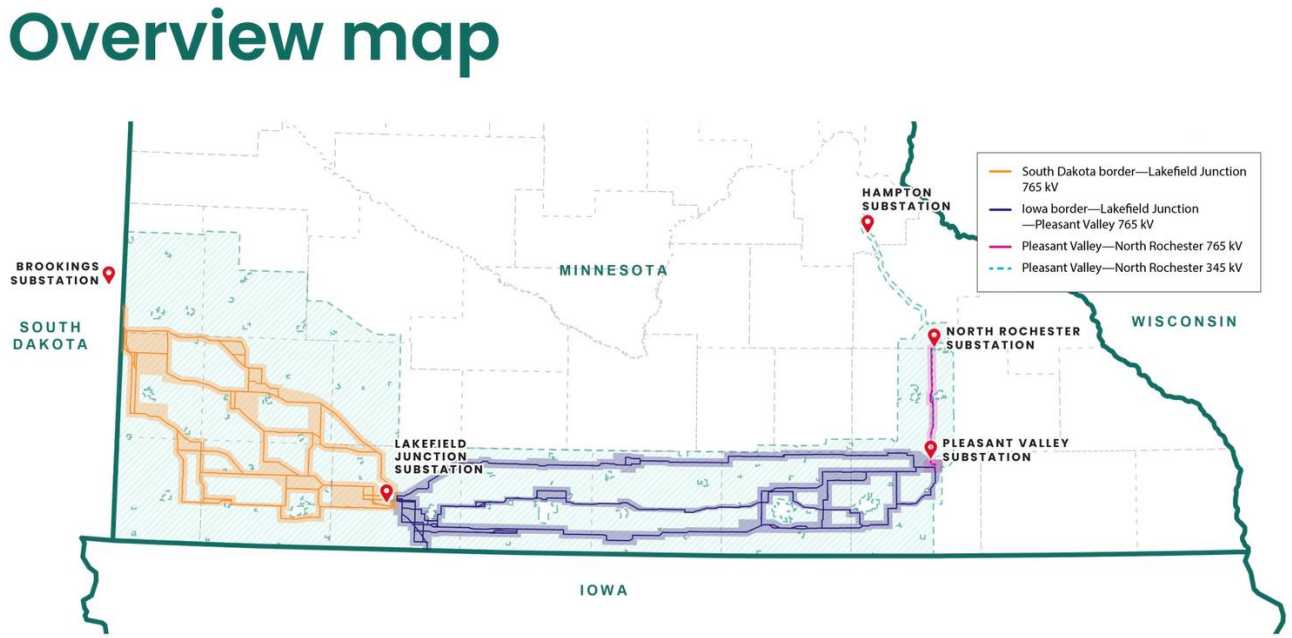
5.8.2026 - Project Update

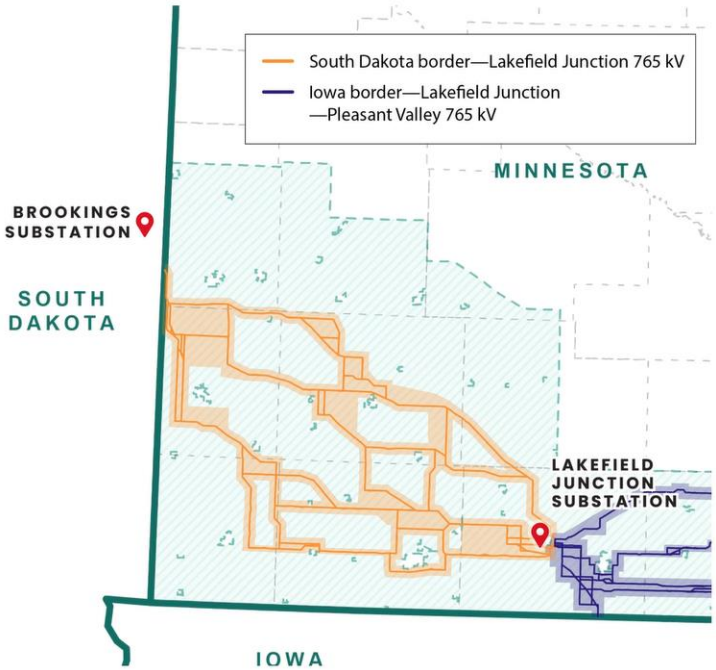
Lead Dan Lesher - GRE

- No preferred routes yet
- ROW management essentially the same
- Large laydown areas



Total estimated 130-160 miles - A majority was desktop analysis

South Dakota border – Lakefield Junction



BWSR Conservation Policy (NEW Process - RIMM or CRP or FSA)

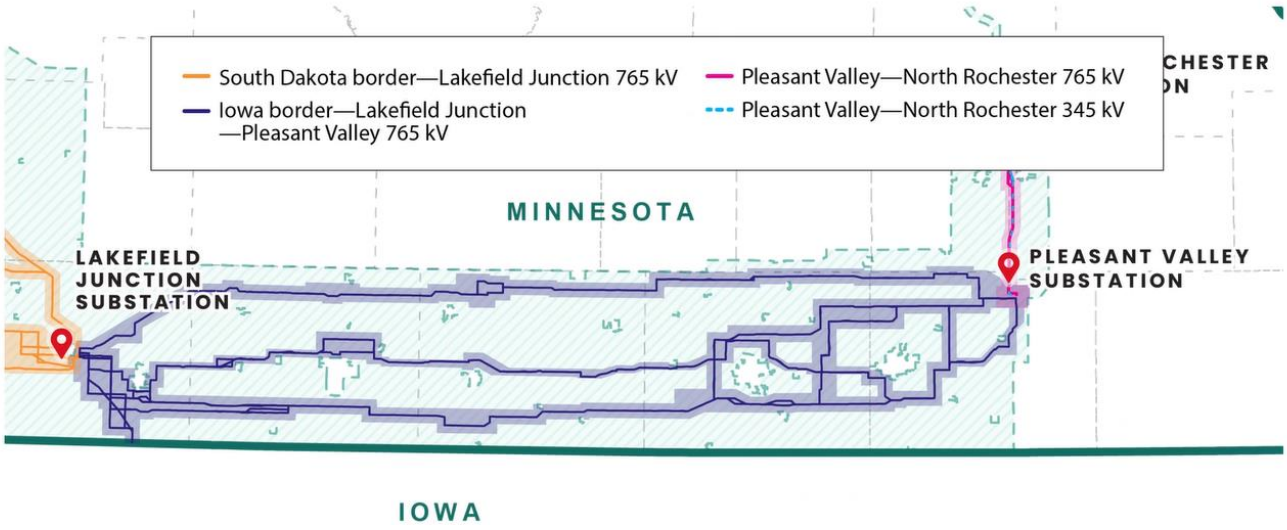
Routing Goals and Opportunities

- Develop routes that meet Minnesota routing guidelines and are cost effective
- Minimize impacts on landowners and farming practices
- Minimize impacts to wind and solar projects
- Minimize impacts of sensitive habitats and natural resources
- Minimized length – minimizing overall impacts to the built and natural environment
- Develop an I-90 route to address comments from MPUC

Constraints

- Avoid Lake Benton and Lake Sheteck
- Avoid large chain of lakes running northwest to southeast
  - Talcot Lake (Talcot Lake WMA)
  - Heron Lake (Heron Lake WMA)
  - South Heron Lake
  - Timber Lake (Timber Lake WMA)
- Avoid culturally sensitive areas
  - Pipestone National Monument
  - Hole-In Mountain (WMA)
- Avoid State Parks
  - Split Rock Creek State Park
  - Blue Mounds State Park
  - Lake Shetek State Park

IA border – Lakefield Junction – Pleasant Valley



Routing Goals and Opportunities

- Develop routes that meet Minnesota routing guidelines and are cost effective
- Minimize impacts on landowners and farming practices
- Minimize impacts on sensitive habitats and natural resources
- Minimized length – minimizing overall impacts to the built and natural environment
- Develop an I-90 route to address comments from MPUC

Constraints

- Lakefield – Iowa
  - Avoided nearby MDNR lands and conservation easements – federal and state
  - Avoided crossing Des Moines River and sensitive habitat
- Lakefield – Pleasant Valley
  - Avoid airports, wind farms, and north-to south chains of lakes
  - Avoid LAWCON properties
  - Seek to avoid several WMAs
  - Wild Indigo Prairie Scientific and Natural Area west of Brownsdale (utility crossing exists southwest of Brownsdale)

I90 is truly difficult in some areas

Constraints:

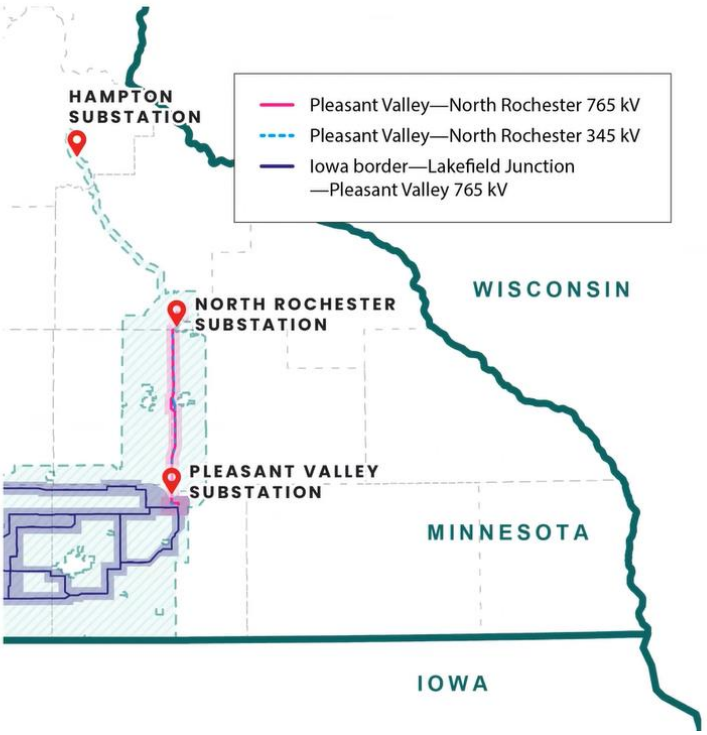
- Airport issues at multiple cities
- LANCON properties

- Lakes that they can't span
- SNA

County Park/LAWCON avoidance



Pleasant Valley – North Rochester



Routing Goals and Opportunities

- 345 kV line = 2032 ISD
- 765 kV line = 2034 ISD
- Utilize the existing Xcel 345/161 kV corridor for the rebuilt 345 kV line and the new 765 kV line
- Minimize impacts on residences along the existing corridor
- Potentially some realignments of the existing adjacent 161 kV line for optimized crossings near homes and at waterbodies.

Constraints/Considerations

- Existing transmission lines
- Development near Byron substation
- Solar development
- South Fork Zumbro River WMA
  - Crossed by existing corridor/not federally funded
- Karst features
- Calcareous fens

Route development and permit activities

- Route development is underway with open houses coming up in June 2026 and Fall 2026
- We anticipate filing route permit applications in the first quarter of 2027
- We expect a PUC decision on a final Route mid-late 2028

Route permits

(typically a 12-15-month process for each permit)

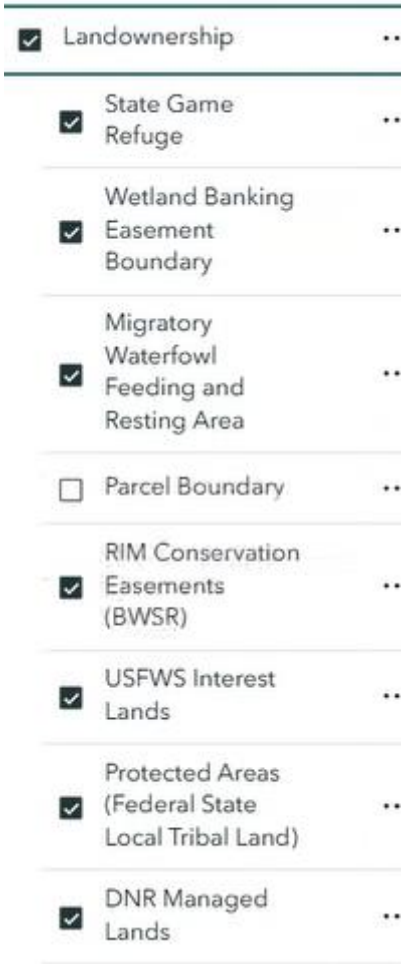


Engineering Considerations

- We are guided by Minnesota State routing criteria:
  - Follow existing corridors – Roads, section/property lines, transmission lines
- Important factors for 765 kV:
  - Distance of the route – approx. $6 million per mile
  - Keeping the line straight – Angles increase the size of the structures and cost significantly increases
  - Span length restrictions - Features which cannot be spanned must be avoided

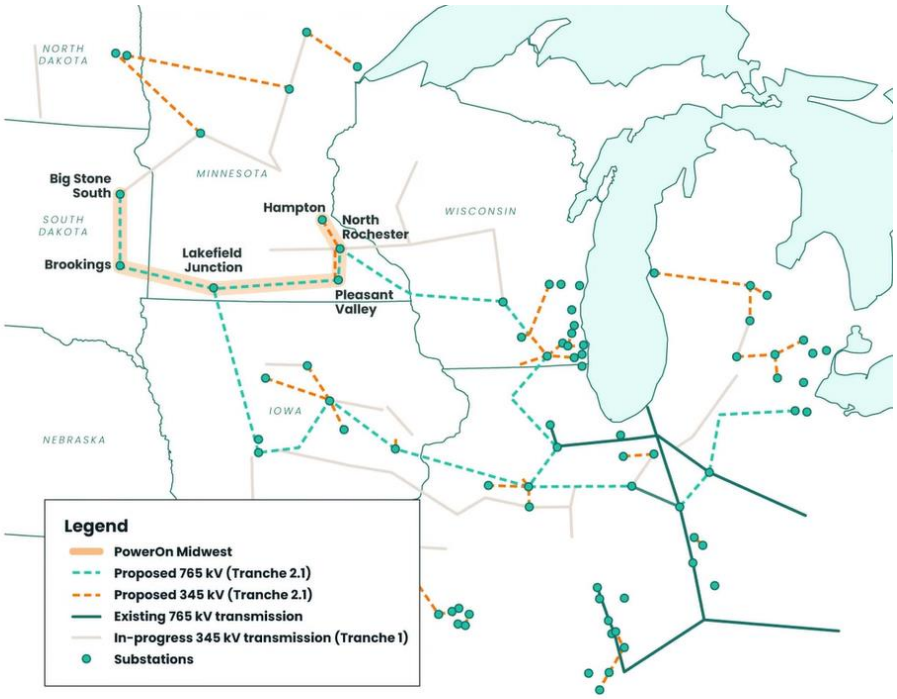
The Commission has identified I90 as preferred route

Layers searched for routing:



12.2.2025 - Project Introduction

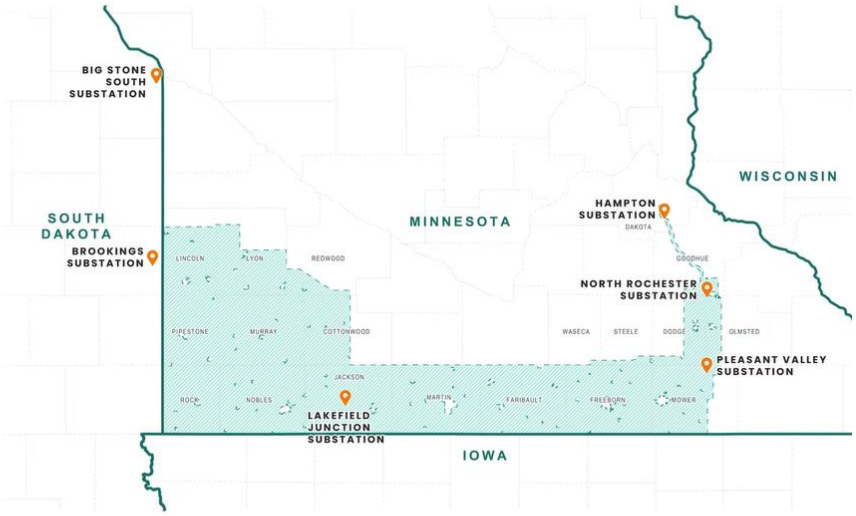
MISO Tranche 1 & 2.1



Proposed Notice Area

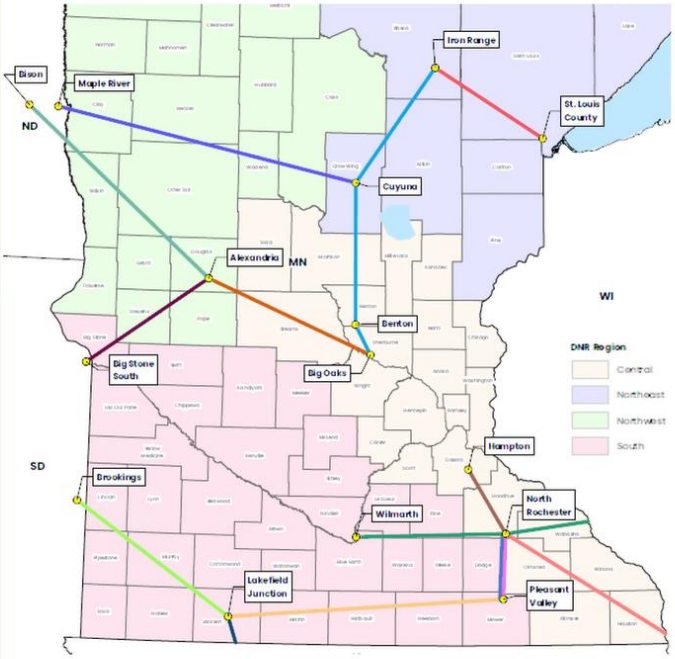
The Certificate of Need includes:

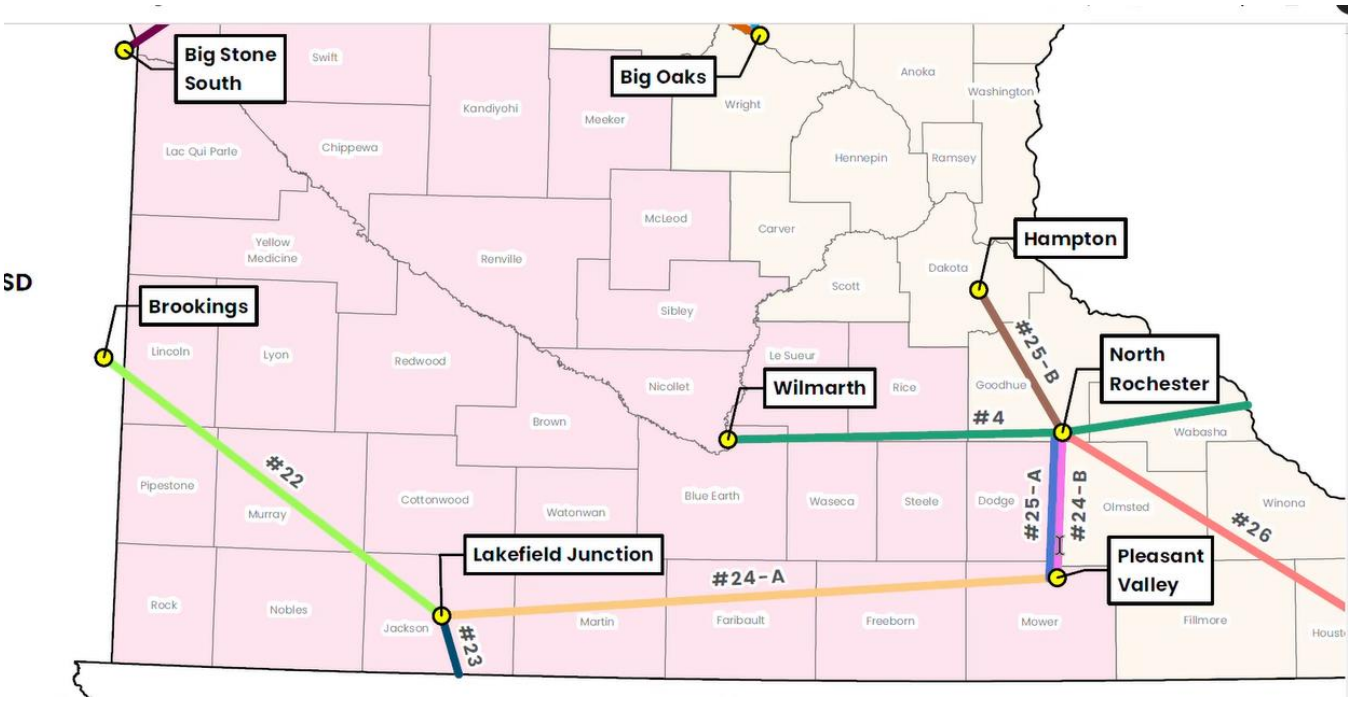
- Big Stone South-Brookings County-Lakefield Junction 765 kV **(MISO LRTP#22)**
- Lakefield Junction-MN/IA border 765 kV **(MISO LRTP#23)**
- Lakefield Junction-Pleasant Valley-North Rochester 765 kV **(MISO LRTP#24)**
- Pleasant Valley-North Rochester-Hampton 345 kV **(MISO LRTP#25)**



Hampton - North Rochester: Structures are already exiting and the line just needs to be hung

MISO's Long Range Transmission Planning Projects (Tranche 1 and Tranche 2.1) across Minnesota





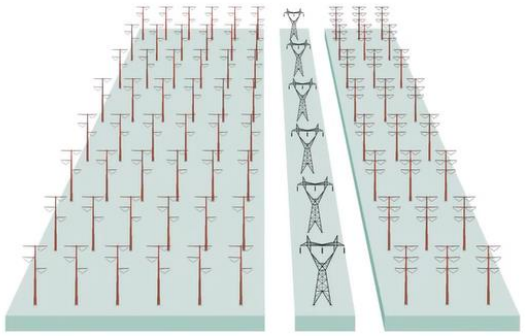
Technology

765 kV technology was identified in the planning process as the preferred solution for the region, presenting several advantages:

- Efficiently carries power over long distances
- Fewer transmission lines needed to carry the same amount of power
- Fewer structures reduce impact on land, communities, and the environment
- Resilient infrastructure that can consistently deliver power
- Provides backup power pathways

A 765 kV transmission line can carry as much power as:

- **Six single circuit 345 kV lines**
- **Or three double circuit 345 kV lines**



345 kV
SIX SINGLE CIRCUIT TOWERS
(900 ft of total right-of-way)

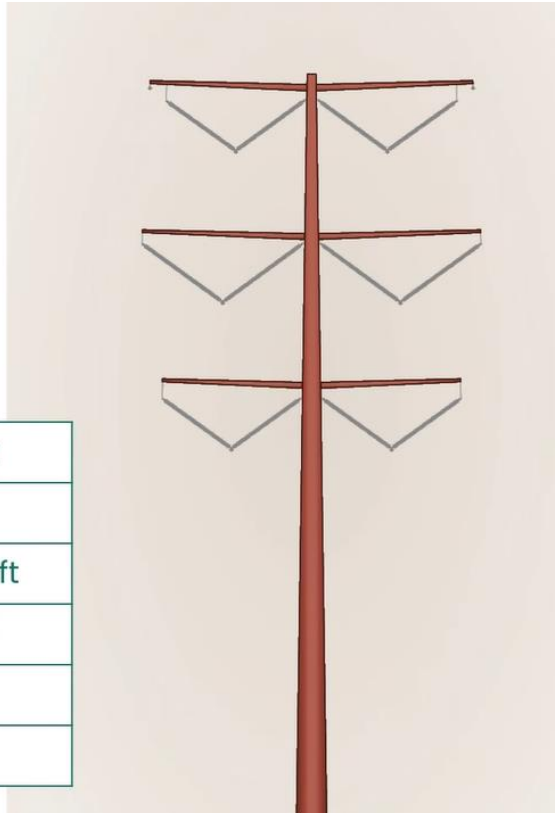
765 kV
ONE SINGLE CIRCUIT TOWER
(250 ft of total right-of-way)

345 kV
THREE DOUBLE CIRCUIT TOWERS
(450 ft of total right-of-way)

345 kV Structure

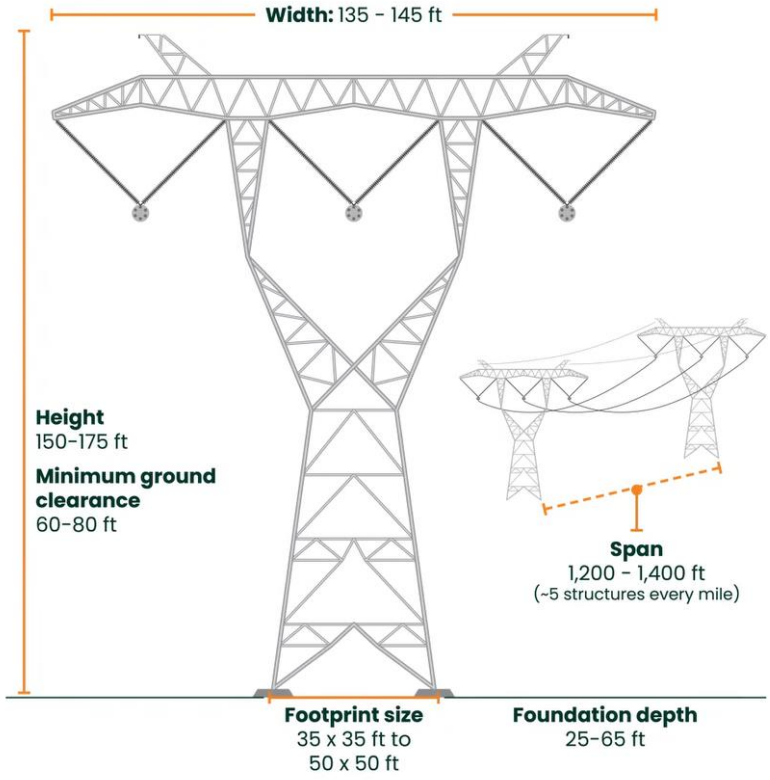
- Replace existing single-circuit structures (Pleasant Valley to North Rochester).
- Second circuit added to existing structures (North Rochester to Hampton).

Height:	90-160 ft
Width:	14-50 ft
Span:	800-1,200 ft
Minimum Ground Clearance:	26-38 ft
Foundation Depth:	30-40 ft
Right-of-way Width:	150 ft



765 kV Structure

- Typical structure shown



1 CN and 3 Route Permits will be done separately.

Preliminary schedule

