



Actions Speak Louder

Meeting Virginia's Energy Needs
Mecklenburg County, Feb. 14, 2022

Dominion Energy – A Focus on Core Values



Safety

Our highest priority is keeping our employees and communities safe



Ethics

Doing right and doing well are inseparable



Excellence

Striving for excellence in everything we do



Embrace Change

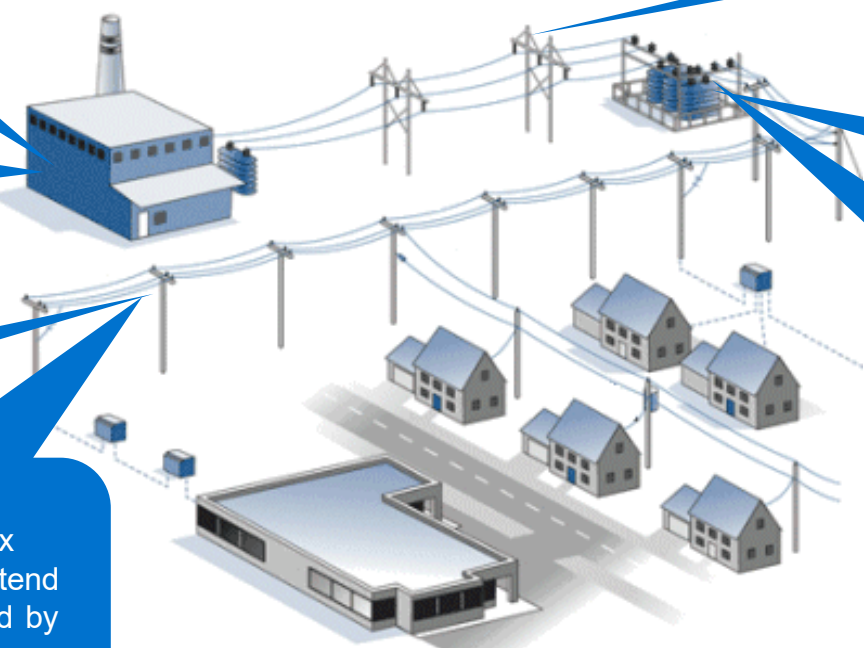
Changing the way we think about the today and tomorrow of our business



One Dominion Energy (Teamwork)

Innovative culture drives approach to clean energy and workforce opportunities

The Grid and Obligation to Serve

- 
- The diagram illustrates the power grid's structure. It starts with a power generation plant on the left, which connects to high-voltage transmission lines. These lines lead to a substation, which then branches into lower-voltage distribution lines that serve residential and commercial areas. Callout boxes provide details for each stage: Power Generation (1MW = ~200 homes), Transmission Lines (capacity and loss rules), Transmission to Distribution Substation (location and transformer count), and Distribution Lines (switching and capacity).
- Transmission Lines
 - Line “capacity” accounts for network flows
 - Limited by 300 MW Line Loss Rules

Power Generation
1MW = ~200 homes

Transmission to Distribution Substation

- Substations
- Ideally located near load centers
 - ~3-5 transformers
 - On ~5-10 acres
 - Limited by 300 MW Rule

Distribution Lines (Low Voltages)

- Distribution Lines
- Switch before fix
 - First option is to extend distribution – limited by available transformer capacity
 - Typical loads <30 MW

Key Regulatory Bodies



FERC – Exclusive jurisdiction to determine and regulate the reliability of the electric transmission grid

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

NERC – Regulatory authority to develop and enforce the mandatory reliability standards – criteria, data and methodology to evaluate and ensure the reliability of the bulk power system in North America



PJM – Regional transmission organization (RTO) that coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia; Virginia law mandates Dominion Energy's membership

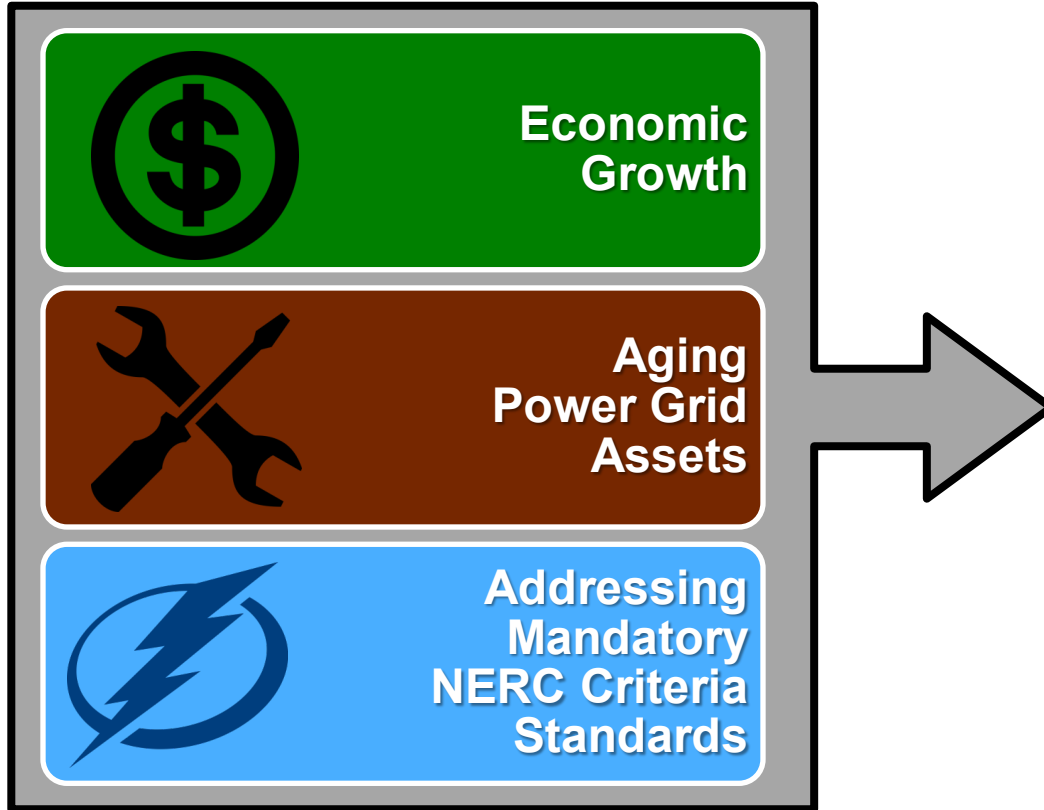


SCC – Regulates Virginia public utility facilities, retail rates and service including transmission line need and routing; issues certificates of public convenience and necessity (typically electric transmission lines equal to or greater than 138 kV)

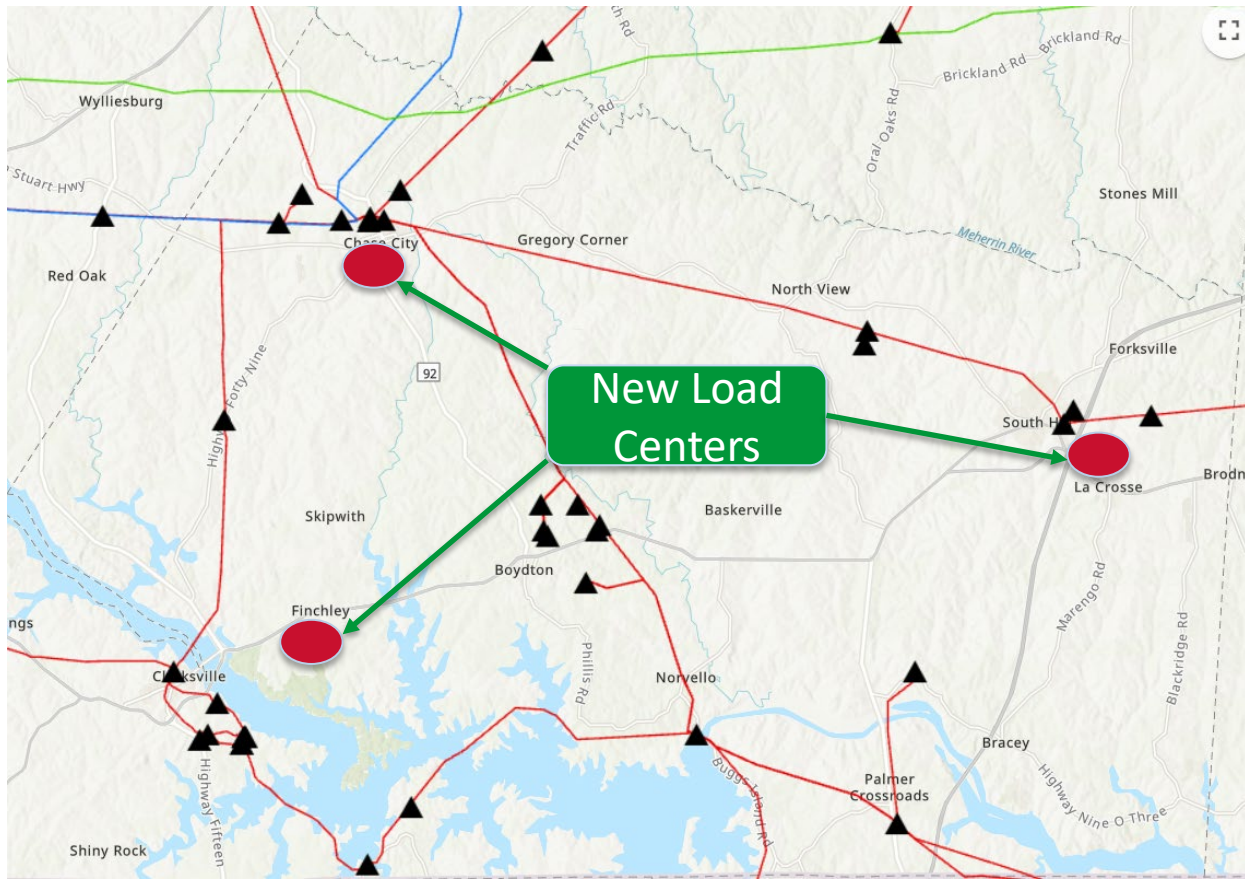
**Cities
and Counties**

Local Governments – Regulate local land use (substations); typically electric transmission lines equal to or less than 138 kV

Forces Driving Infrastructure Need



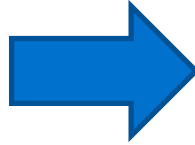
Current System



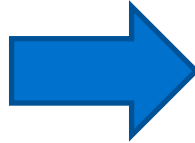
Understanding Voltage

The high-voltage transmission system makes it possible to transport large amounts of electricity efficiently over long distances.

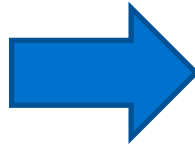
500 kilovolts (kV)



230 kilovolts (kV)

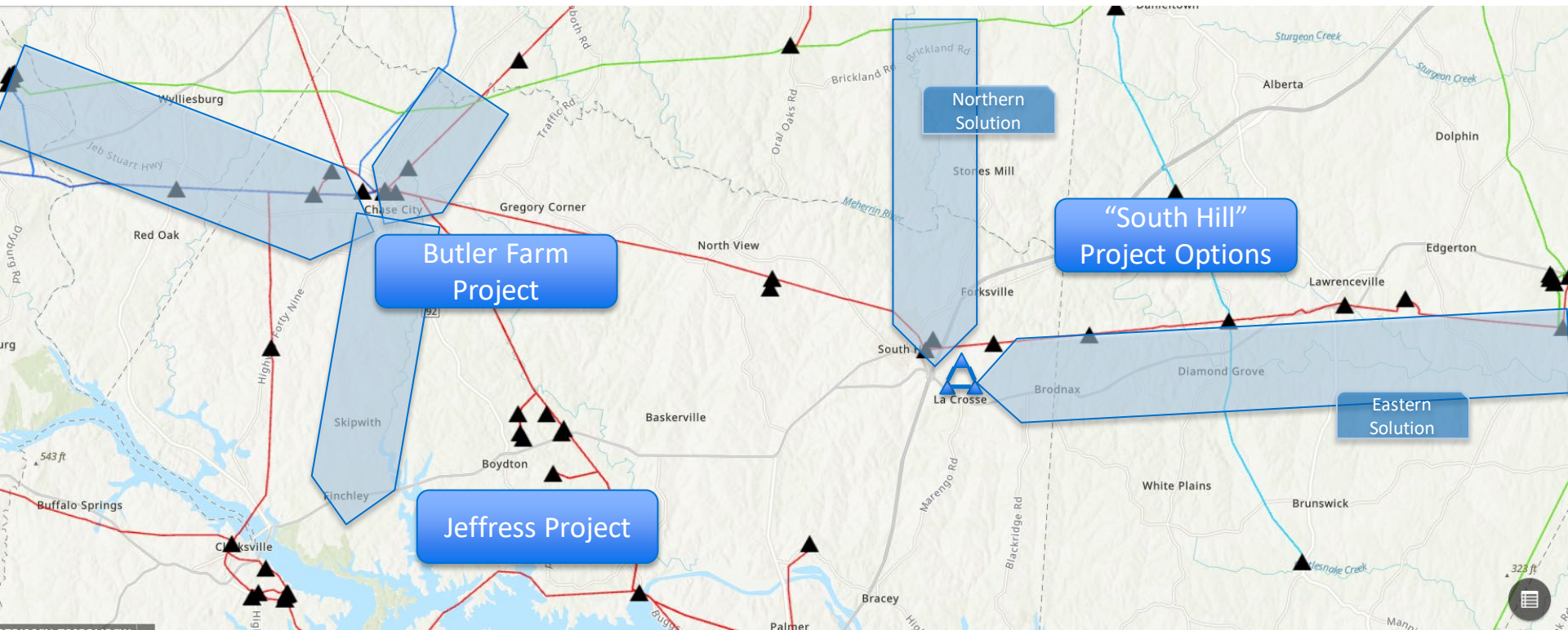


115 kilovolts (kV)



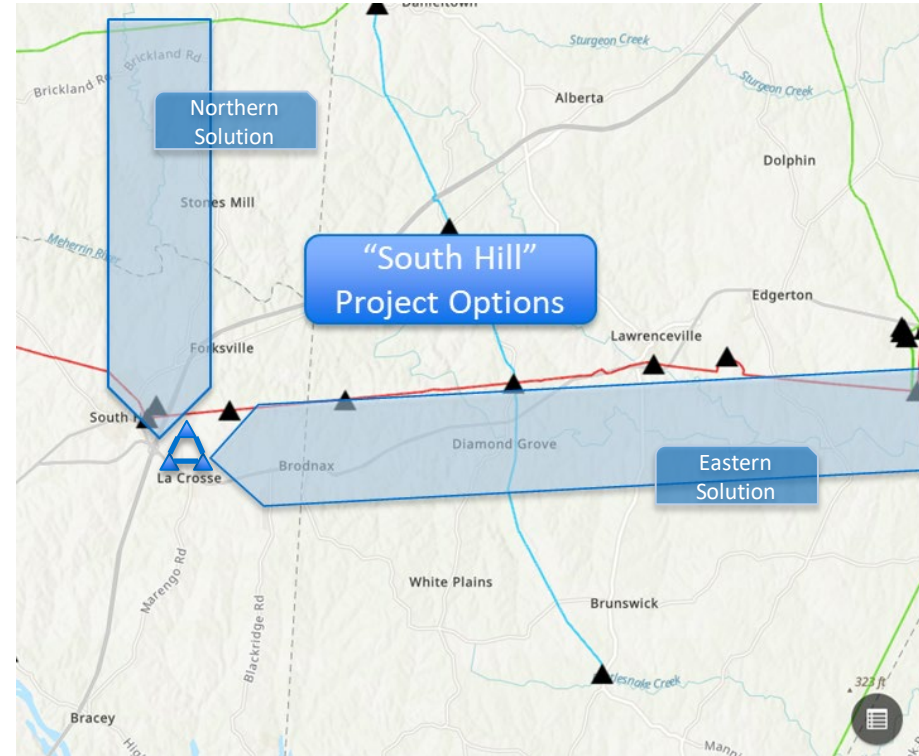
(Atlantic St.)

Overview: Mecklenburg Infrastructure Enhancements



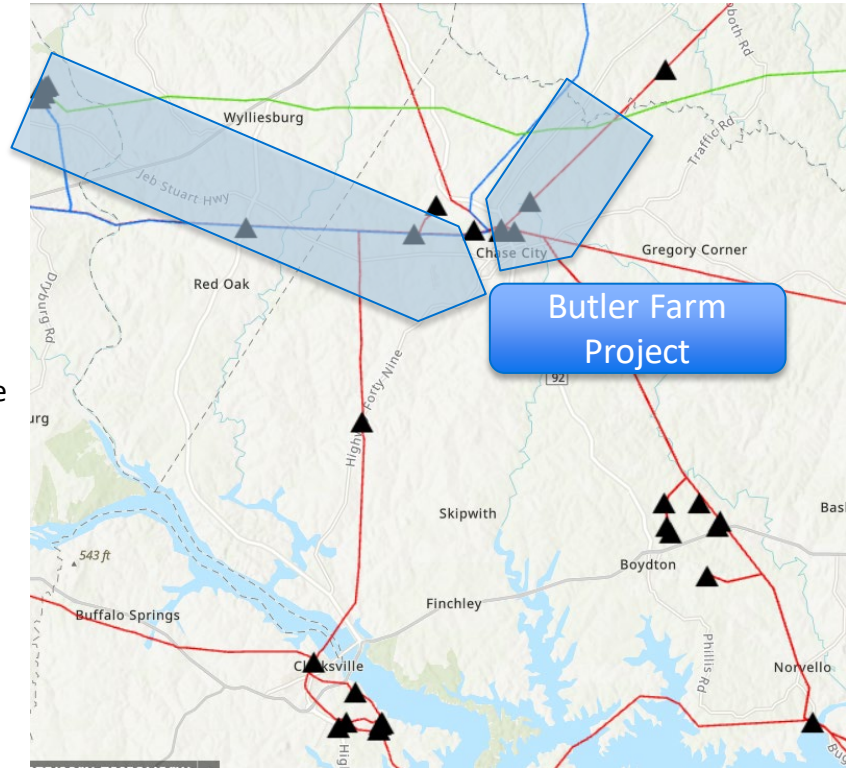
High level Project Overview: South Hill

- **Counties involved:** Brunswick, Mecklenburg, Lunenburg counties
- **Project Scope**
 - Build two single 230 kV transmission lines parallel to one another on shared right of way into the South Hill/La Crosse areas
 - Build three substations in South Hill/La Crosse
 - build a connecting transmission line loop between the three proposed substations
 - Substations on data center property
- **Electrical Options** (only building one of these options at this time-multiple routes within each option)
 - **Eastern Solution:** expand the existing Heritage Substation (Brunswick County) and construct approximately 25 miles of new transmission line corridor partially collocated with Dominion's existing 115 kV right of way
 - **Northern Solution:** Build a new substation along Dominion's existing 500 kV line (Lunenburg County) and construct approximately 10 miles of new right of way
- **ROW needs**
 - ~120' wide



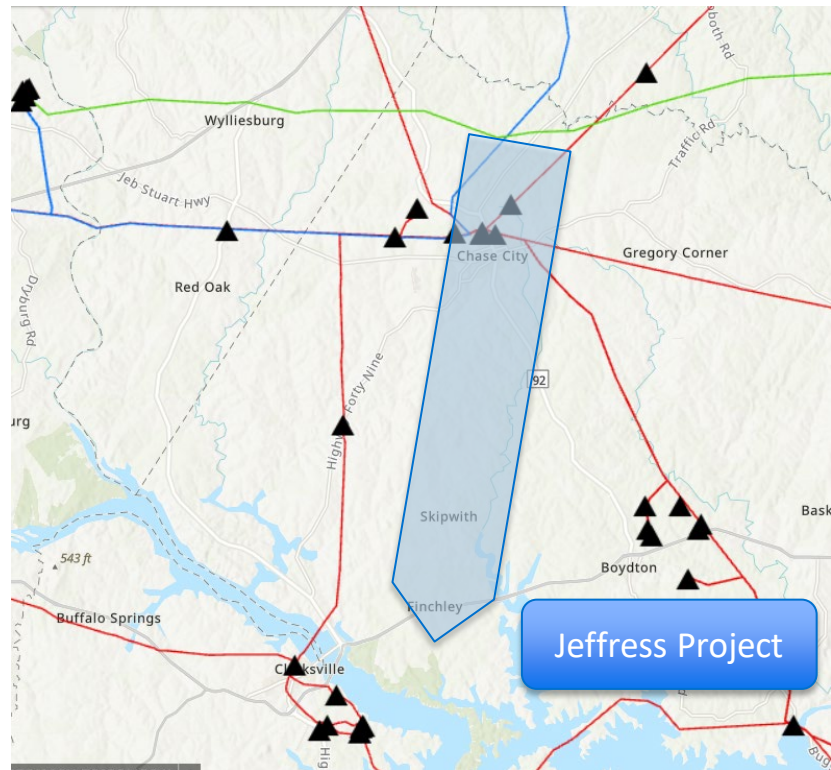
High level Project Overview: Butler Farm

- **Counties involved:** Halifax, Charlotte, Mecklenburg
- **Project Goal Scope:**
 - **Clover-Butler Farm:** Build approximately 18 miles of new single-circuit 230 kV transmission line from the existing Clover Substation to the Proposed Butler Farm Substation.
 - ROW Needs: ~100' wide
 - **Finneywood - Butler Farm:** Build approximately 7 miles of new single-circuit 230 kV transmission line right of way between the proposed Butler Farm Substation and the proposed Finneywood 500kV/230kV Substation.
 - ROW Needs: ~120' wide
 - An additional 230kV transmission line may be needed in this corridor in the future.



High Level Project Overview: Jeffress

- **Counties Involved:** Mecklenburg County
- **Project Goal Scope:**
 - Build approximately 18 miles of two single-circuit 230 kV transmission lines paralleling one another on shared right of way from new Finneywood Substation to the proposed Jeffress Substation.
- **ROW needs**
 - ~120' wide
- **Bridging Power Plan:**
 - Build two single-circuit 115 kV transmission lines from existing 115 kV line



Routing Considerations

Foundational Principles

- Process always begins with review of existing rights of way
- Respect the land use of the property owners
- Co-locate with other infrastructure, where appropriate
- Stay to property boundaries
- Minimize impacts to human, environmental, cultural and historical concerns

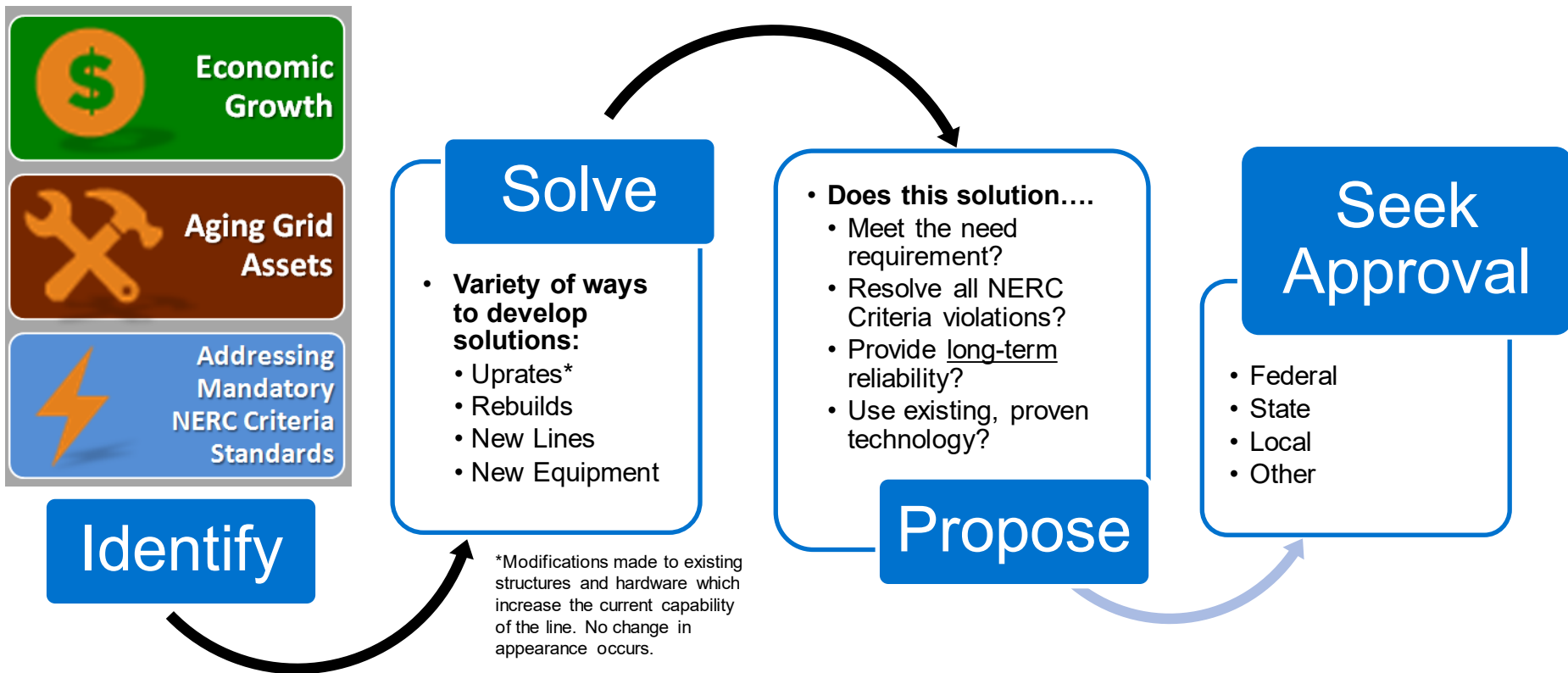


Routing Considerations

- Wetlands and watercourse crossings
- Conservation lands – such as Virginia Outdoor Foundation, National Park Service, Department of Conservation and Recreation, and county-owned property
- Threatened and endangered species
- Cultural, historical and Tribal resources
- Neighborhoods; Environmental Justice
- Public gathering spaces such as schools, churches and parks



Modeling Required for System Reliability



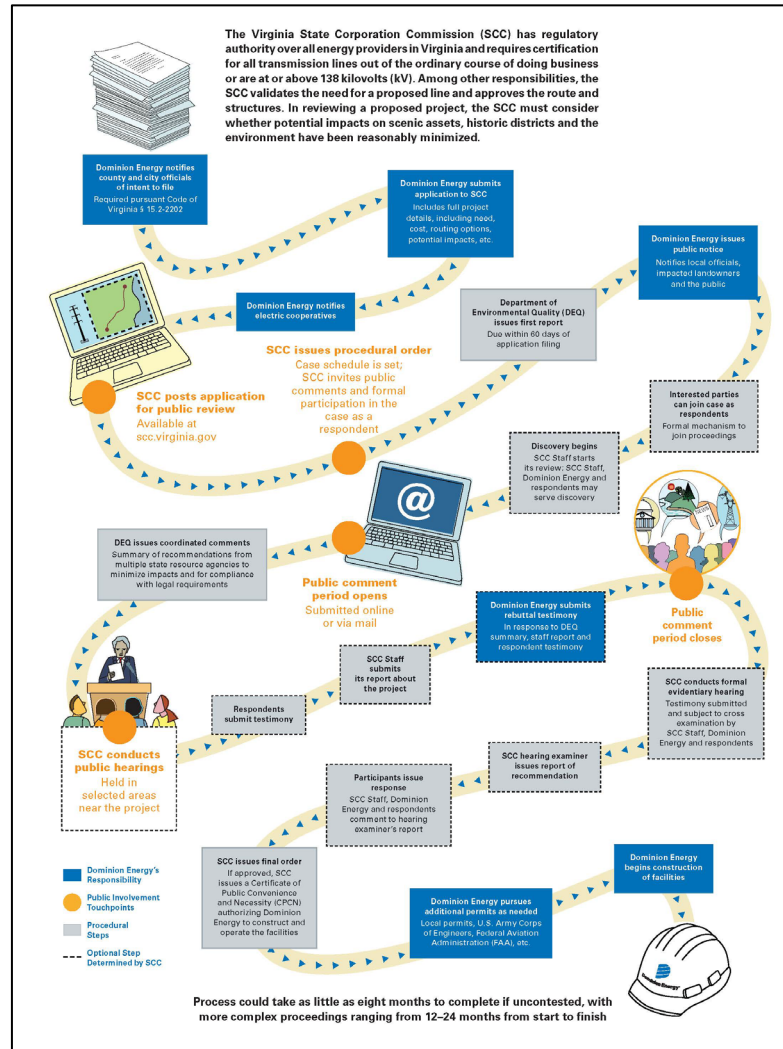
Permitting

- **Virginia State Corporation Commission:** Certificate of Public Convenience and Necessity
 - Alternatives Analysis
 - Routing Study
 - Department of Environmental Quality Supplement and coordinated review
- **U.S. Army Corps of Engineers**
- **Other Agency Review**
 - Department of Environmental Quality (DEQ)
 - Virginia Marine Resources Commission (VMRC)
 - Virginia Department of Transportation (VDOT)
- **Local Permitting Requirements**
 - Substations on Data Center property/part of developer's site plans
 - New Finneywood 500kV/230kV Substation
 - Possible new 500kV/230kV for South Hill Northern electrical solution

Electric Transmission Line Planning and Public Engagement Process

Virginia State Corporation Commission Application

- Opportunities for public involvement throughout the process, including public hearings
- Process could take as little as eight months to complete if uncontested, with more complex proceedings ranging from 12–24 months from start to finish



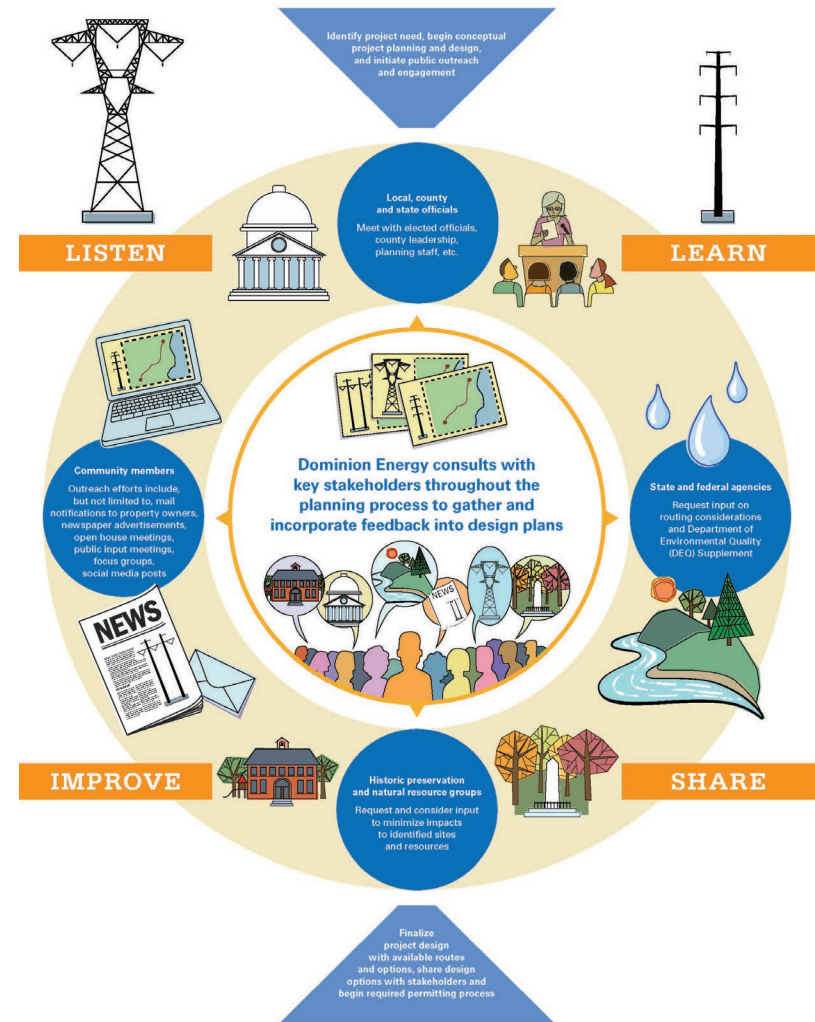
Electric Transmission Line Planning and Approval Process

Relationships

- Value what the community values
- Seek mutual benefits

Trust

- Discussion, connection and empathy
- Compromise has to work both ways



GeoVoice

- Review the study areas
- Interactive mapping tool
- Evolves as routing options become available and are refined
- Add comments, provide input or share an insight on the location of important personal concerns or natural and historical resources.
- Track the projects as it develops and receive updates.

Example project

Legend

- Route Option 1 (Proposed Route)
- Route Option 2
- Route Option 3
- Dark Road Route Variation
- Line 3585 Route Variation
- Hybrid Route Option
- Existing Right-Of-Way
- Proposed Right-Of-Way
- Photo Simulation
- Heavy Property
- State Military Reservation (SMR)
- Proposed SMR Landing Site
- Proposed Fattness Substation Expansion
- Existing Fattness Substation
- Proposed Landing Site to Harpers Road Substation
- New Former Southeastern Parkway and Greenbelt
- Parcel Boundary
- Recreational and Historical Public Areas
- Land Use Overlay
- Chesapeake Regional Airport
- Harbor Tract (Idle)
- Tractor Supply Co.
- Harris Teeter
- Balchones Dog Ranch
- Cavalier Wildlife Management
- Chesapeake National Wildlife Refuge
- Paradise Creek Nature Park
- Lower's Home Improvement
- The Home Depot
- Walmart Neighborhood Market
- Chrysler Museum
- Norfolk State University
- Norfolk Naval Shipyard
- Regent University
- Kroger
- MT Trashmore Park
- Lynnhaven Mall
- Arms Club
- Great Neck Park
- First Landing State Park
- North End Beaches
- Seaside Market
- Sandbridge Beach
- East Coast Christian Training
- Cygnus Lumber and Millworks
- Military Aviation Museum
- Back Bay National Wildlife Refuge

Add Your Comments

I am a If Other, or Name of Organization Phone

Can you tell us the nature of your comment? *Limit to 3 boxes per submittal*

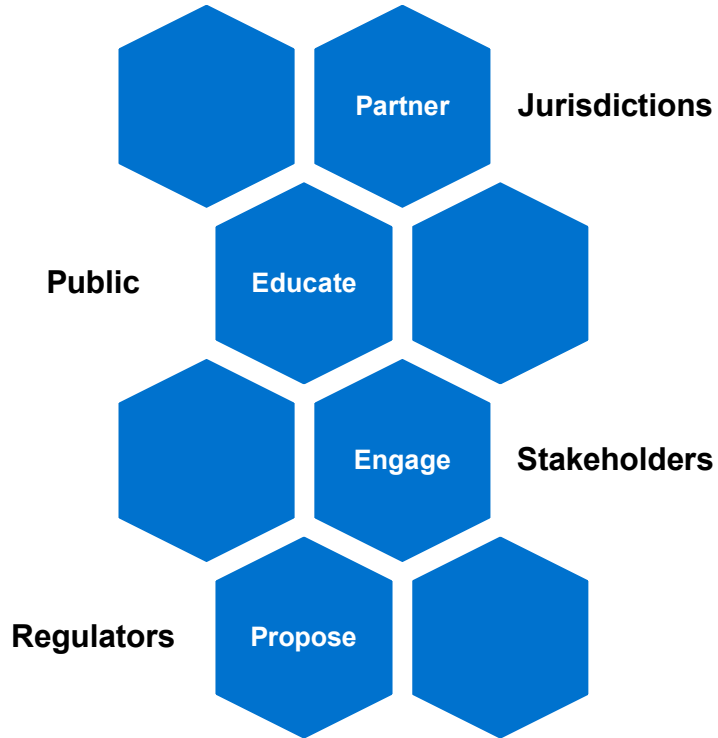
☐ Environmental Justice	☐ Visual Impacts	☐ Grid Reliability	☐ Educational Partnerships
☐ Cultural/Historical	☐ Property Value	☐ Green Energy	☐ Economic Benefits (Jobs and Tax revenue)
☐ Biological	☐ Safety / EMF	☐ Other (fill in the blank)	Other
☐ Streams/Wetlands	☐ Birds / Sea life		

Please leave your comments here:

(Maximum characters: 6500) You have 6500 characters left.

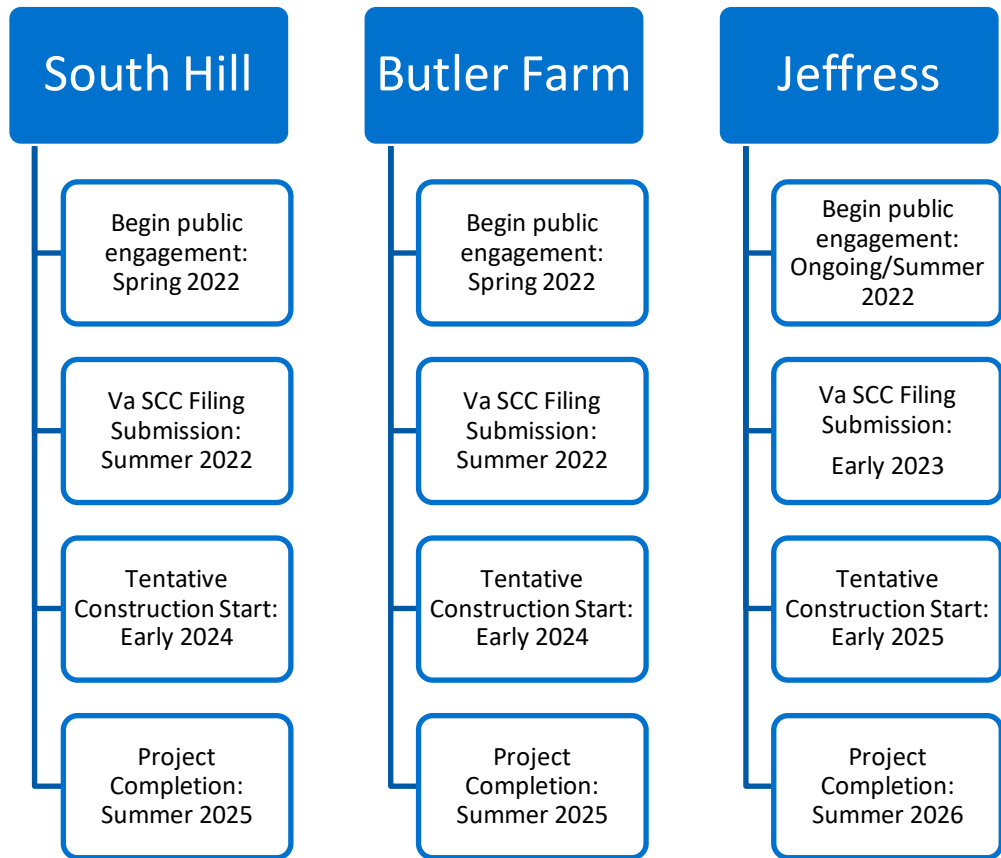
Partnerships to Meet Future Demand

Modern Grid Infrastructure Improvements = Win-Win



- Enables/needed for current economic growth
- Boosts local economy and creates jobs during construction
- Improves service for customers by preventing or speeding response to power outages
- Provides long-term tax revenues
- Supports local industries
- Stimulates future economic development opportunities
- Diversifies load by bringing renewables like solar and wind to the electric grid

Timeline



**Our company is built on a proud
legacy of public service, innovation
and community involvement.**