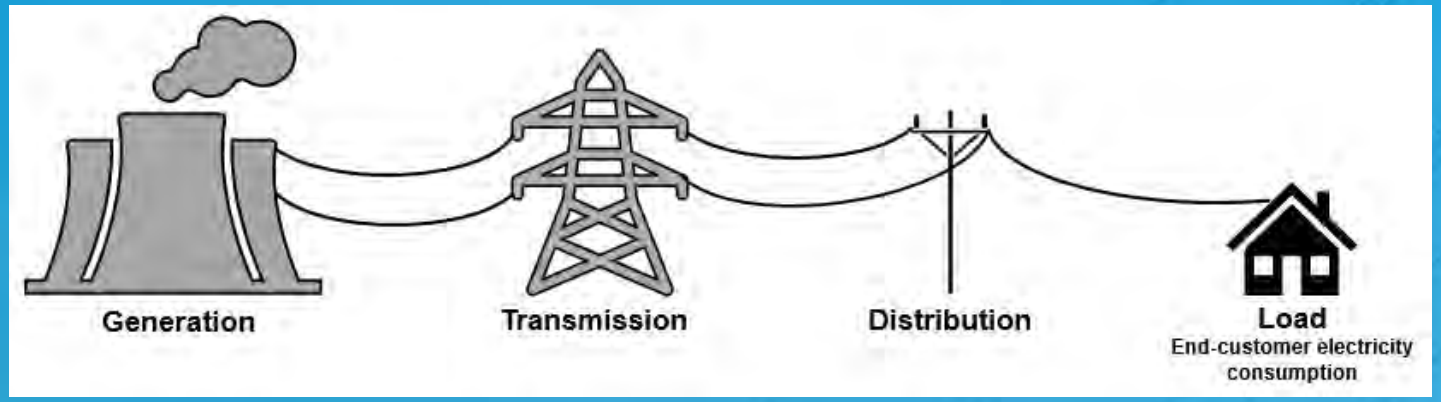
WSTC

October 17, 2023

Matt Prorok, Senior Policy Manager
Great Plains Institute
mprorok@gpisd.net

What is electric transmission?



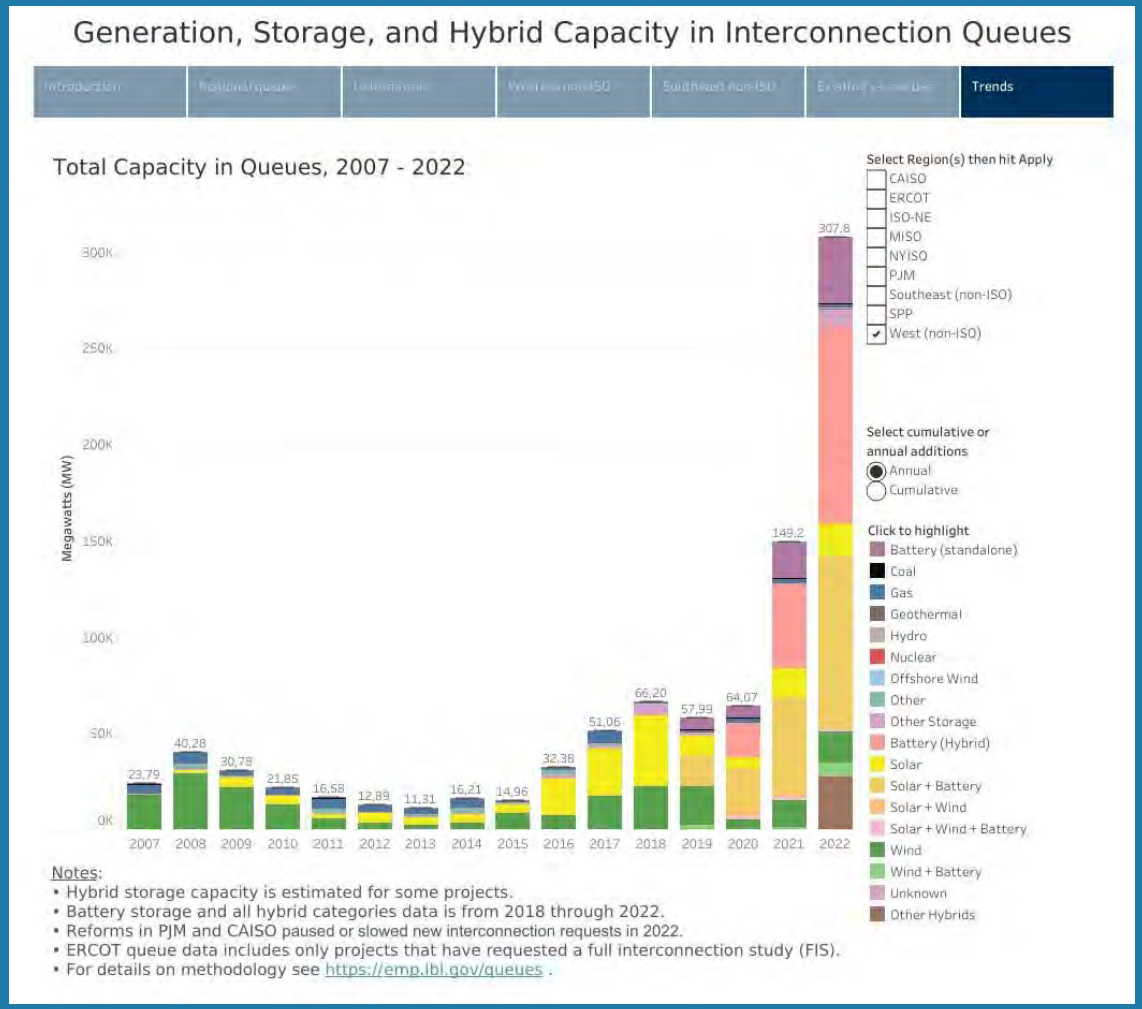
Source: Created by GPI, September 2022

GREAT PLAINS INSTITUTE
Better Energy. Better World.

Source: Wisconsin Department of Transportation. Personal communication with Robert Fasick. October 3, 2022

Preparing for Clean Energy Proliferation

- Bonneville Power Interconnection Queue
  - 87,500 MW
- Avista Interconnection Queue
  - 3,300 MW
- Mostly wind, solar, and storage

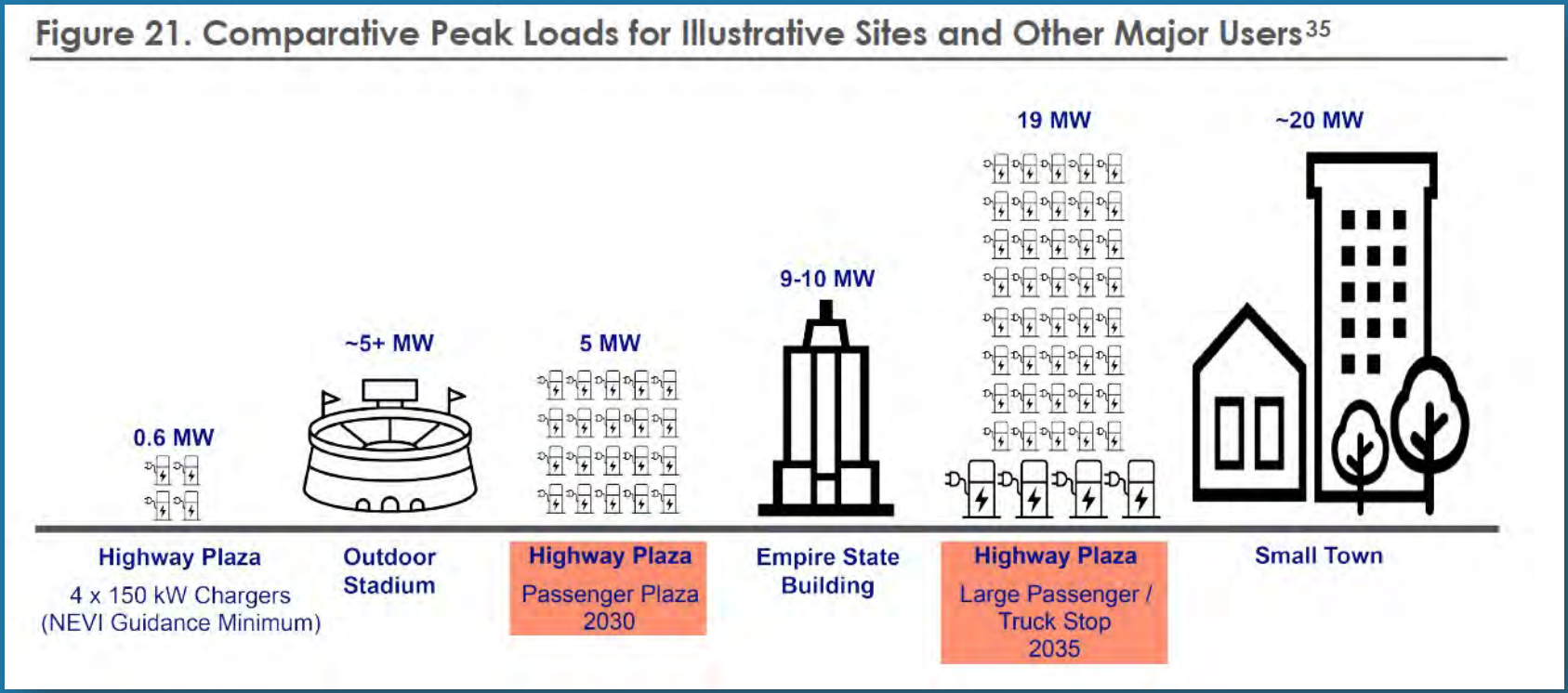


NEXTGEN HIGHWAYS

Preparing for the Future of Transportation

EV charging loads will become quite large

Plan for transmission-connected charging

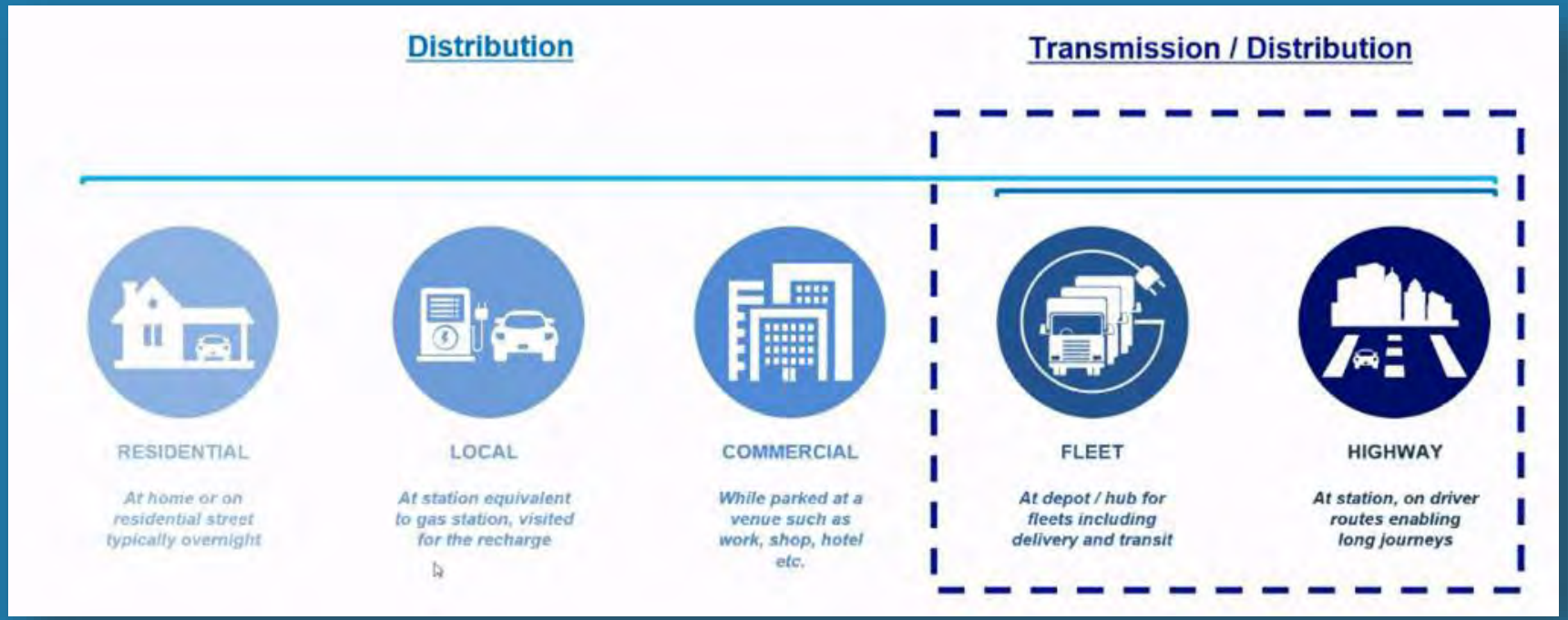


Source: National Grid, 'Electric Highways – White Paper.' November 2022.

NEXTGEN HIGHWAYS

New Transmission is Needed to Support Fleet & Highway Electrification

Why fleets and highways: The scope and scale of fleet & highway charging loads will require both T&D solutions



Source: National Grid. 'Full Speed Ahead: Enabling Future Fleet and Highway Electrification.' D-TECH + Series, July 22, 2021

NEXTGEN HIGHWAYS

NextGen Highways

- The United States is on the verge of making a generational investment in its infrastructure. The success or failure of this investment will determine whether this country can remain economically competitive in the global economy over the next few decades.
- Coordinated, proactive and holistic planning will be key to that success. NextGen Highways promotes this coordination by reimagining highways as infrastructure corridors where electric and communications infrastructure are strategically and safely co-located in the highway right-of-way (ROW).

NEXTGEN HIGHWAYS


Reimaging highways as infrastructure corridors to meet society’s needs
NEXTGEN HIGHWAYS

NextGen Highways are highways with the strategic co-location of:

- electric transmission lines
- ZEV charging/fueling infrastructure
- fiber, 5G, and other communications infrastructure

As discussed in this white paper

NEXTGEN HIGHWAYS

Problem Statements

- **Utilities/transmission providers do not consider highway ROW for transmission siting**
- **State DOTs are protective of 'their' ROW**
- **State law and/or DOT policy may prohibit co-location**
- **Utilities and state DOTs typically do not collaborate**
- **HVDC transmission is not widely utilized; concern of the lesser-known**
- **RTOs typically do not examine DC transmission as a solution**

NEXTGEN HIGHWAYS

NextGen Highways Goal:

Collaborate to remove barriers to the co-location of energy and communications infrastructure in highway and interstate rights-of-way

NEXTGEN HIGHWAYS

Prior Work

- Completed Feasibility Study with Minnesota Department of Transportation (2022)
  - Transmission can be sited in Interstate and highway ROW
  - Wisconsin has developed a playbook for successfully siting transmission in ROW
  - Buried HVDC transmission can be cost-effective.
- The State of Washington's Energy Facility Site Evaluation Council (EFSEC), Transmission Corridors Work Group (TCWG) Final Report (August 2022)
  - Explore opportunities to use transportation rights-of-way for co-locating new transmission lines

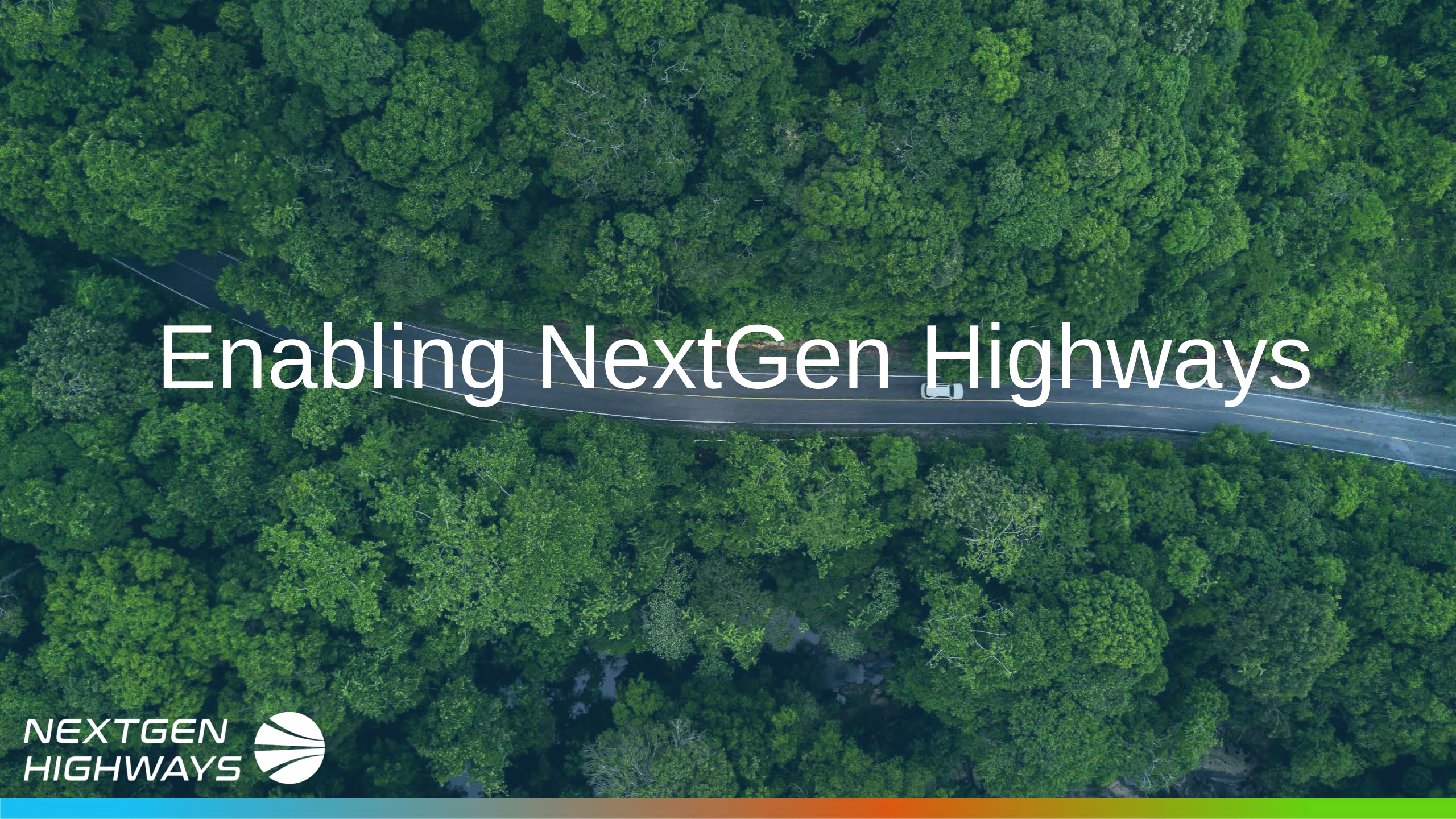
NEXTGEN HIGHWAYS

Prior Work

- FHWA Peer Exchanges examining NextGen Highways
  - Washington state (July 2023)
  - Minnesota (July 2022)
- Presented NextGen Highways to Minnesota Public Utilities Commission (2022)
  - Commissioners asked DOT to further study ability to site overhead transmission in highway ROW in Minnesota
- State of Minnesota's Climate Action Framework
  - Report notes that Minnesota Department of Transportation will explore the opportunities and challenges of co-locating transmission in highway ROW

Key Objectives in Washington

- State Coalition Convening
- Public opinion research
- Development of strategy to encourage policy on transmission siting prioritization
- Advocate for consideration of co-locating transmission in highway right-of-way


Enabling NextGen Highways
NEXTGEN
HIGHWAYS

History of Utility Accommodation Interstates and Freeways

1. 1959: American Association of State Highway Officials (AASHO) policy
   ➔ No longitudinal occupations on Interstates; crossings allowed
2. 1969: AASHO policy – same as 1959, expanded to include freeways
3. 1989: AASHTO (formerly AASHO) allows longitudinal in special cases ('strictly controlled conditions')
4. 1996 Telecommunications Act signals major changes:
   ➔ Telecoms inquire about using Interstates and freeways for longitudinal fiber installations; state DOTs start allowing it

5. 2003 WisDOT changes its Utility Accommodation Policy (UAP) to allow longitudinal *electric transmission* in Interstates and freeways
6. April 27, 2021, FHWA memorandum, *"State DOTs Leveraging Alternative Uses of the Highway Right-of-Way Guidance"*

WisDOT = Wisconsin Department of Transportation

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WisDOT Playbook for Co-location

1. Existing Interstate, freeway, and railroad ROW are now priority corridors for new transmission development (2003 Wisconsin Act 89)
2. Updated WisDOT's Utility Accommodation Policy to facilitate the longitudinal installation of electric transmission in controlled-access highway ROW
3. Establish a cooperative agreement between WisDOT and the Public Service Commission (PSC)
4. When possible, utilities should utilize engineering firms with WisDOT highway design and construction expertise
5. Utilities should work with WisDOT to produce Constructability Reports

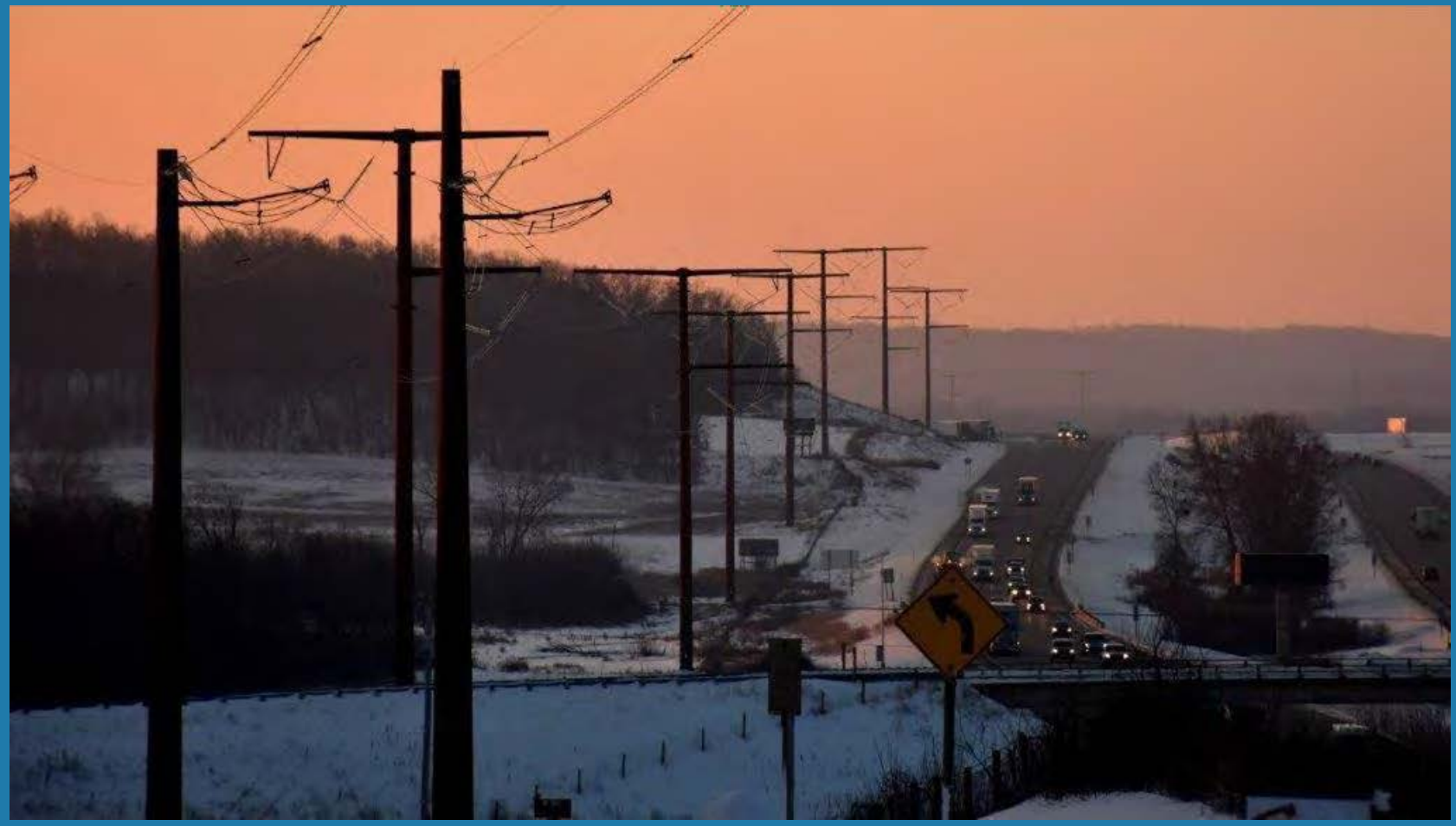
NEXTGEN HIGHWAYS

HVAC Transmission: Badger - Coulee Line Madison to Black River Falls to La Crosse, WI

108 (of 160) miles in Interstate ROW

8 counties

Permits issued for vegetation clearing and installation



Source: Wisconsin Department of Transportation. Personal communication with Robert Fasick. October 3, 2022

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Washington Policy Context

- Transmission co-location is allowed in highway ROW
- 'Net-zero' GHG emissions by 2050
- 100% carbon-free electricity generation by 2045
- New legislation to streamline renewables siting
- Transmission Corridors Work Group convened September 2021 - June of 2022
  - Final Report for the Governor.
  - Presentation by WSDOT on the challenges and opportunities of siting transmission lines along highway corridors.
- New legislation on transmission planning
- New legislation on environmental review for Tx suitability

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Opportunities for WSTC

- Leverage ongoing work across the state (EFSEC, utility Tx planning processes) to advance co-location opportunities
- Encourage further collaboration for industry and DOT
- Develop policy guidance for policy makers and state agencies
- Conduct a feasibility study

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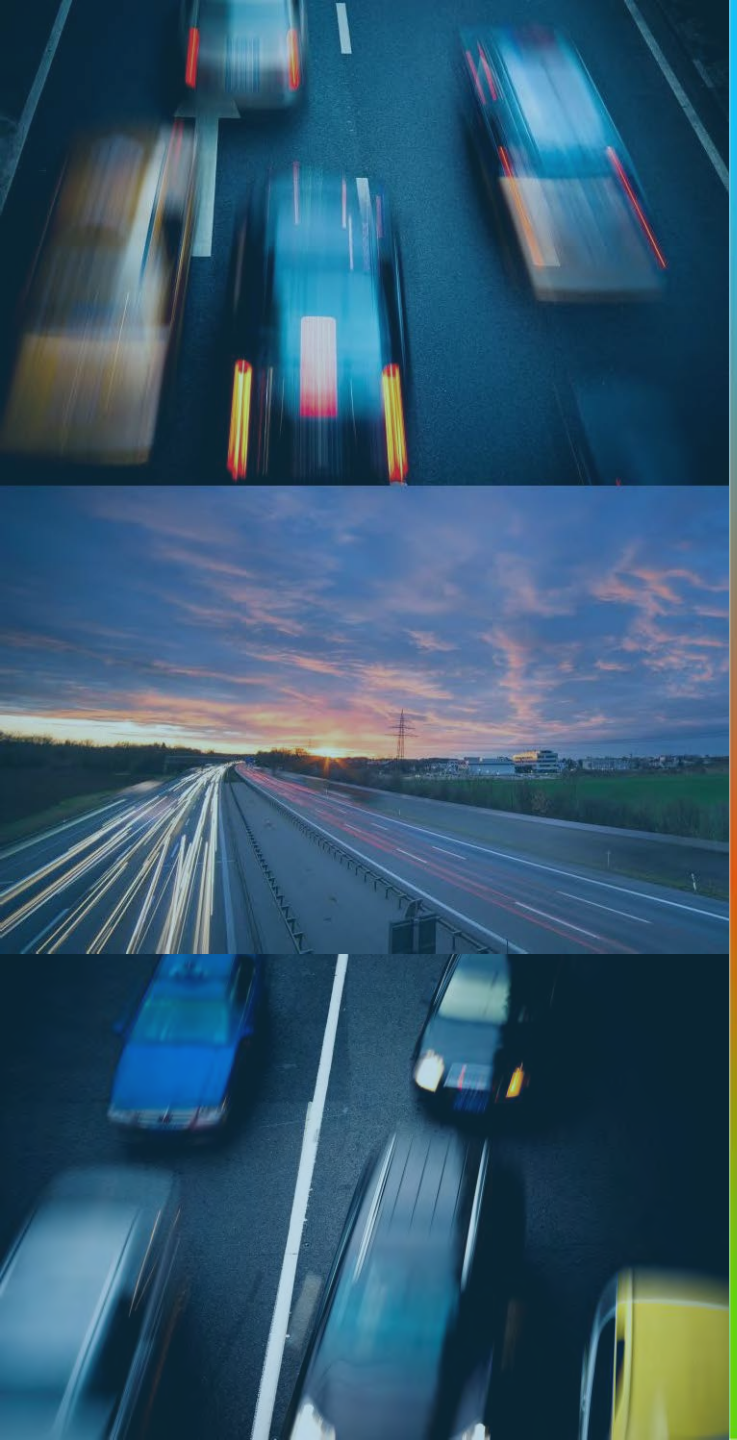
Thank you!

For more information, please check out our website (www.nextgenhighways.org) or send us an email (info@nextgenhighways.org)

Appendix

NEXTGEN HIGHWAYS



New Transmission Planning Legislation (SB 5165, 2023)

- Sec 1(new):
  - Recognizes and affirms the importance of expanding high voltage transmission capability to achieve the state's objectives and legal requirements
  - Build off the work of the transmission corridor working group's final report (Oct 19, 2022)
  - Identified needs:
    - Ability to deliver reliable, affordable, clean electricity from within WA and the broader region
    - Delivery of clean energy into central Puget Sound area
  - Expresses urgency for transmission planning and permitting (typically a 10 year process)

- Sec 2:
  - expands transmission planning requirements for state's utilities:
    - extends Tx planning horizon from 10 to 20 years,
    - requires planning to achieve state policies,
    - enables regional planning to meet state requirements
  - Emphasizes maximizing value of the existing grid and making strategic expansion investments

NEXTGEN HIGHWAYS

New Tx Environmental Review Legislation – (SB 5380, 2023)

- Requires the Energy Facility Site Evaluation Council to conduct a “nonproject environmental reviews of electrical transmission facilities”
- **Scope:**
  - probable, significant adverse environmental impacts in geographic areas that are **suitable for the electrical transmission facilities** with a nominal voltage of 230kV or greater.
  - **not** required to evaluate geographic areas that lack the characteristics necessary for electrical transmission facilities with a nominal voltage of 230kV or greater.

NEXTGEN HIGHWAYS