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June 6, 2023

### **MEMORANDUM**

**TO: Council Members**

**FROM: Brian Dekiep, Montana State Staff**

**SUBJECT: Grid United and Northern Plains Connector**

### **BACKGROUND:**

**Presenter:** Brant Johnson, Grid United

**Summary:** The North Plains Connector is an approximately 385 mile and up to 525 kilovolt high voltage direct current (HVDC) transmission line connecting the U.S. eastern and western electric grids in Montana and North Dakota. The alternating current portions of the project, which will connect the converter stations on either end of the line to the local grids, will be 345 kV. The North Plains Connector will be open to all sources of electrical power generation. In response to demand, the project will be able to transport power in either direction along the line.

The North Plains Connector is in the planning and development phase. Grid United will continue to gather input from stakeholders and study the proposed project corridor. Using that input, Grid United will finalize their route analysis, purchase land rights, and initiate regulatory filings, with approvals expected in 2025. Construction will commence after the project obtains the necessary regulatory approvals. The North Plains Connector could be operational as early as 2029.

Resources:

<https://northplainsconnector.com/>

<https://www.ypradio.org/energy/2023-03-07/planned-montana-dakota-transmission-line-to-connect-eastern-and-western-electric-grids>

**Proposed line map:**





# NORTH PLAINS CONNECTOR

A Grid United Project

Project Status and Overview

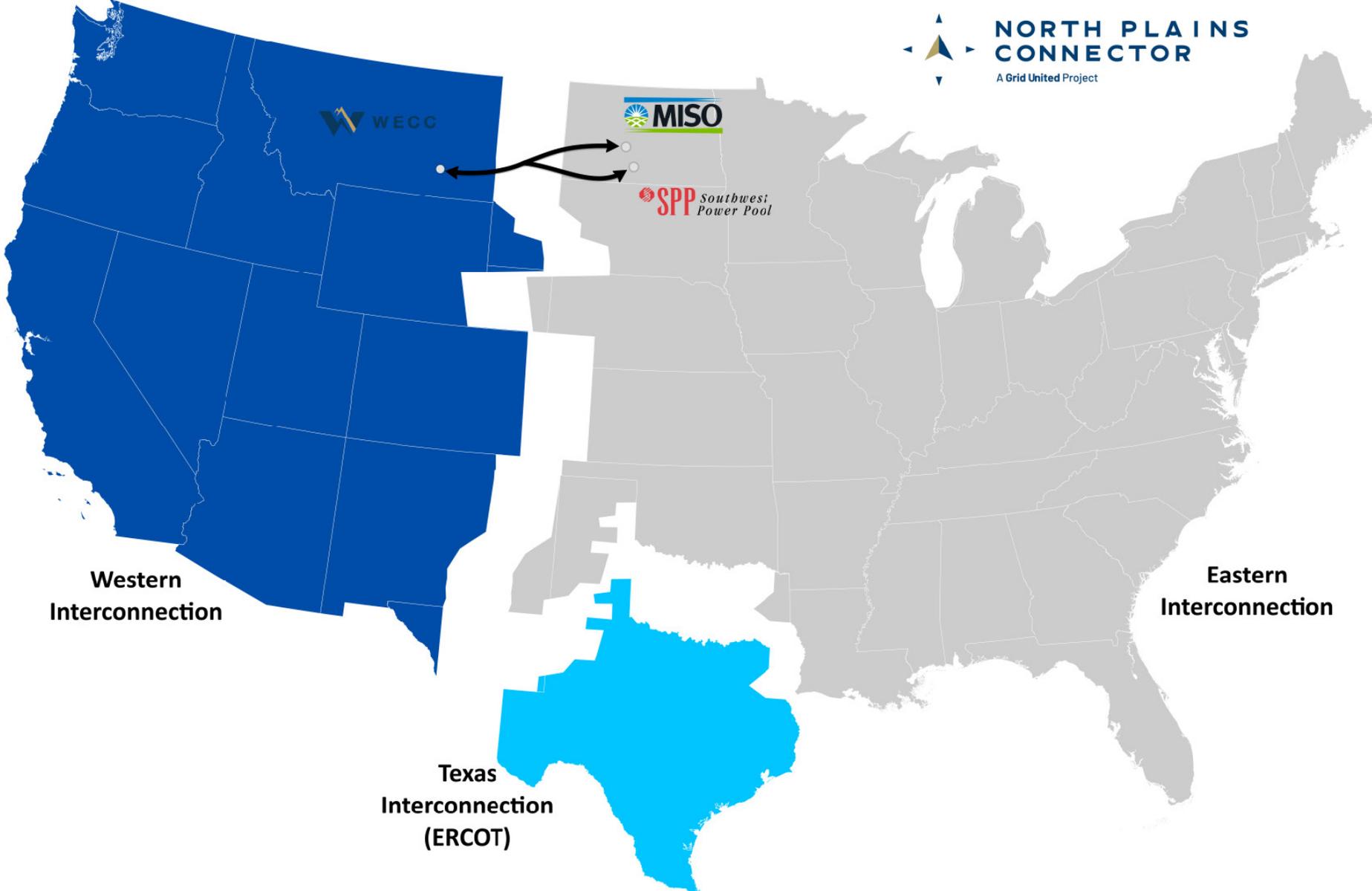




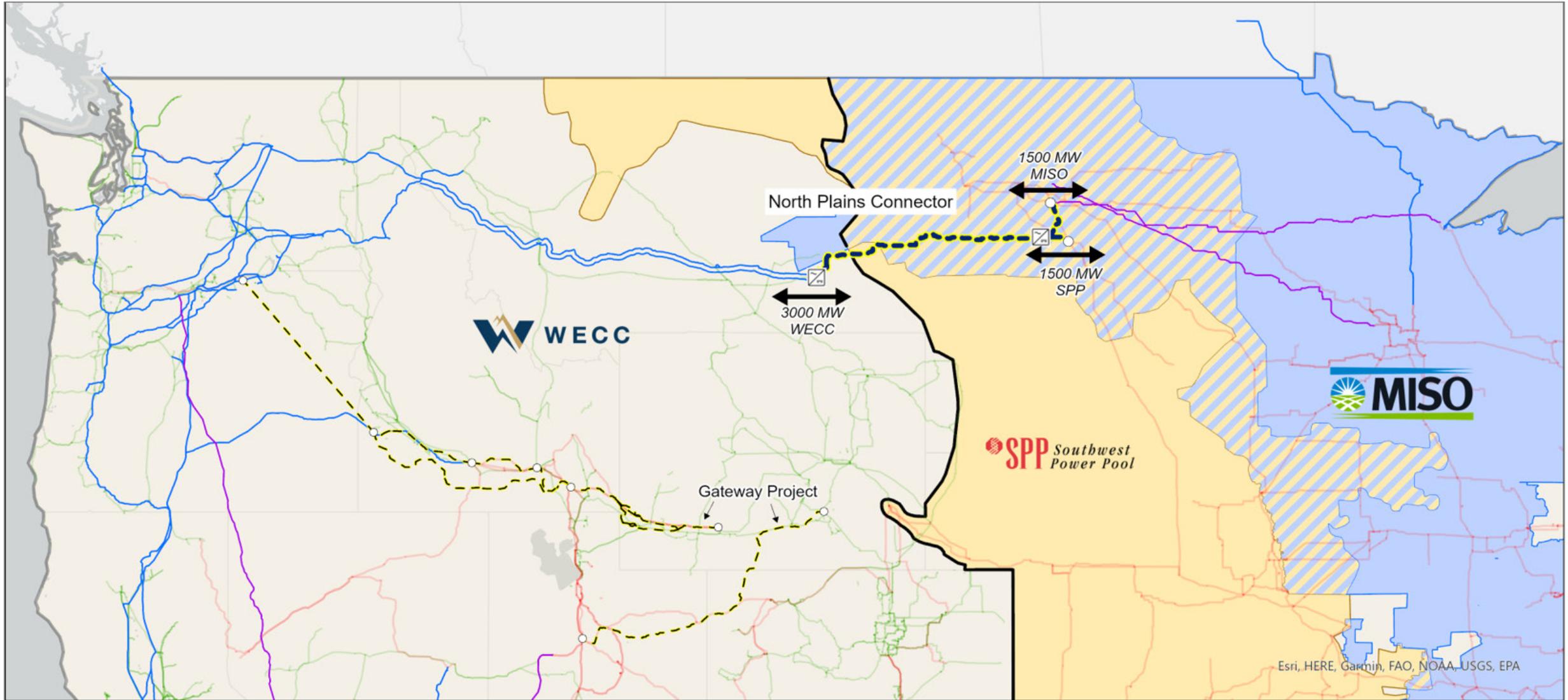
# NORTH PLAINS CONNECTOR

A **Grid United** Project

# Project Overview



# Establishing a Corridor Across the Northern US



## Project Configuration

### Route

- Length: ~385 miles
- 2 States (North Dakota, Montana)
- 9 Counties

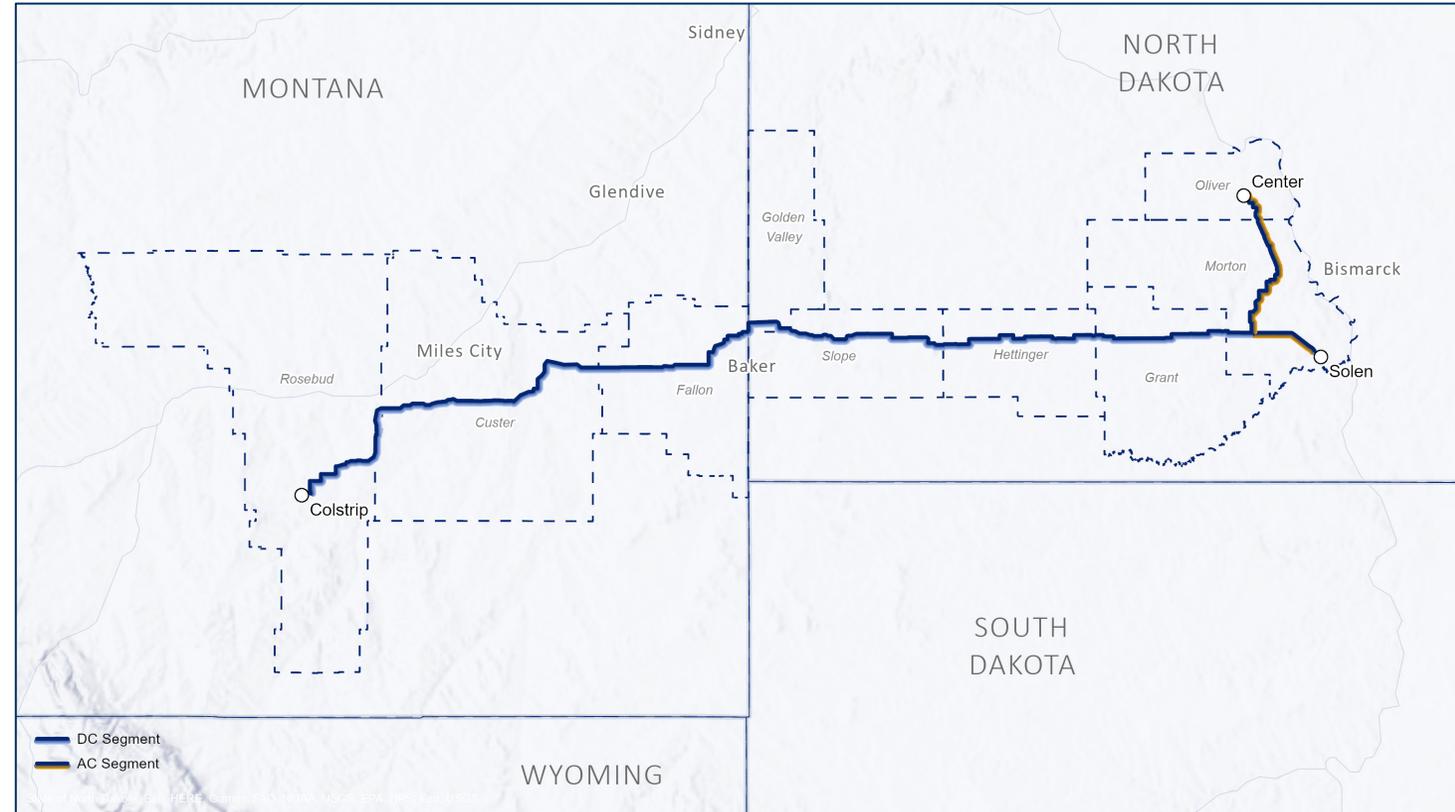
### Rating

- 525 kV HVDC (VSC), 3,000 MW

### Interconnections

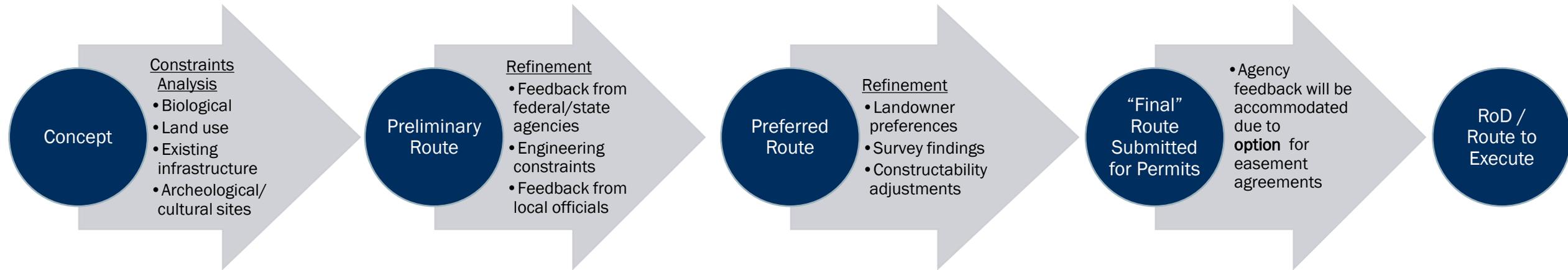
- WECC: 3,000 MW into Colstrip, MT 500 kV system
- SPP: 1,500 MW (AC) to new substation near Solen, ND
- MISO: 1,500 MW (AC) to Center, ND Substation

## Overview Map

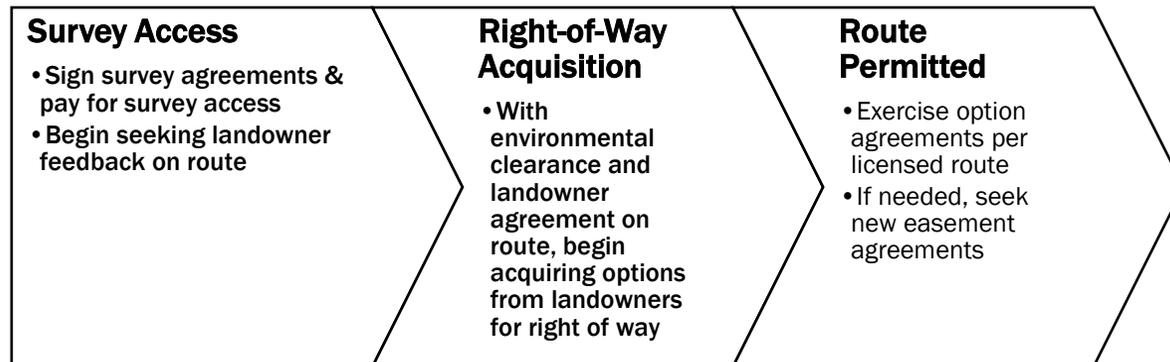


# Establishing a Corridor and Route Via Stakeholder Input

Our routing process incorporates stakeholder feedback *prior to* seeking regulatory approval, fostering positive relationships with agencies, tribal governments, landowners and communities during early planning.



## GU's Right of Way Acquisition Process



# Extensive Stakeholder Outreach

- North Plains Connector has collaborated with the following stakeholders and is continuing to incorporate their feedback.
- The project has hosted 12 open houses for affected landowners and elected officials.



Federal	State	Local	Further Outreach
<ul style="list-style-type: none"><li>• WAPA</li><li>• US Forest Service</li><li>• US Fish &amp; Wildlife Service</li><li>• National Park Service</li><li>• Bureau of Land Management</li></ul>	<ul style="list-style-type: none"><li>• MT Governor</li><li>• ND Governor</li><li>• MT &amp; ND Public Service Commission</li><li>• MT &amp; ND State Senators</li><li>• MT &amp; ND State Representatives</li><li>• MT Dept. of Environmental Quality</li><li>• MT &amp; ND Chamber of Commerce</li><li>• MT &amp; ND Game &amp; Fish</li><li>• MT &amp; ND Trust Lands</li><li>• MT Sage Grouse Oversight Team</li><li>• MT Dept. of Natural Resources &amp; Conservation</li></ul>	<ul style="list-style-type: none"><li>• County Commissioners of impacted MT &amp; ND Counties</li><li>• MT Association of Counties</li><li>• ND County Commissioners Association</li><li>• Local Utilities/Co-Ops</li><li>• Affected landowners</li></ul>	<ul style="list-style-type: none"><li>• 23 Indigenous Tribes</li><li>• 14 national environmental NGOs</li><li>• Treasure State Resources Association</li><li>• MT Stockgrowers' Association</li><li>• International Brotherhood of Electrical Workers</li><li>• Lignite Energy Council</li><li>• Western Dakota Energy Association</li></ul>

## Progressive Approach

- Inclusive engagement based on former treaty rights or, traditional cultural significance – no BIA trust lands
- Involved tribes early during routing, before formal consultation and Section 106
- Engaging with 23 tribes across Montana, North Dakota, and South Dakota

## Involvement during route selection and surveys

- Tribal Cultural Specialists were embedded with environmental and archeology crews to identify and document tribal cultural places during survey season
- Each tribe offered participation to recognize sovereignty
- Monthly progress meetings with THPOs to discuss findings and proposed mitigation and avoidance

## Next Step - Creating Tribal Cultural Report Preparation

- THPO-led group is designing a tribal cultural report for inclusion in the environmental report being prepared for NEPA
- Report will represent individual tribal histories, survey results, and traditional knowledge based on tribal preference
- Approach appreciated by the THPOs to provide the early input into the analysis and intended to aide former consultation

# Focus on Risk Reduction



Transmission development is hard – Grid United is focused on overall risk avoidance and continual key risk mitigation

Risk	Mitigation
Regulatory Timeline	Early stakeholder engagement during routing to propose a route that minimizes potential issues and opposition during scoping
Landowner Opposition	Develop flexible route incorporating feedback from willing landowners and avoiding impacts to landowners opposed to the project – voluntary acquisition
Tribal Opposition	Engaged with tribal councils and Tribal Historic Preservation Officers during routing and included tribal specialists during surveys and rerouted real time
Environmental Legal Challenges	Litigation typically challenges sufficiency of review. Performed full surveys and studied multiple alternatives. Acquiring options to respect agency review.
Endangered Species Impacts	Engaged with state and federal environmental agencies during route development to avoid areas of concern – sage grouse core habitat
Disparate Political Views on Carbon	Have maintained and emphasized the project is open to all generation types and is focused on grid improvements, resiliency, and market access

# Project Timeline



## Land Acquisition & Environmental Surveys

## Permitting & Engineering

## Manufacturing & Construction

COD



2022

2023

2024

2025

2026

2027

2028-2030

Stakeholder outreach, Environmental surveying

Begin option agreements

Regulatory filings: Federal (NEPA) and State

Draft EIS

Record of Decision

# Development Status



Land	Commercial	Environmental Review & Permitting
<ul style="list-style-type: none"> <li>Acquired voluntary survey permission on <b>94%</b> of the Right of Way.</li> <li>After starting in December 2023, have acquired Option for Easement agreements on <b>19%</b> of the Right of Way.</li> <li>A landowner group called "The Pro North Plains Connector Landowner Group" has formed, representing up <b>40-50%</b> of the private ROW. They are <b>expected to sign in second quarter</b>.</li> <li>Public land represents about <b>10%</b> of the ROW.</li> <li>Acquired Option for Purchase on <b>Eastern Converter Station (160 Acres)</b>. Offers presented for Western Converter Station and SPP Switchyard .</li> </ul>	<ul style="list-style-type: none"> <li>Signed MOU with ALLETE Inc. In January 2023</li> <li>Optimal commercial structure would involve participation by all, or nearly all, of those utilities whose customers benefit from the line.</li> <li>Have held productive conversations with numerous utilities including NorthWestern Energy, Basin Electric Power Cooperative, Pacificorp, Bonneville Power Administration, Portland General Electric, Avista, Idaho Power and Montana Dakota Utilities,</li> <li>Continuing to explore commercial opportunities with additional utilities and generators</li> </ul>	<ul style="list-style-type: none"> <li>Conducted field surveys during the 2022 field season. Completed <b>60%</b> of required field work.</li> <li>Will conduct field surveys again during 2023 field season. Largely tribal and cultural.</li> <li>Have cost recovery agreement in place with Montana Department of Environmental Quality, and Montana Major Facility Siting Act application will be filed June 30, 2023. MT DEQ hopes to coordinate their environmental review and scoping with federal agencies.</li> <li>Will begin North Dakota County permitting in June. Will apply for Certificate of Corridor Combability from the North Dakota Public Service Commission in early 2024</li> </ul>

## NorthWestern Energy *on behalf of Colstrip transmission owners*

- Transmission-to-transmission interconnection request no. 7 for 3,000 MW accepted Jan 2022
- Feasibility study complete
- System Impact Study underway

## MISO

- 2,000 MW Merchant HVDC Connection (Attachment GGG) request submitted Oct 2021
- Queue no. H108
- Draft System Impact studies for withdrawal show \$44.5M in Steady State network upgrades
- LRTP Tranche 1 impact to be determined
- Minnkota Affected System studies underway

## SPP

- 1,500 MW Merchant Transmission Developer Interconnection Request presented at SPP Transmission Working Group (TWG) in May 2022
- TWG approved feasibility study scope in September 2022
- Initial study results expected Q1 2023

# State Permitting and NEPA Lead Agency Coordination

## Montana DEQ - MFSA and MEPA

- MFSA covers all state permits
- MFSA requires scoping and alternatives analysis
- MT DEQ and federal agencies have agreed to coordinate their review

## Federal Permitting – DOE NEPA lead?

- BLM (12 miles)
- USFS (9 miles)
- USFWS Section 7 vs. Section 10
- USDA – license across Ft. Keogh
- USACOE

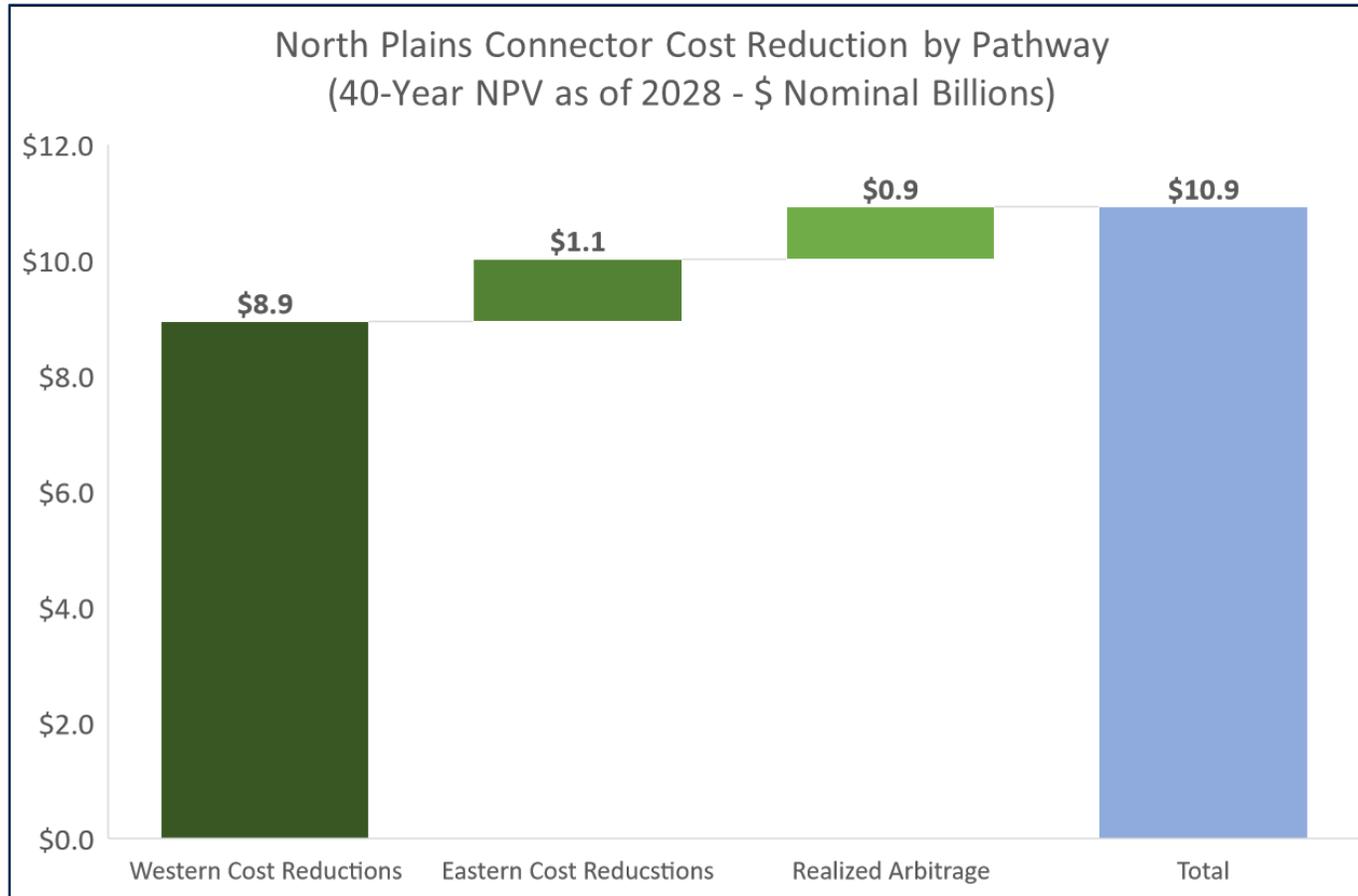
## NEPA/MEPA Coordinated Scoping and Environmental Review – Q3 2023

- Shared RFP to engage third party contractor
- One environmental report covering entire route

## North Dakota PSC – Corridor Certificate and Route Permit – Q1 2024

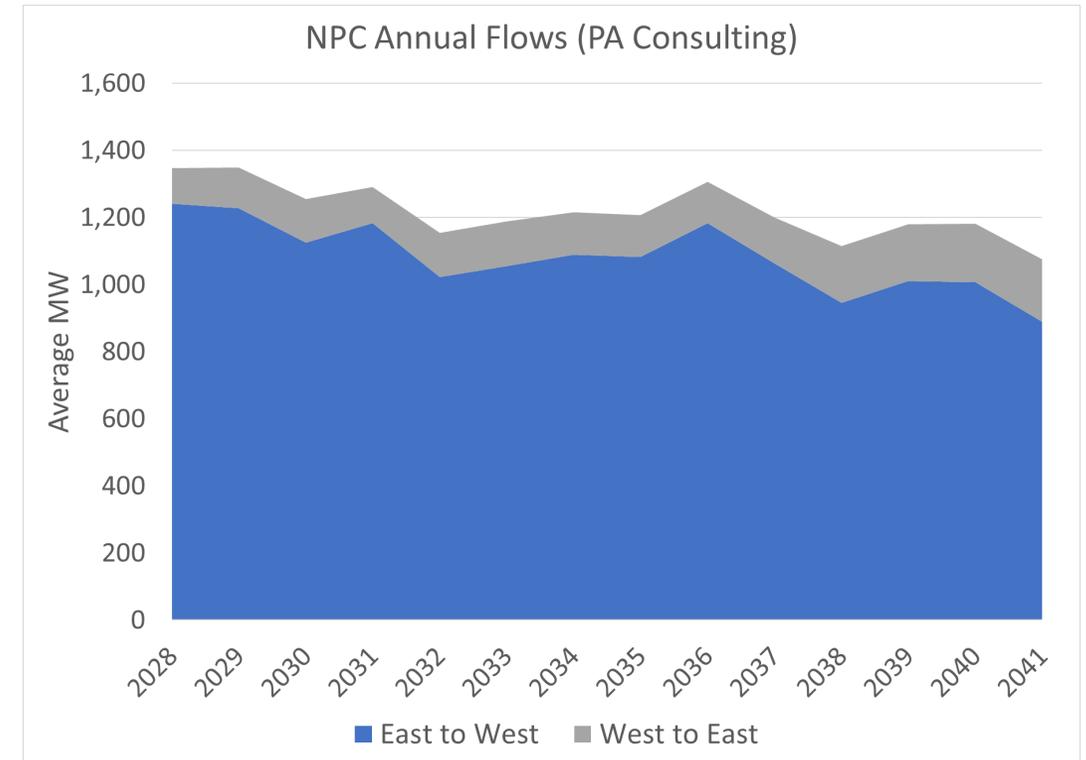
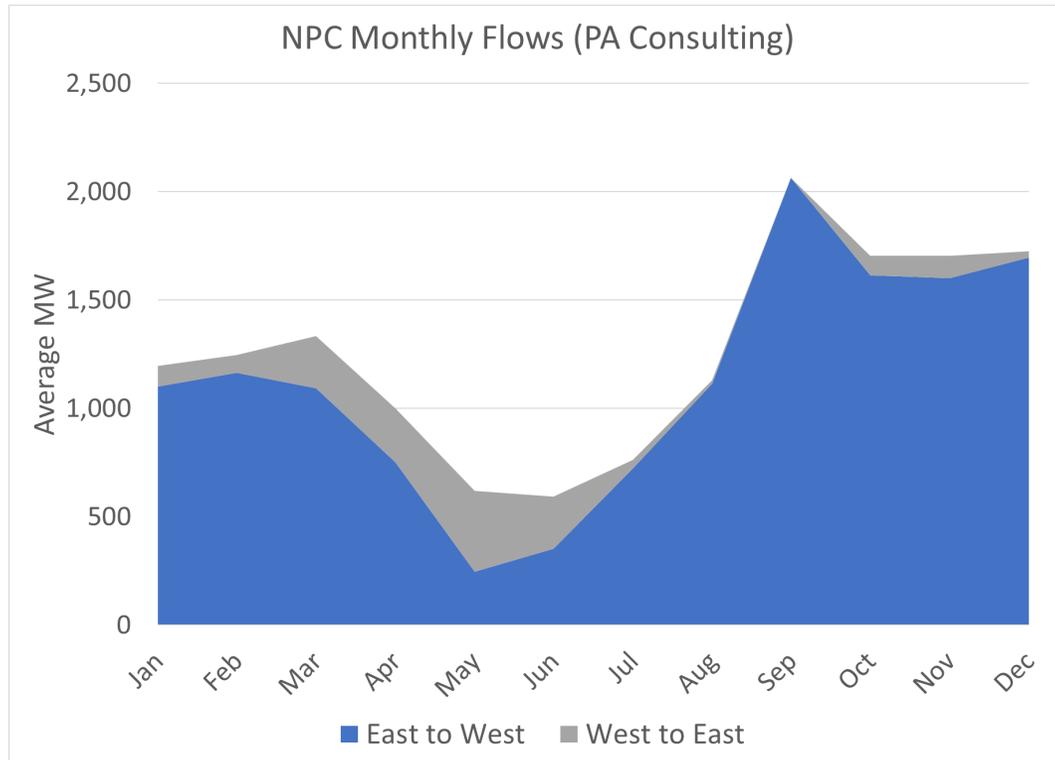
- Corridor broader than NEPA – will be covered
- No environmental review, but will hear from state game and fish
- County Conditional Use Permits required before filing – begin Q3 2023

# Production Cost Studies Demonstrate Significant – Results from PA Consulting study



- PA Consulting ran a production cost modelling study showing the project providing **nearly \$11 billion** in wholesale market savings.
- Additional savings from ancillary services, resiliency, more efficient capacity planning, and mitigating extreme events are not including in these calculations.

# Line flows have a distinct seasonal profile in PA's study



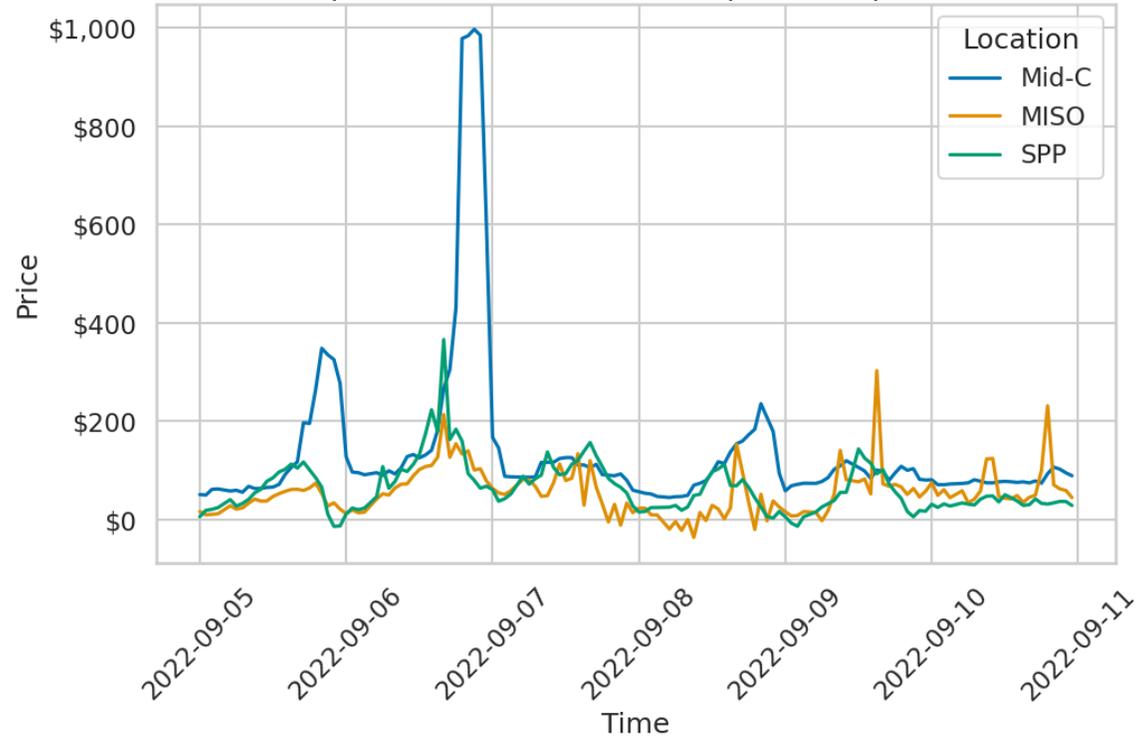
While the majority of the project's utilization is East to West, there is a noticeable seasonal profile that shows West to East utilization during the spring hydro runoff season

# Beyond the scope of the PA study, increased geographic breadth saves customers money during scarcity



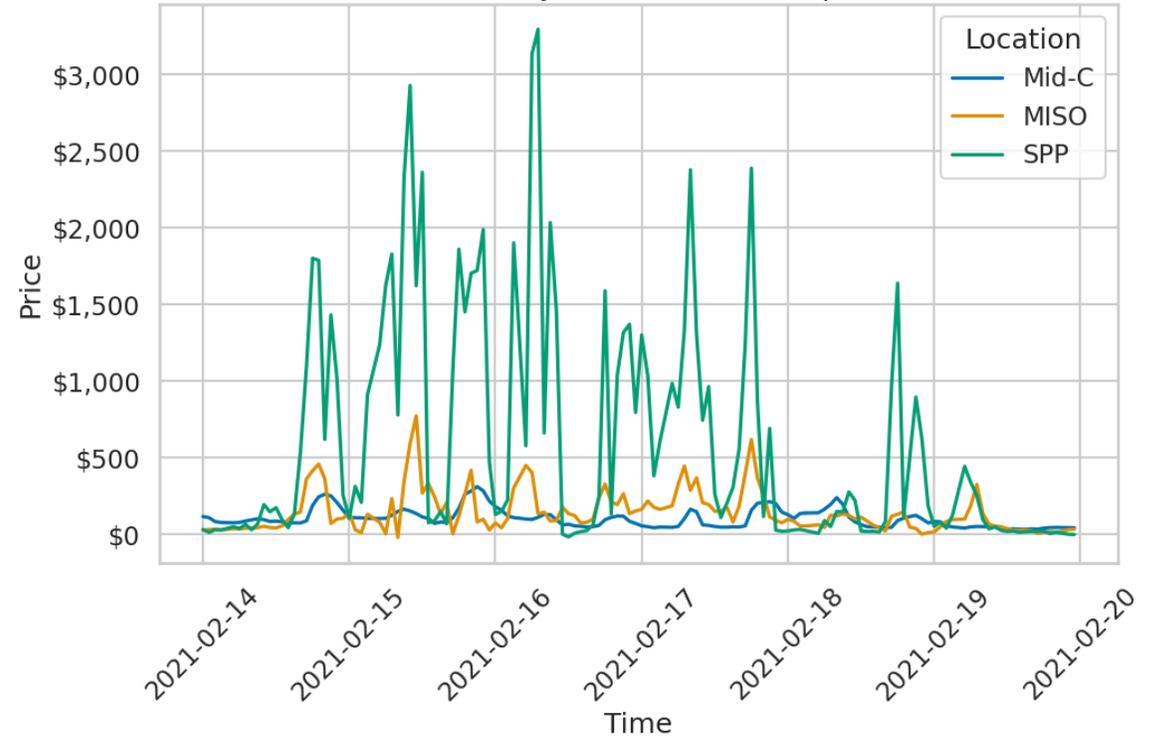
Extreme weather can occur over a large area, but is typically still regional, leading to distinct impacts on prices in SPP, MISO, and WECC.

September 2022 WECC Price Spikes Comparison



While West prices spiked during the September 2022 heat wave, SPP and MISO prices were unaffected.

2021 February Winter Storm Comparison



When MISO and SPP prices spiked due to gas prices and high demand during Winter Storm Uri, the West was largely unaffected.



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[linkedin.com/company/grid-united](https://linkedin.com/company/grid-united)



[info@gridunited.com](mailto:info@gridunited.com)