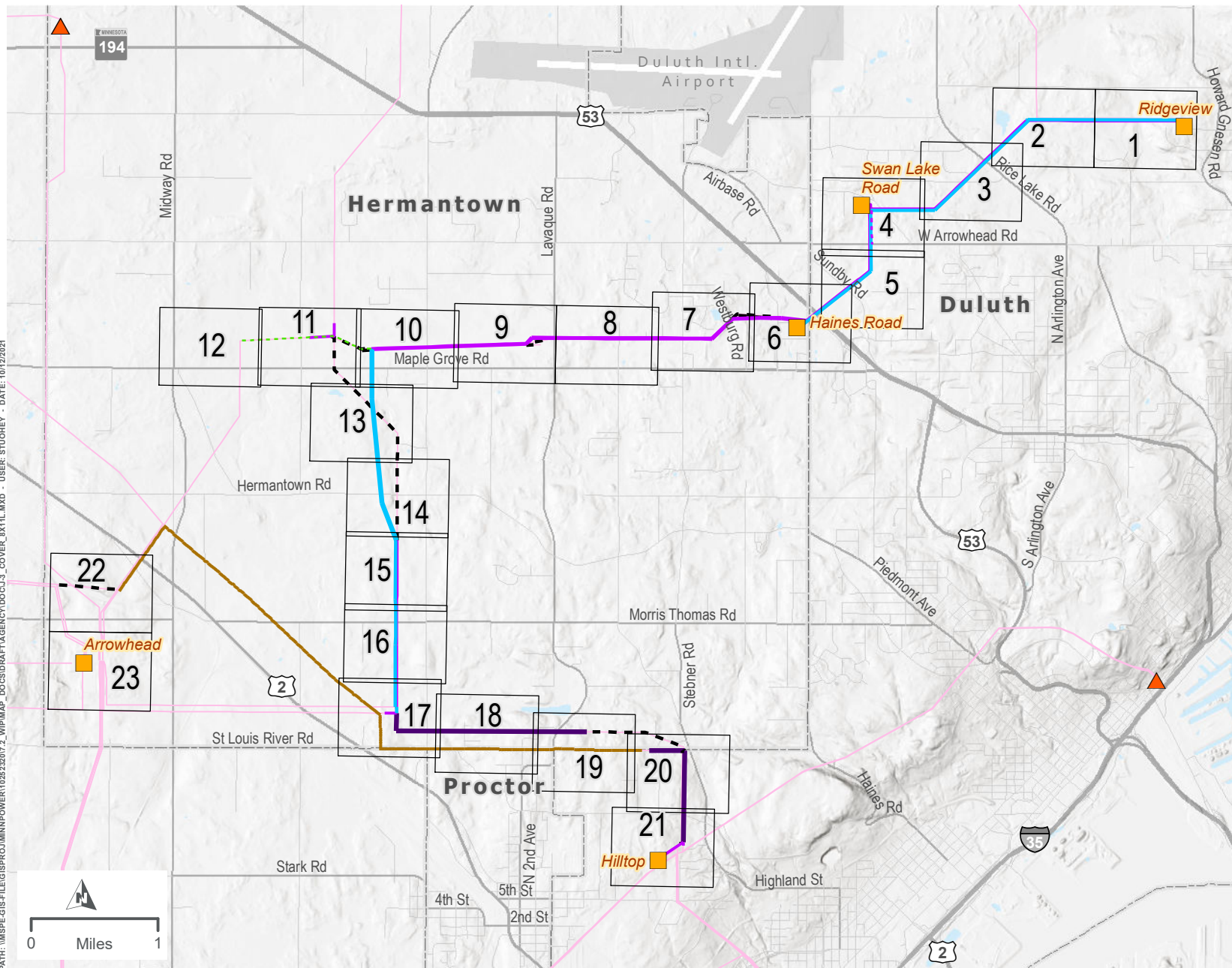


## RIDGEVIEW SUBSTATION EXPANSION DULUTH LOOP RELIABILITY PROJECT

### APPENDIX J-2



PATH: \\MSPE-GIS-FILES\GIS\PROJECTS\MINNPOWER\102532017\_2\_WIP\MAP - DOCS\DRIFT\AGENCY\DOCS\3\_COVER\_0X11L.MXD - USER: STUONEY - DATE: 10/12/2021



#### LEGEND

- Map Page
- Project Substation
- Non-Project Substation
- Existing Transmission Line
- Rebuilt Distribution
- New Transmission Line
- Rebuilt Transmission Line (Single Circuit)
- Rebuilt Transmission Line (Double Circuit)
- Removed Transmission Line
- Thermal Upgrades
- Rebuilt Fiber
- Waterbody
- Airport
- City Boundary

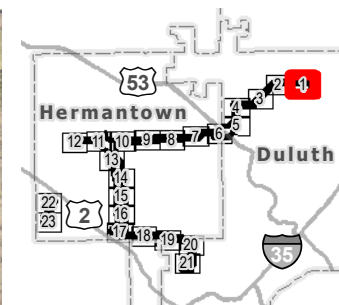
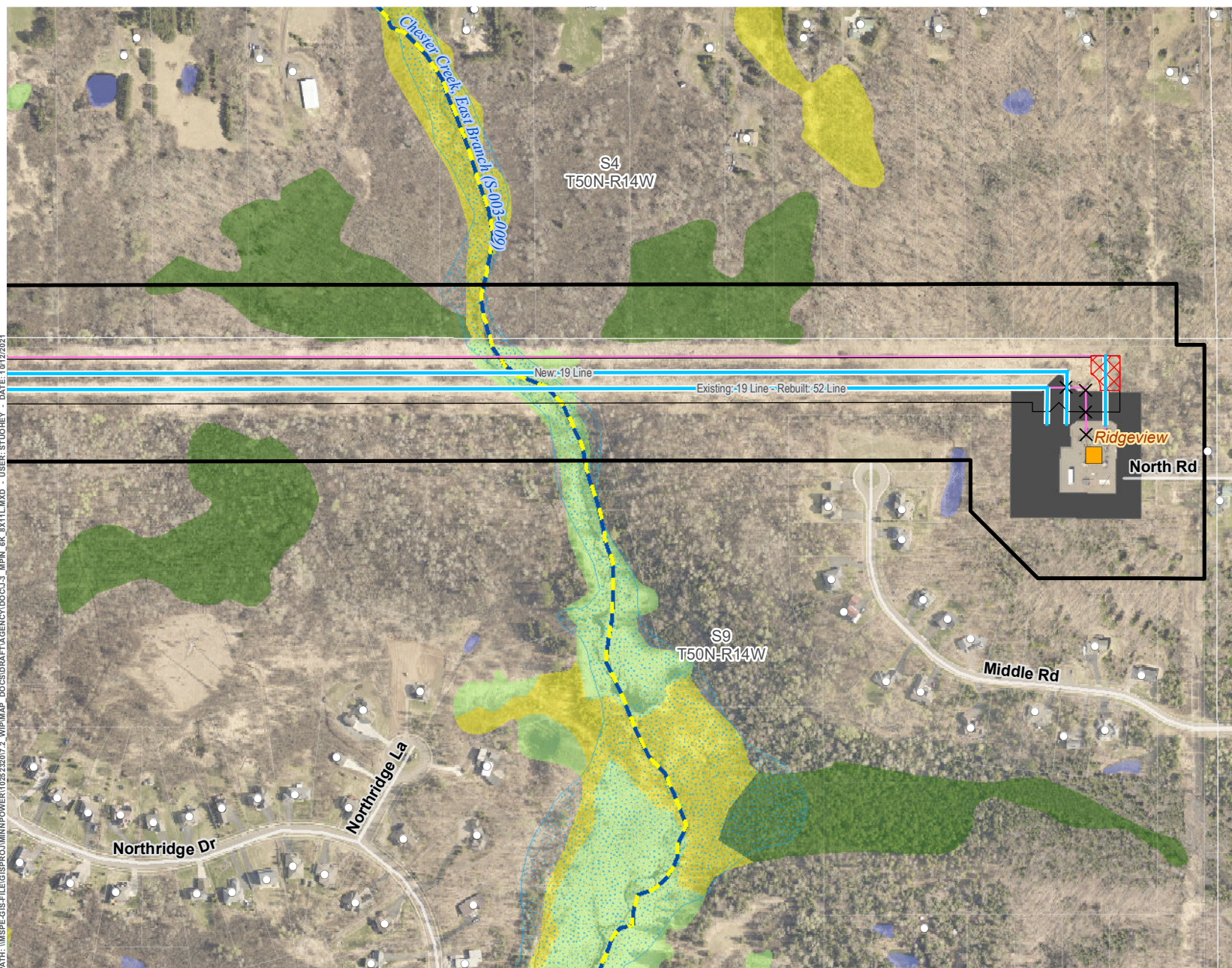


## PROJECT DETAIL - INDEX DULUTH LOOP RELIABILITY PROJECT

APPENDIX J-3



PATH: \\MSPE-GIS-FILES\GIS\PROJECTS\POWER\102523207.2\_WPM\MAP\_DCS\DRIFT\AGENCY\DOC\J.3\_MPH\_6K\_0X11.LMXD - USER: STUOKEY - DATE: 10/12/2021



#### LEGEND

- Proposed Route
- Approximate ROW
- Approximate New Impact Area
- Project Substation
- Substation Expansion Area
- Project 115 kV Transmission Line (Single Circuit)
- Removed Transmission Line (Realigned)
- Existing Structure
- Existing Transmission Line
- Existing/Proposed Trail
- Designated Trout Stream
- PWI Watercourse
- FEMA Floodplain
- National Wetlands Inventory**
  - Freshwater Emergent Wetland
  - Freshwater Forested Wetland
  - Freshwater Shrub Wetland
  - Freshwater Pond; Lake; Riverine

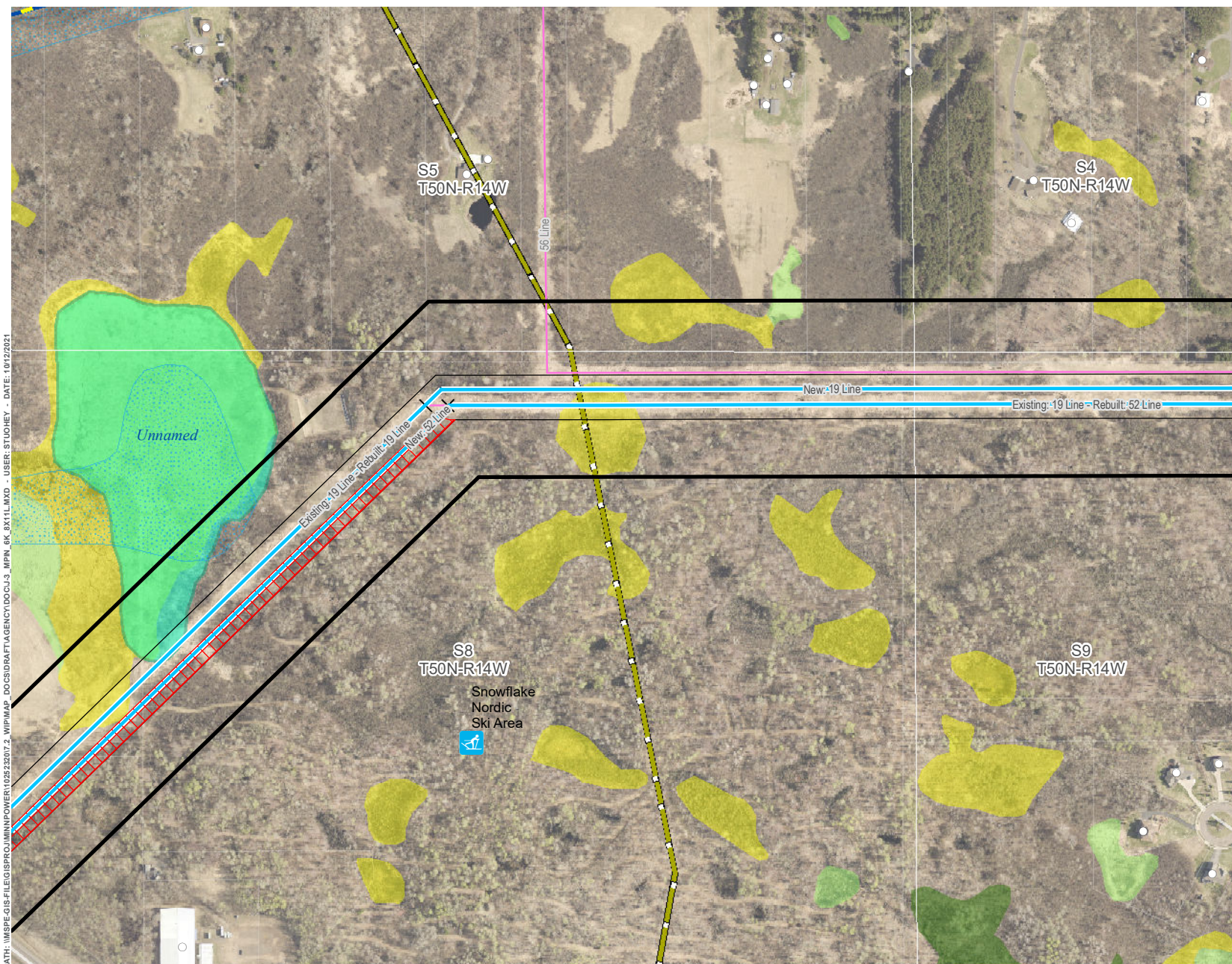
\*Note: Removals shown for significant realignments only. Line removals associated with the reconstruction of transmission lines, including minor centerline shifts are not indicated for clarity purposes. See Proposed System Overview for further definition on final line configurations and designations.



## PROJECT DETAIL - SWAN LAKE ROAD TO RIDGEVIEW DULUTH LOOP RELIABILITY PROJECT

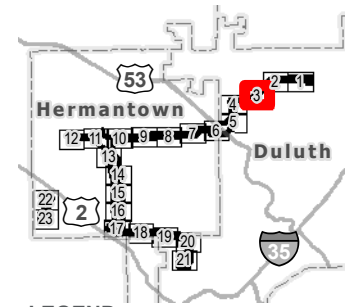
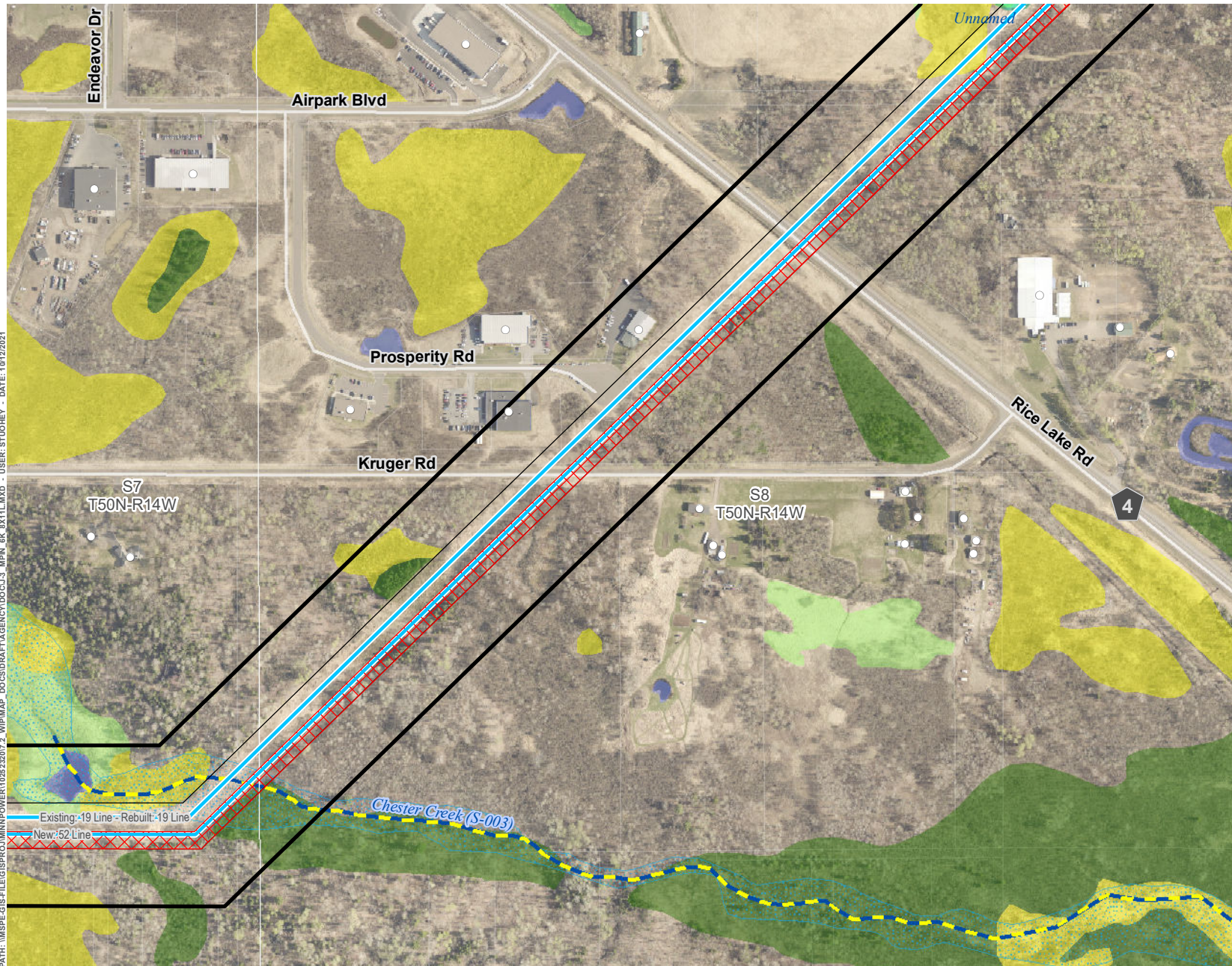
APPENDIX J-3: PAGE 1 OF 23







PATH: \\MSPEC-GIS-FILE\GIS\PROJECTS\MINNPOWER\10252207\2\_WIP\MAP DOCS\DATA\AGENCY\DOCS\J3\_MPN\_6K\_0X1\1.MXD - USER: STUOKEY - DATE: 10/12/2021



#### LEGEND

- Proposed Route
- Approximate ROW
- Approximate New Impact Area
- Project 115 kV Transmission Line (Single Circuit)
- Existing Structure
- Existing Transmission Line
- PWI Basin
- Existing/Proposed Trail
- Designated Trout Stream
- PWI Watercourse
- FEMA Floodplain
- National Wetlands Inventory**
  - Freshwater Emergent Wetland
  - Freshwater Forested Wetland
  - Freshwater Shrub Wetland
  - Freshwater Pond; Lake; Riverine

\*Note: Removals shown for significant realignments only. Line removals associated with the reconstruction of transmission lines, including minor centerline shifts are not indicated for clarity purposes. See Proposed System Overview for further definition on final line configurations and designations.



## PROJECT DETAIL - SWAN LAKE ROAD TO RIDGEVIEW DULUTH LOOP RELIABILITY PROJECT

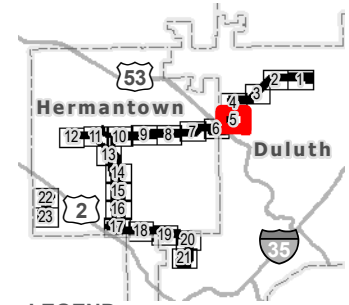
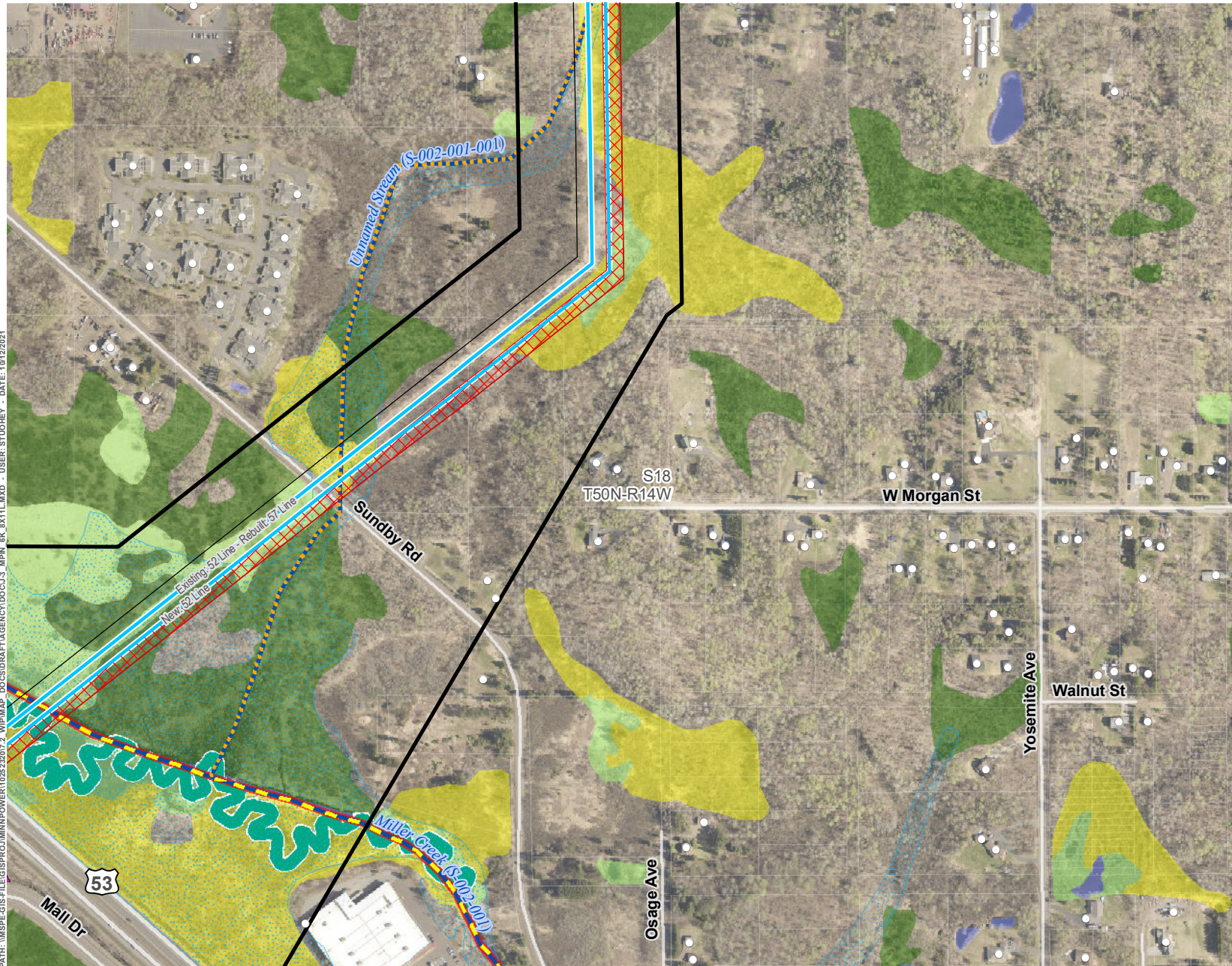
APPENDIX J-3: PAGE 3 OF 23







PATH: \\MSPEC\GIS\FILES\PROJECTS\MINNPOWER\10252307\2\_WPM\MAP\_DCS\DRIFT\AGENCY\DOC\J\_3\_MPH\_6K\_01\1\1.MXD - USER: STUOKEY - DATE: 10/12/2021



#### LEGEND

- Proposed Route
- Approximate ROW
- Approximate New Impact Area
- Project 115 kV Transmission Line (Single Circuit)
- Existing Structure
- Existing Transmission Line
- Existing/Proposed Trail
- Impaired Water
- Designated Trout Stream
- Protected Tributary to Designated Trout Stream
- Unmapped Tributary
- PWI Watercourse
- Miller Creek Meander
- FEMA Floodplain
- National Wetlands Inventory**
  - Freshwater Emergent Wetland
  - Freshwater Forested Wetland
  - Freshwater Shrub Wetland
  - Freshwater Pond; Lake; Riverine

\*Note: Removals shown for significant realignments only. Line removals associated with the reconstruction of transmission lines, including minor centerline shifts are not indicated for clarity purposes. See Proposed System Overview for further definition on final line configurations and designations.



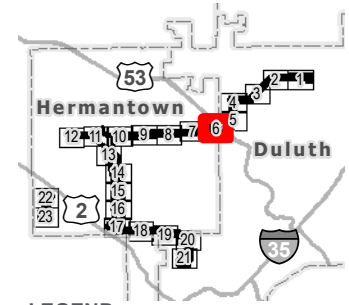
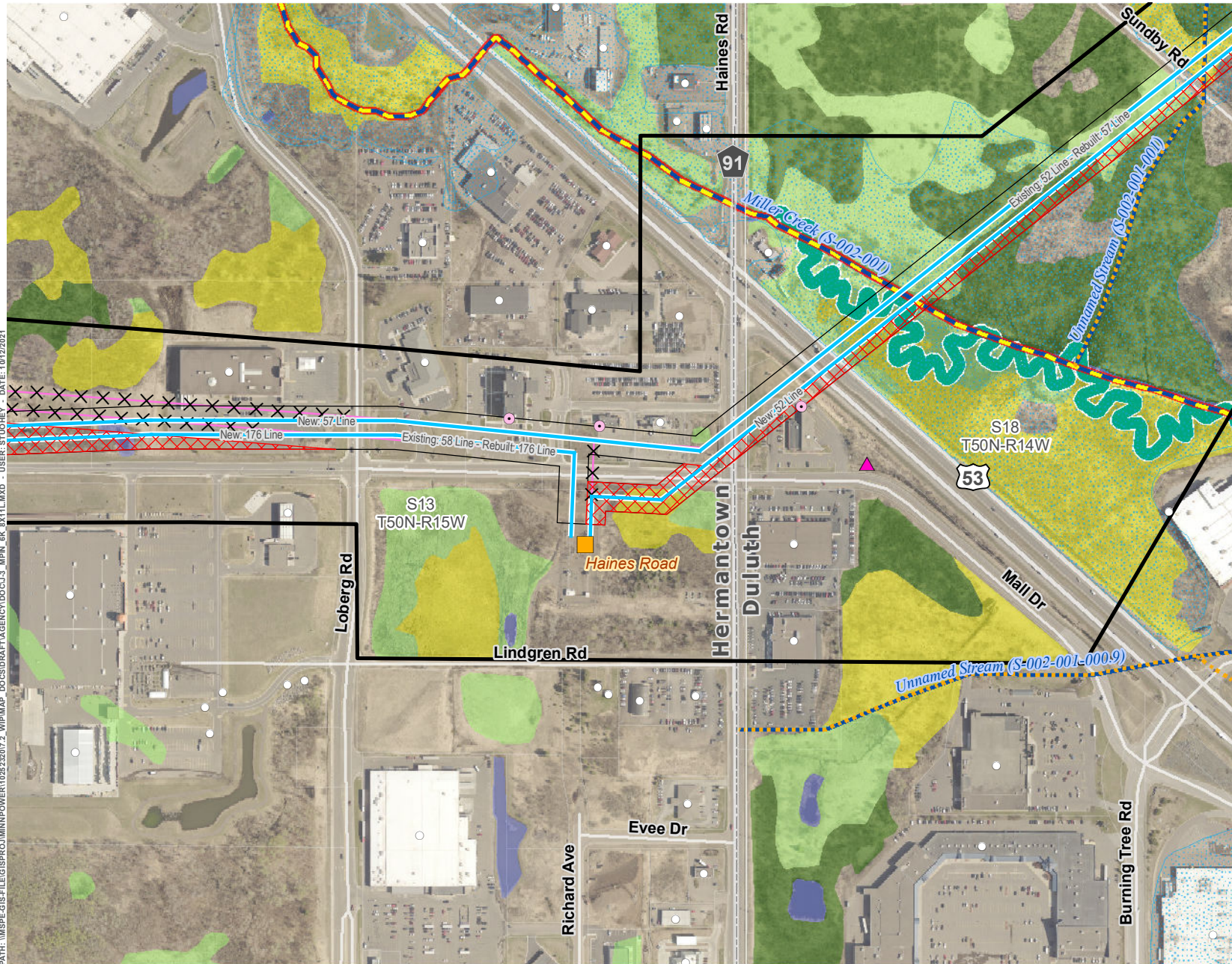
## PROJECT DETAIL - HAINES ROAD TO SWAN LAKE ROAD DULUTH LOOP RELIABILITY PROJECT

APPENDIX J-3: PAGE 5 OF 23





PATH: \\MSPE-GIS-FILES\GIS\PROJECTS\HILLTOP TO HAINES ROAD - USER: STUDY - DATE: 10/12/2021



#### LEGEND

- Proposed Route
- Approximate ROW
- Approximate New Impact Area
- Project Substation
- Project 115 kV Transmission Line (Single Circuit)
- Removed Transmission Line (Realigned)
- Existing Structure
- Structure in ROW
- Existing Transmission Line
- Existing/Proposed Trail
- Impaired Water
- Designated Trout Stream
- Protected Tributary to Designated Trout Stream
- Unmapped Tributary
- PWI Watercourse
- Miller Creek Meander
- FEMA Floodplain
- National Wetlands Inventory**
  - Freshwater Emergent Wetland
  - Freshwater Forested Wetland
  - Freshwater Shrub Wetland
  - Freshwater Pond; Lake; Riverine

\*Note: Removals shown for significant realignments only. Line removals associated with the reconstruction of transmission lines, including minor centerline shifts are not indicated for clarity purposes. See Proposed System Overview for further definition on final line configurations and designations.

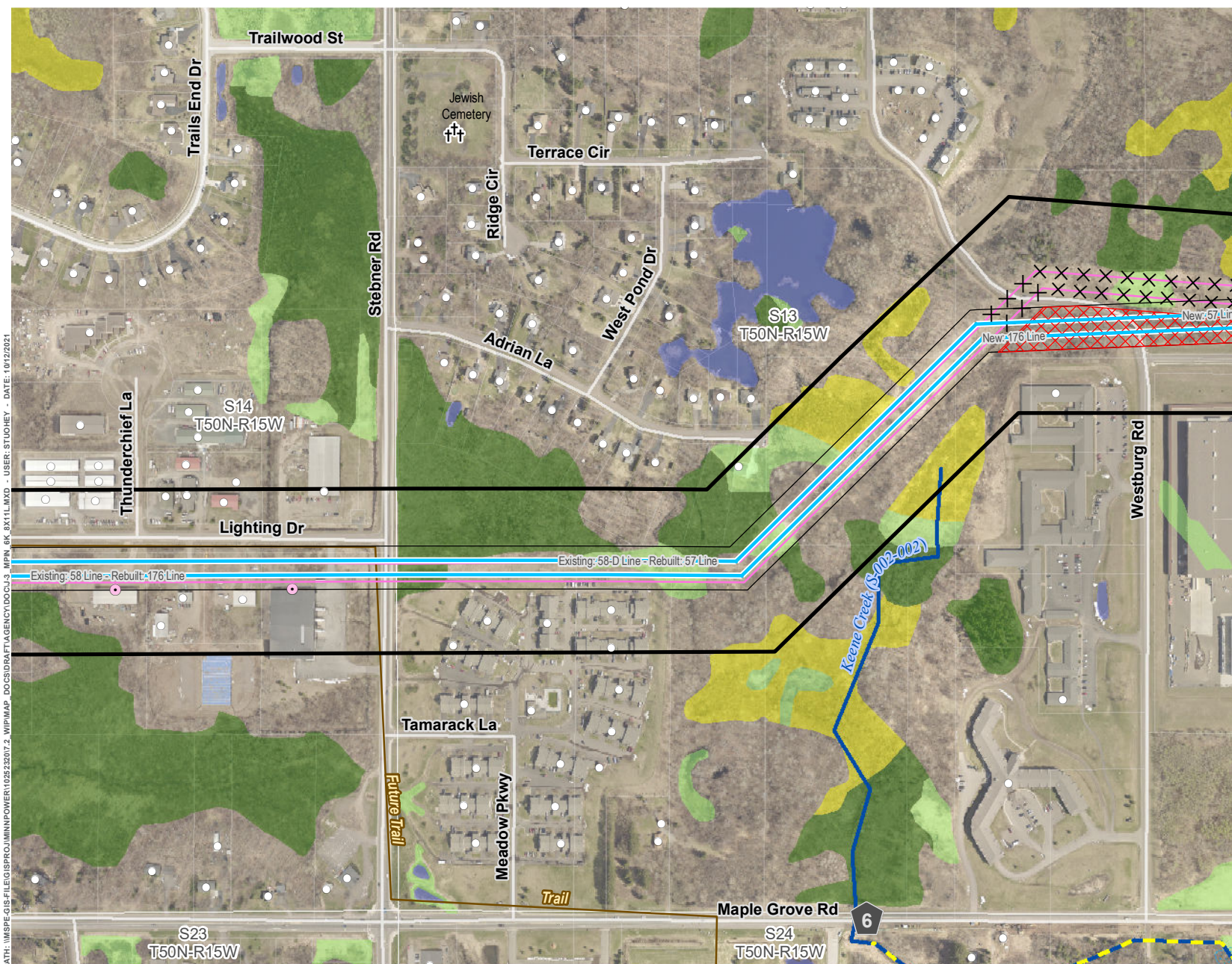


## PROJECT DETAIL - HILLTOP TO HAINES ROAD DULUTH LOOP RELIABILITY PROJECT

APPENDIX J-3: PAGE 6 OF 23

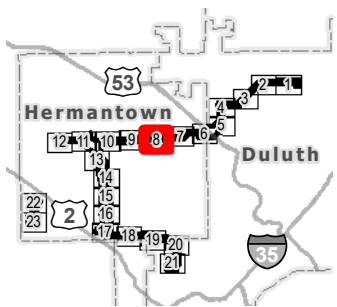
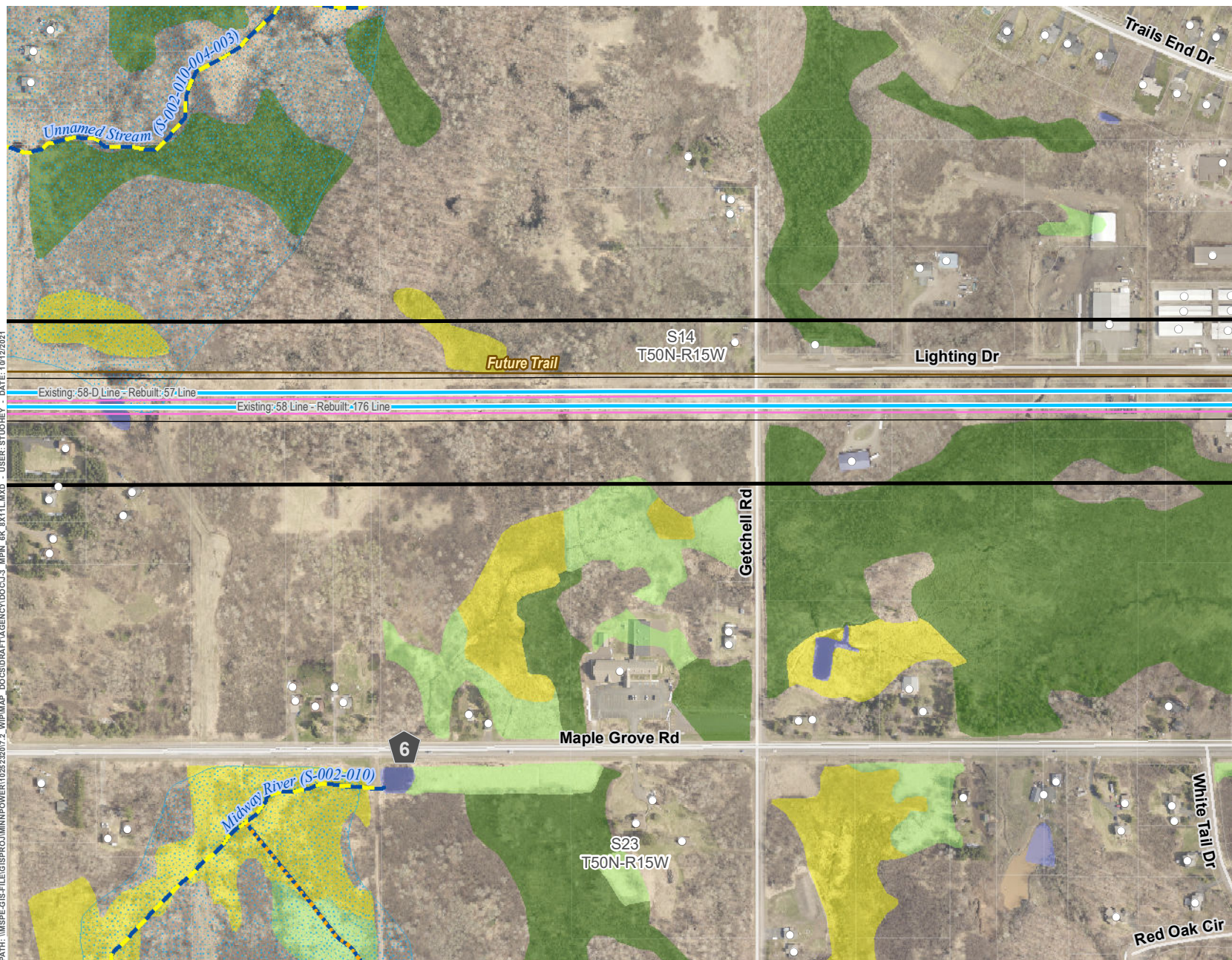








PATH: \\MSPE-GIS-FILE\GIS\PROJECTS\POWER\102523207\_2\_WPM\MAP DOCS\DATA\AGENCY\DOC\J\_3\_MPH\_6K\_0X1L\MXD - USER: STUDIOEY - DATE: 10/12/2021



- LEGEND**
- Proposed Route
  - Approximate ROW
  - Project 115 kV Transmission Line (Single Circuit)
  - Existing Structure
  - Existing Transmission Line
  - Existing/Proposed Trail
  - Designated Trout Stream
  - Protected Tributary to Designated Trout Stream
  - PWI Watercourse
  - FEMA Floodplain
  - National Wetlands Inventory**
    - Freshwater Emergent Wetland
    - Freshwater Forested Wetland
    - Freshwater Shrub Wetland
    - Freshwater Pond; Lake; Riverine

\*Note: Removals shown for significant realignments only. Line removals associated with the reconstruction of transmission lines, including minor centerline shifts are not indicated for clarity purposes. See Proposed System Overview for further definition on final line configurations and designations.



**PROJECT DETAIL - HILLTOP TO HAINES ROAD**  
**DULUTH LOOP RELIABILITY PROJECT**



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