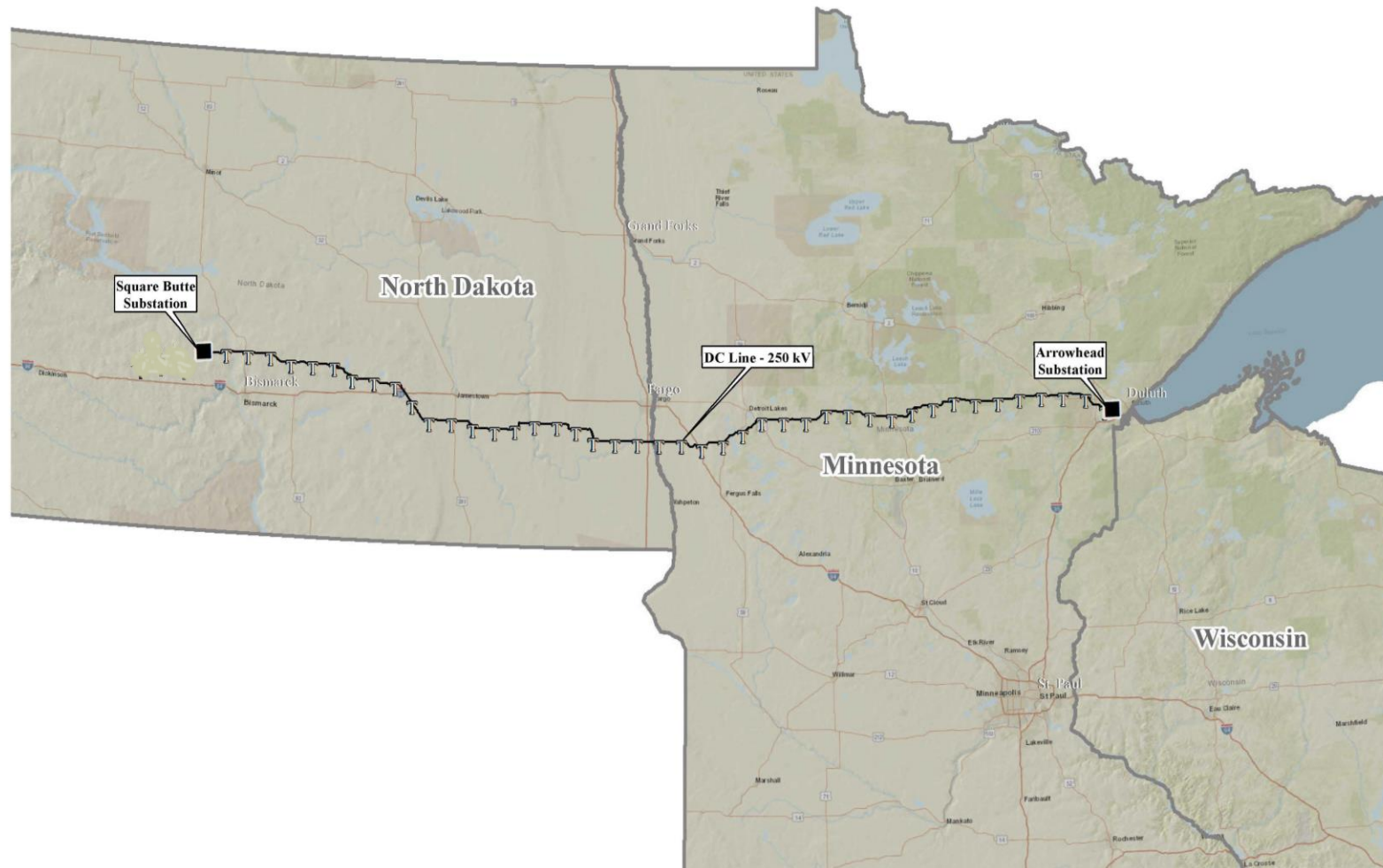


# Minnesota Power HVDC Modernization Project

ND PSC Docket # PU-24-381 & PU-24-382



# Minnesota Power HVDC Modernization Project- Introduction



AN ALLETE COMPANY



# Minnesota Power HVDC Modernization Project-

## Project Benefits

- HVDC Modernization: Replace & upgrade HVDC converter stations
  - Enable continued reliable operation of the HVDC line
  - Replace 50-year-old HVDC equipment with state of the art “voltage source converter” HVDC technology
  - Increase converter station capacity
  - Provide additional grid reliability benefits for North Dakota and Minnesota:
    - Voltage regulation, frequency response, blackstart capability, bidirectional transfer



AN ALLETE COMPANY



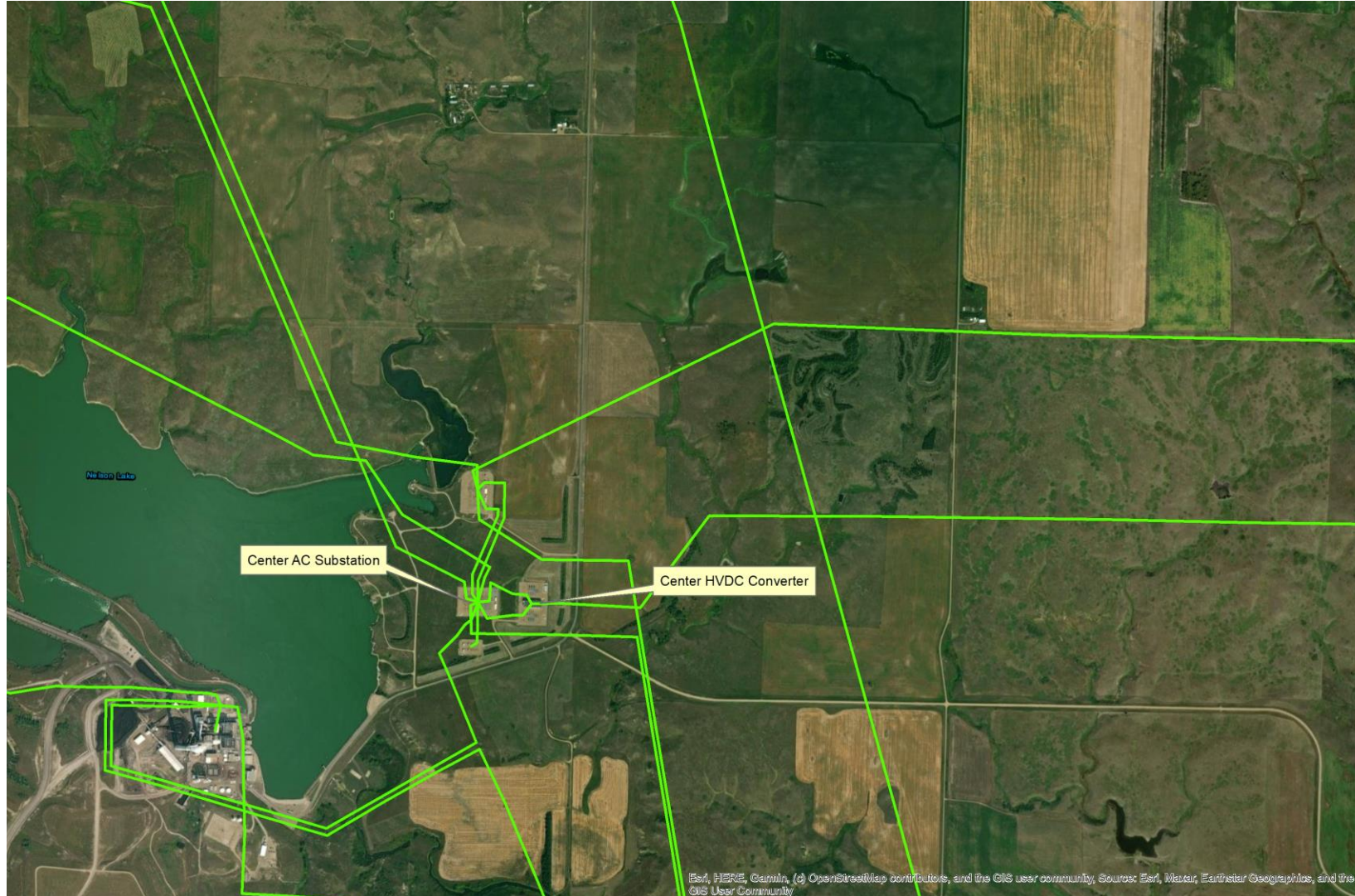


# Minnesota Power HVDC Modernization Project- Location





# Minnesota Power HVDC Modernization Project- Constraints



1. Needs to stay in service
  - Phased Construction
2. Existing Utility Infrastructure
  - transmission



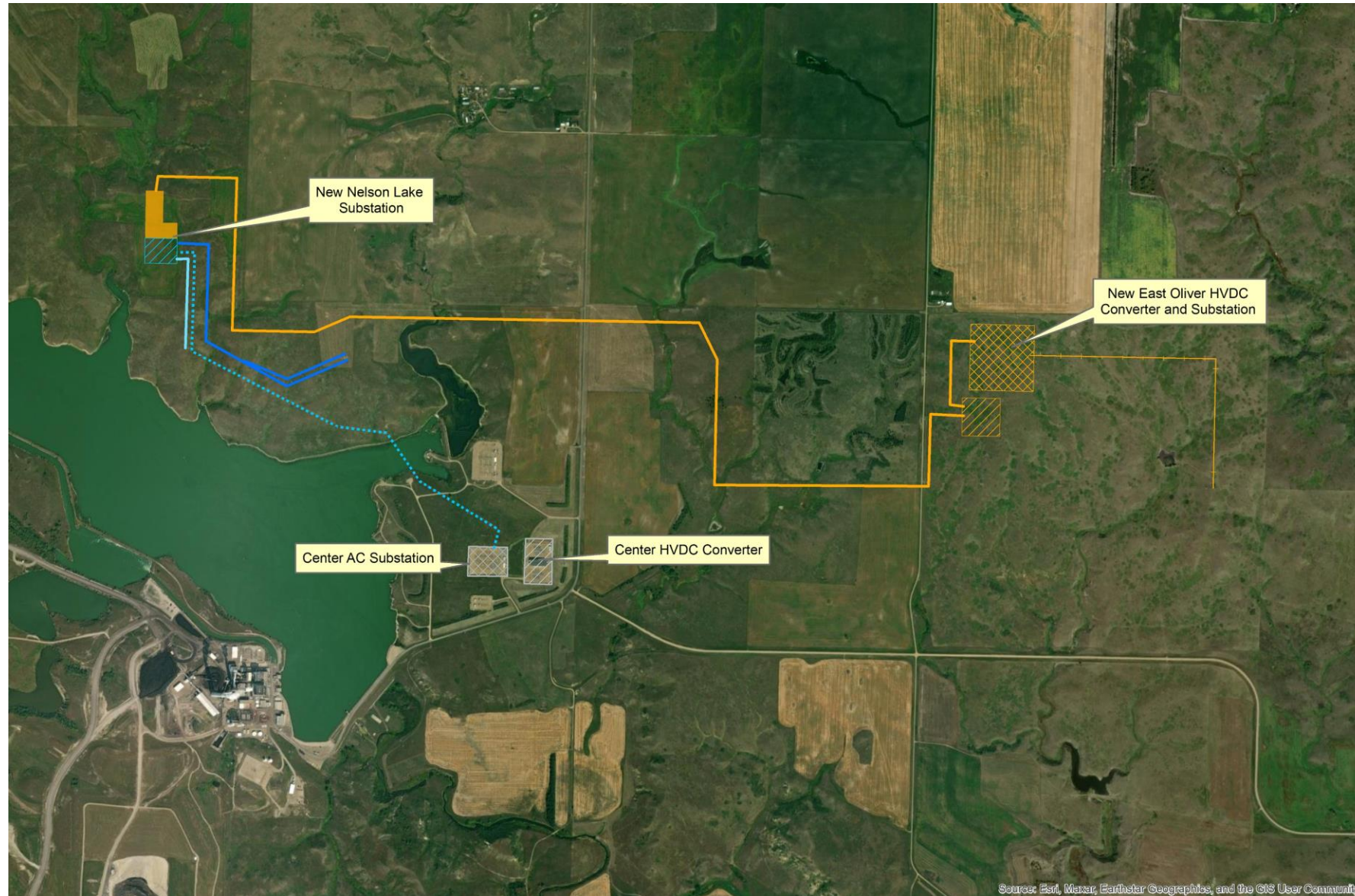
AN ALLETE COMPANY





# Minnesota Power HVDC Modernization Project-

## Proposed Project



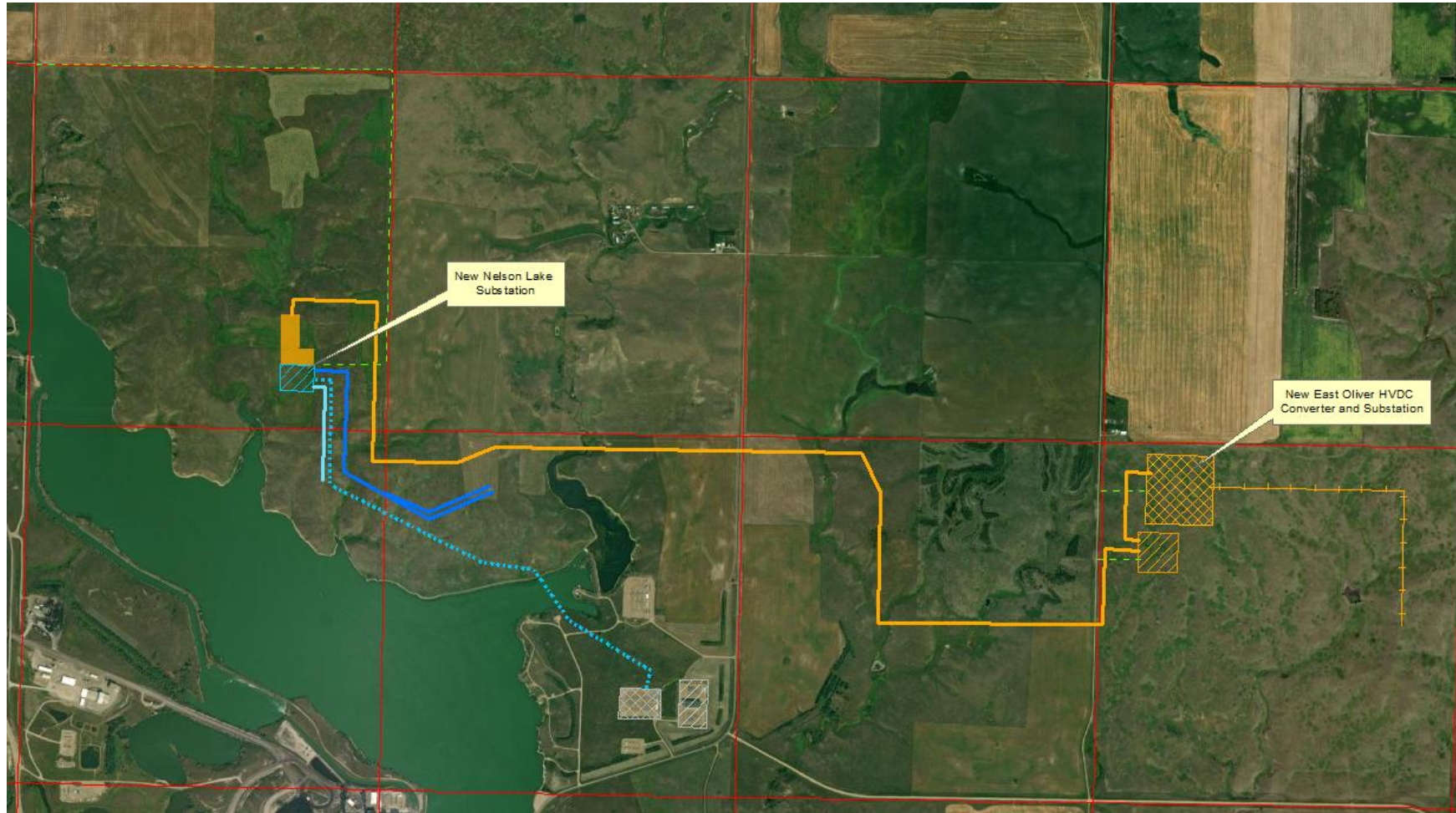
AN ALLETE COMPANY





# Minnesota Power HVDC Modernization Project-

## Proposed Project



- Phase 1
  - New Nelson Lake Substation
  - 0.3-mile long 230 kV AC Transmission Line.
  - 1.5-mile long 230 kV AC Transmission Line.
  - **Two 0.9 mile long 230 kV AC Transmission Lines- GRE**
- Phase 2
  - East Oliver HVDC Converter 345 kV Yard.
  - Nelson Lake 345 kV Sub Yard
  - 3.5-mile long 345 kV AC Transmission Line.
  - 0.9-mile long 250 kV HVDC Transmission Line Reroute.



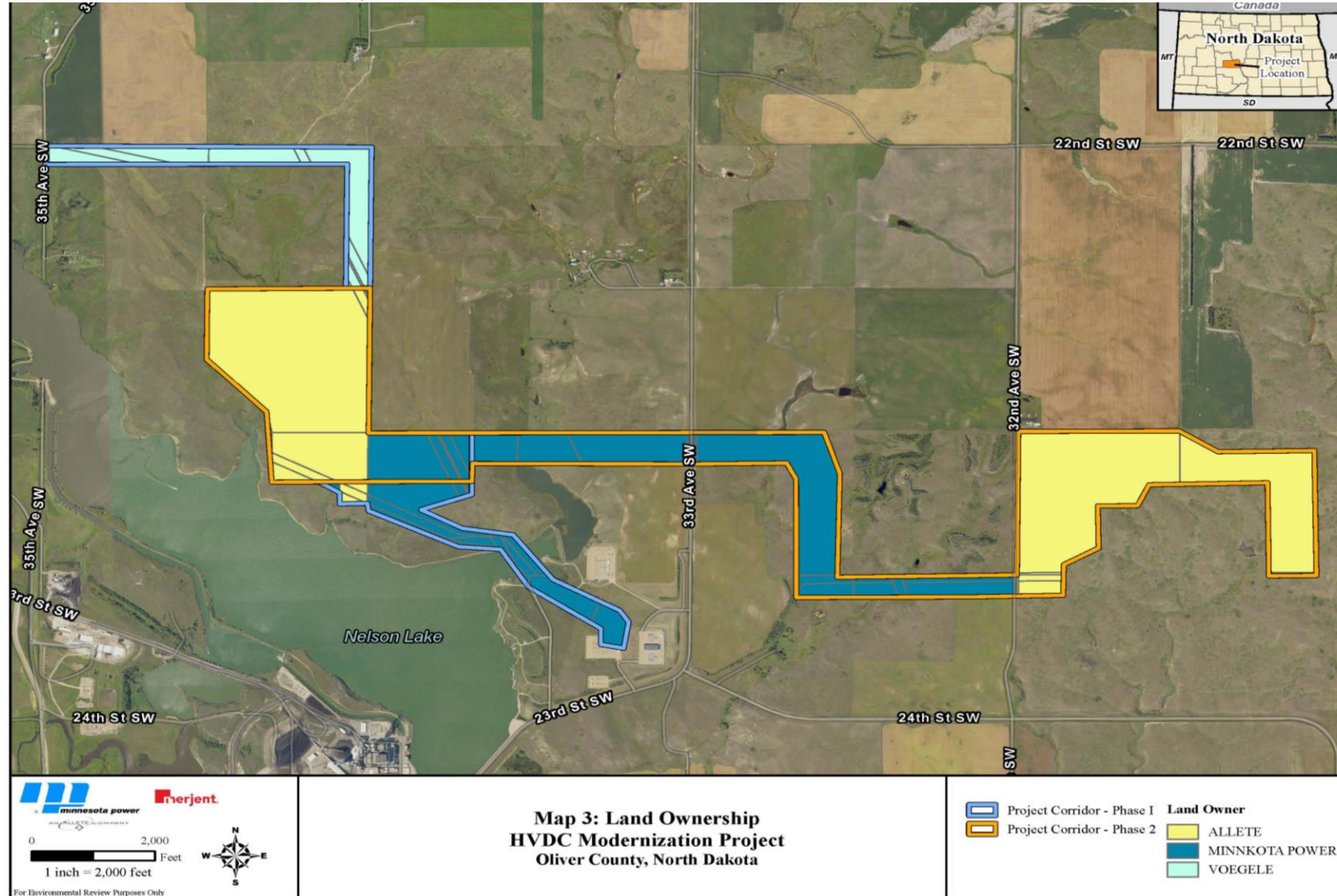
AN ALLETE COMPANY





# Minnesota Power HVDC Modernization Project-

## Land Ownership



- Project infrastructure on land owned either by Minnesota Power or Minnkota Power Cooperative.
- One exception: Section-line road access.



AN ALLETE COMPANY





# Minnesota Power HVDC Modernization Project-

## Regulatory Status

- Oliver County Conditional Use Permit issued 11/7/24
- Joint Consolidated Certificate of Corridor Compatibility and Route Permit Application Filed 12/23/24
  - Minnesota Power HVDC Modernization Project & Great River Energy's two 230 kV Lines
  - Applications filed under each docket.
- Surveys and Coordination
  - SHSND Concurrence of No Impact Received 12/10/25
    - Class I (literature) and Class III (field) cultural survey work complete
  - Game and Fish Meeting 06/04/24
  - Fish & Wildlife Service Meeting 5/23/24
  - Biological Surveys for Dakota Skipper Completed 9/30/24
    - No critical habitat withing the project area
    - Presence absence surveys = Not present
  - Wetland Surveys completed 2023 & 2024



AN ALLETE COMPANY



# Minnesota Power HVDC Modernization Project-

## Exclusion and Avoidance Areas

Exclusion areas.	
Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas.	Not present within Corridor or Route.
Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves.	Not present within Project Corridor or Route.
County parks and recreational areas; municipal parks; and parks owned or administered by other governmental subdivisions.	Not present within Corridor or Route.
Areas critical to the life stages of threatened or endangered animal or plant species.	No designated critical habitat present.
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged	No designated critical habitat present.
Areas within one thousand two hundred feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.	No ICBM launch or launch control facilities are located within 1,200 feet of the project boundary.
Areas within 30 feet on either side of a direct line between ICBM launch or launch control facilities to avoid microwave interference.	No ICBM launch or launch control facilities are located near the Corridor

Avoidance areas.	
Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.	Not present within Project Corridor or Route.
Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands.	Not present within Corridor or Route. The Wilbur Boldt Wildlife Management Area is adjacent to the Project Corridor and Phase 2 facilities.
Historical resources which are not specifically designated as exclusion or avoidance areas.	Cultural Resources are present and will be avoided
Areas which are geologically unstable.	Landslide deposits as indicated by the North Dakota Geological Survey landslide mapping program are present within the Project. A geotechnical analysis will be performed and areas that are geologically unstable will be avoided.
Within 500 feet of a residence, school, or place of business.	No residences, schools, or businesses are located within 500 feet of the Corridor. The closest farmstead is approx. 0.56 mile north of the Project
Reservoirs and municipal water supplies.	Nelson Lake is located within the Project. No impacts anticipated.
Water sources for organized rural water districts.	Not present within Corridor or Route.
Irrigated land (note – this is no longer part of the siting criteria (NDCC Sec. 49-22-05.1(2))).	Not applicable.
Areas of recreational significance which are not designated as exclusion areas.	Not present within Corridor or Route.




AN ALLETE COMPANY





# Minnesota Power HVDC Modernization Project-

## Project Timeline

- 
- Q3-2025: Nelson Lake Sub & East Oliver Converter Civil Work Begins
  - Q3-2026: Nelson Lake Sub & East Oliver Converter Construction Begins
  - Q2-2027: Nelson Lake Transmission Line Work Construction Begins
  - Q1-2028: East Oliver Transmission Line Work Construction Begins
  - Q3-2029: Project in Service



# Minnesota Power HVDC Modernization Project-

## ND PSC Request

- Two Certificates of Corridor Compatibility and Route Permits
  1. One Certification and Route Permit for Minnesota Power's HVDC Modernization Project
  2. One Certification and Route Permit for Great River Energy's two 0.9 mile long 230 kV transmission lines



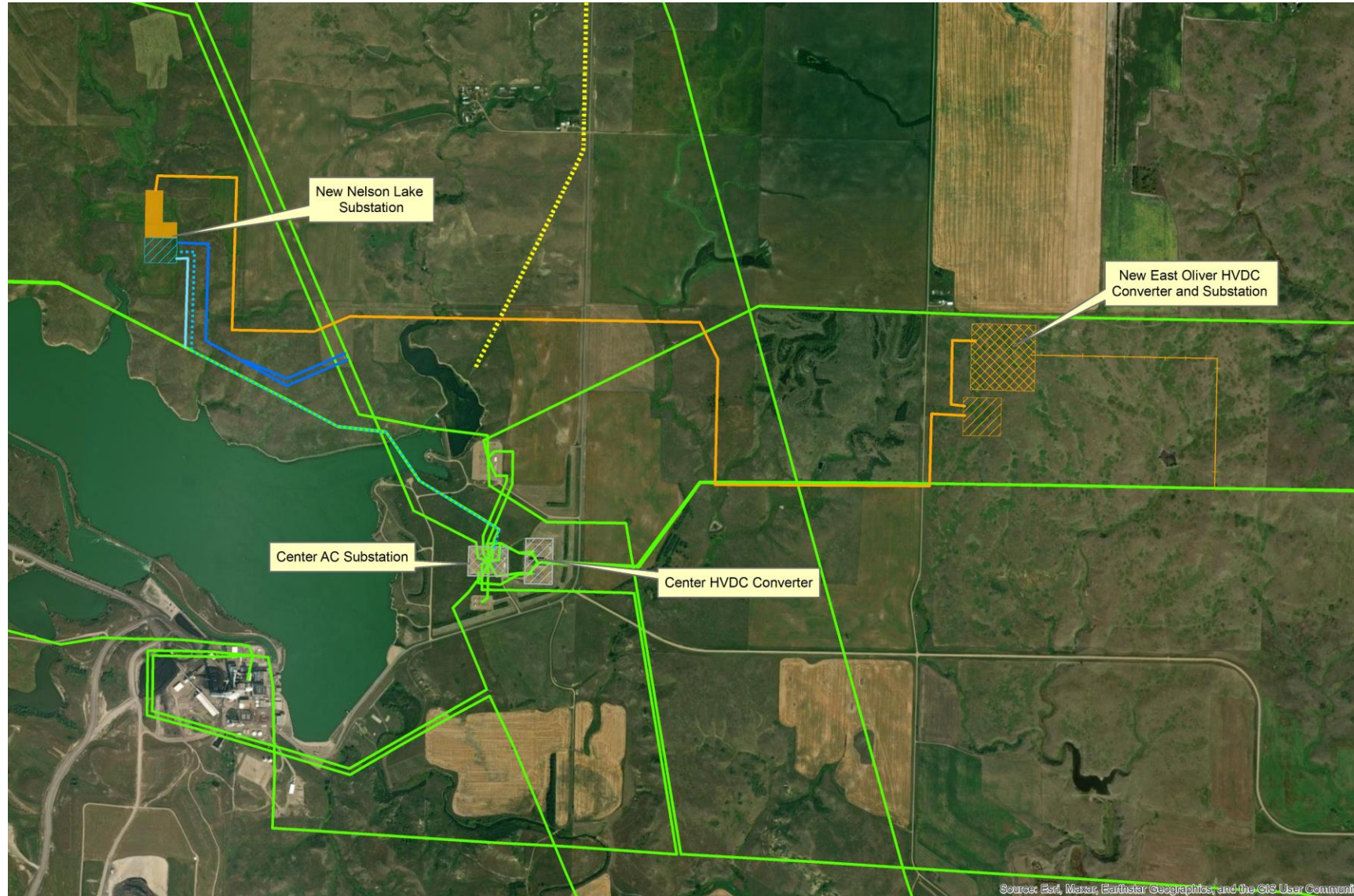


# Minnesota Power HVDC Modernization Project- Appendices

## *Project Appendices*



# Minnesota Power HVDC Modernization Project- Infrastructure

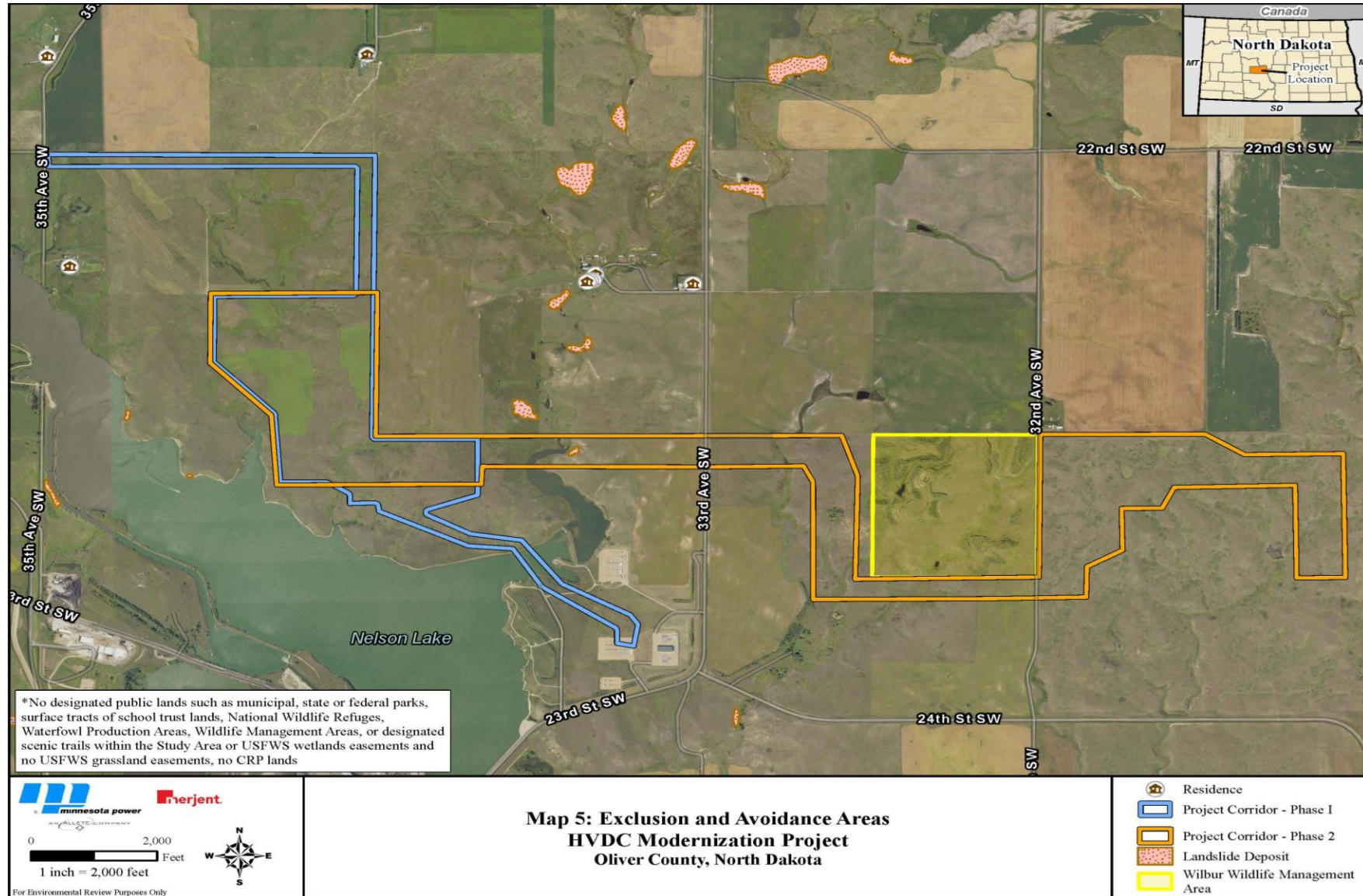


AN ALLETE COMPANY





# Minnesota Power HVDC Modernization Project- Exclusion and Avoidance Areas

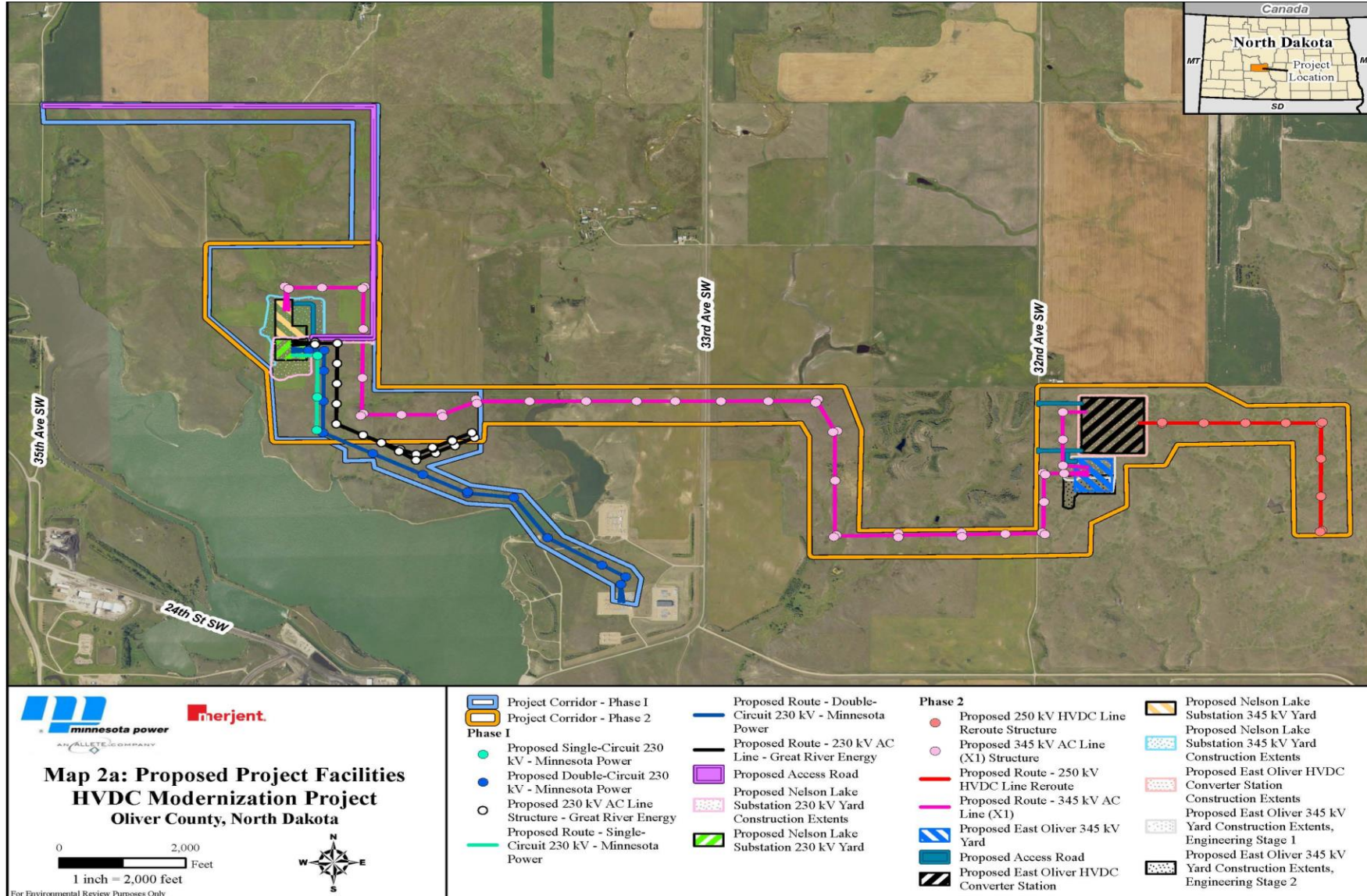


AN ALLETE COMPANY





# Minnesota Power HVDC Modernization Project- Application Project Overview Map



AN ALLETE COMPANY

