



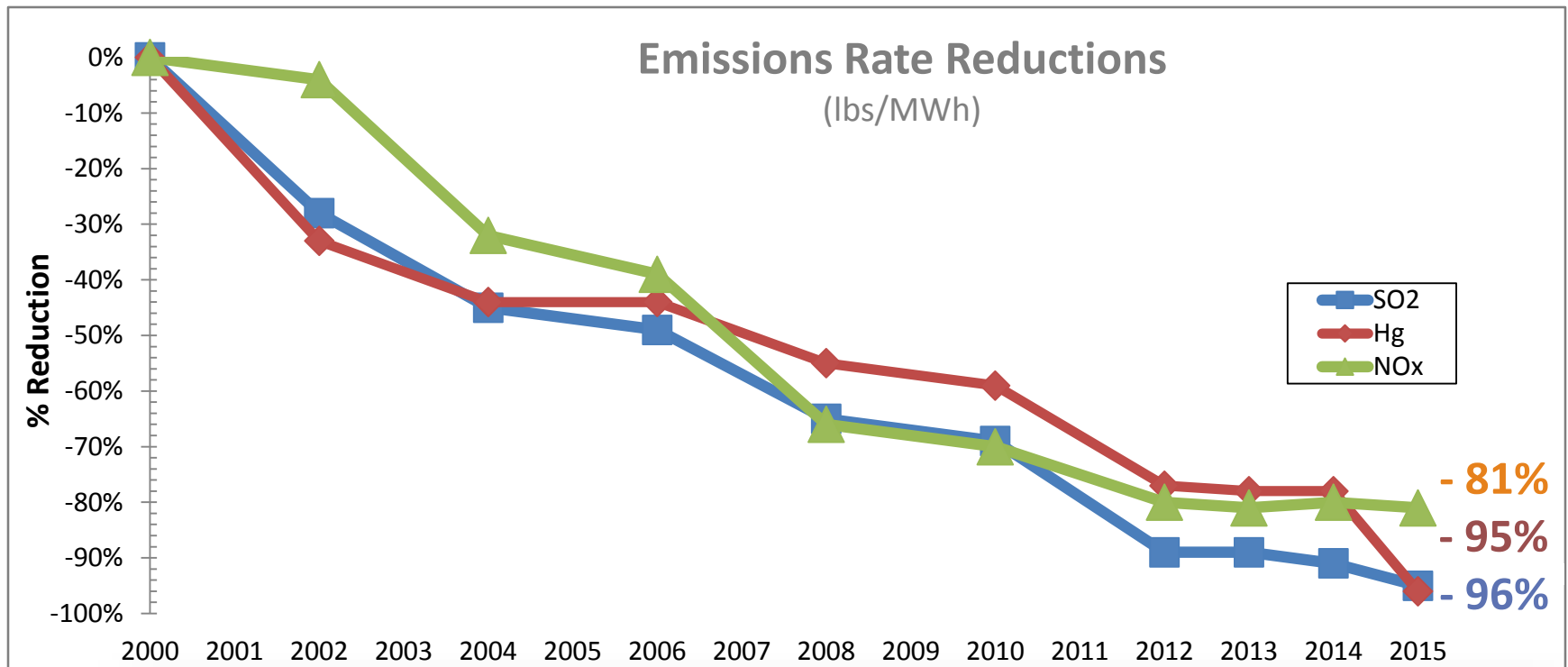
Dominion®

Powering the Peninsula

ENVIRONMENTAL

Constantly Improving:

- Over the last 15 years, we are seeing constant improvements in reducing our system-wide emissions



During the same timeframe, Dominion's system-wide carbon emissions was reduced by 23%.

YORKTOWN POWER STATION



Yorktown Power Station Days at 100% Capacity

	2012	2013	2014
Unit 1	156	97	112
Unit 2	104	117	122
Unit 3	5	5	8

*With a **capacity factor limitation of 8%** (MATS rule), Unit 3 operations are limited to an average of 29 days annually at full capacity*

DOZENS OF ALTERNATIVES CONSIDERED

Generation Alternatives

- X Retrofitting Yorktown Power Station
- X Repowering Yorktown Power Station
- X New Generation
- X Demand-Side Management (DSM only ~ 70 MW)

Transmission & Hybrid

- X Chickahominy – Lanexa 500 kV
- X Save The James Alliance Alternative
- X 214/263 230 kV Line Rebuild (James River Bridge Crossing)
- X Chuckatuck – Newport News 230 kV (Whittier Hybrid)
- X Surry – Whealton 500 kV Line
- X Surry – Skiffes Creek 500 kV Underground (Alternating Current)
- X Surry – Skiffes Creek 500 kV Underground (High Voltage Direct Current)
- X Surry – Skiffes Creek 230 kV Underground (With and Without Yorktown Generation)
- X Chickahominy – Skiffes Creek 500 kV *(Resolves NERC Criteria Violations but with greater environmental impacts and costs than Proposed Project)*
- **APPROVED BY SCC: Surry – Skiffes Creek 500 kV, Skiffes Creek – Whealton 230kV, Skiffes Creek Switching Station**





Surry – Skiffes Creek – Whealton

Electric Transmission Project

September 2016

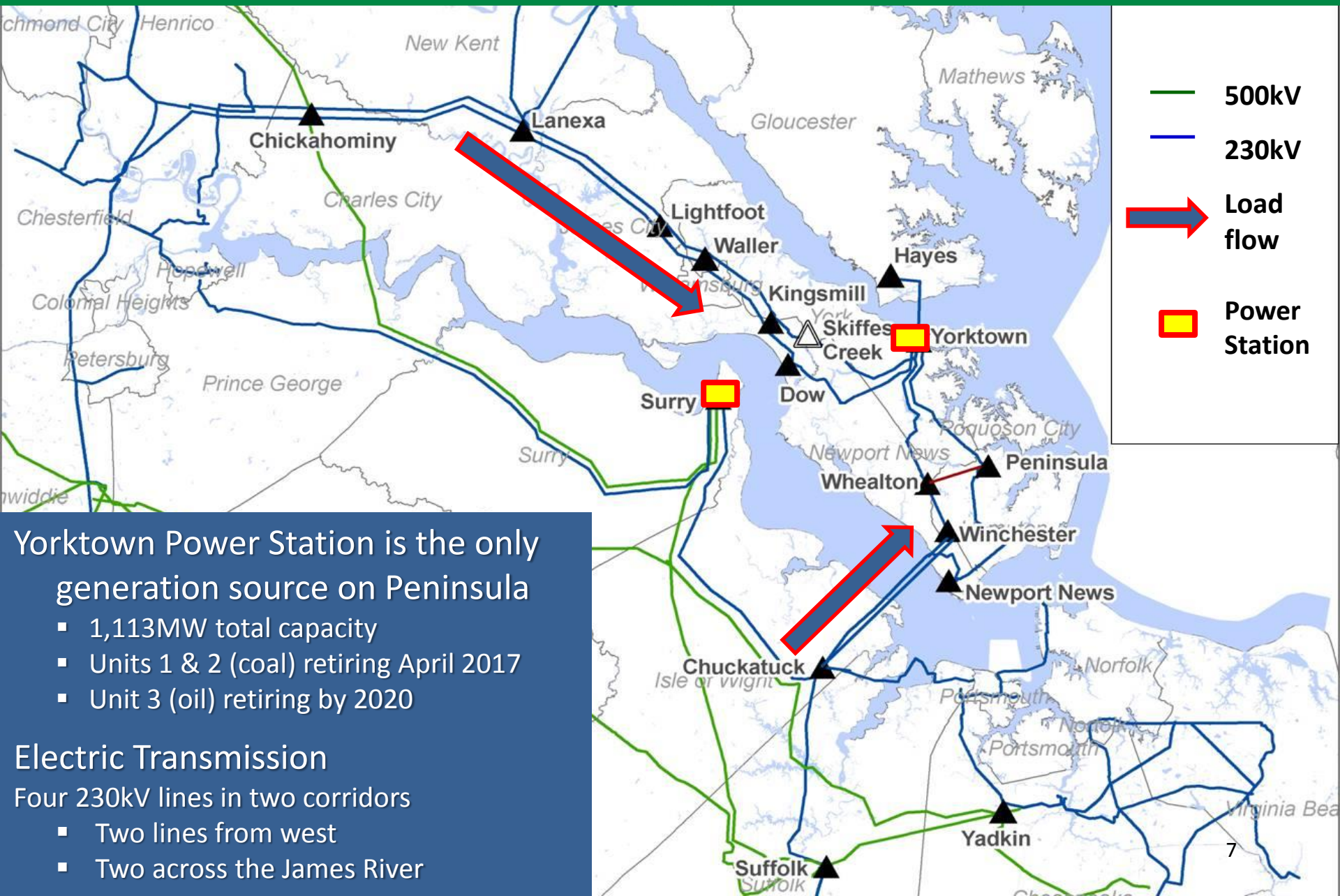
SUMMARY OF CHALLENGES

- ❖ Growing need for electricity on Virginia's Peninsula
- ❖ Yorktown coal units scheduled for closure April 2017
- ❖ Federal law mandates compliance with electric reliability standards

The future without Skiffes Creek project in service:

- Potential widespread blackouts across Peninsula from April 2017 until Skiffes Creek project is complete
- Automatic scheme being developed to avoid outages cascading into Richmond, Northern Virginia or North Carolina

POWERING THE PENINSULA – Peak Load 1,438 MW (2015)



Yorktown Power Station is the only generation source on Peninsula

- 1,113MW total capacity
- Units 1 & 2 (coal) retiring April 2017
- Unit 3 (oil) retiring by 2020

Electric Transmission

Four 230kV lines in two corridors

- Two lines from west
- Two across the James River

SYSTEM OVERLOADS without YORKTOWN or SKIFFES CREEK

SUMMER 2017 DURING PEAK PERIODS

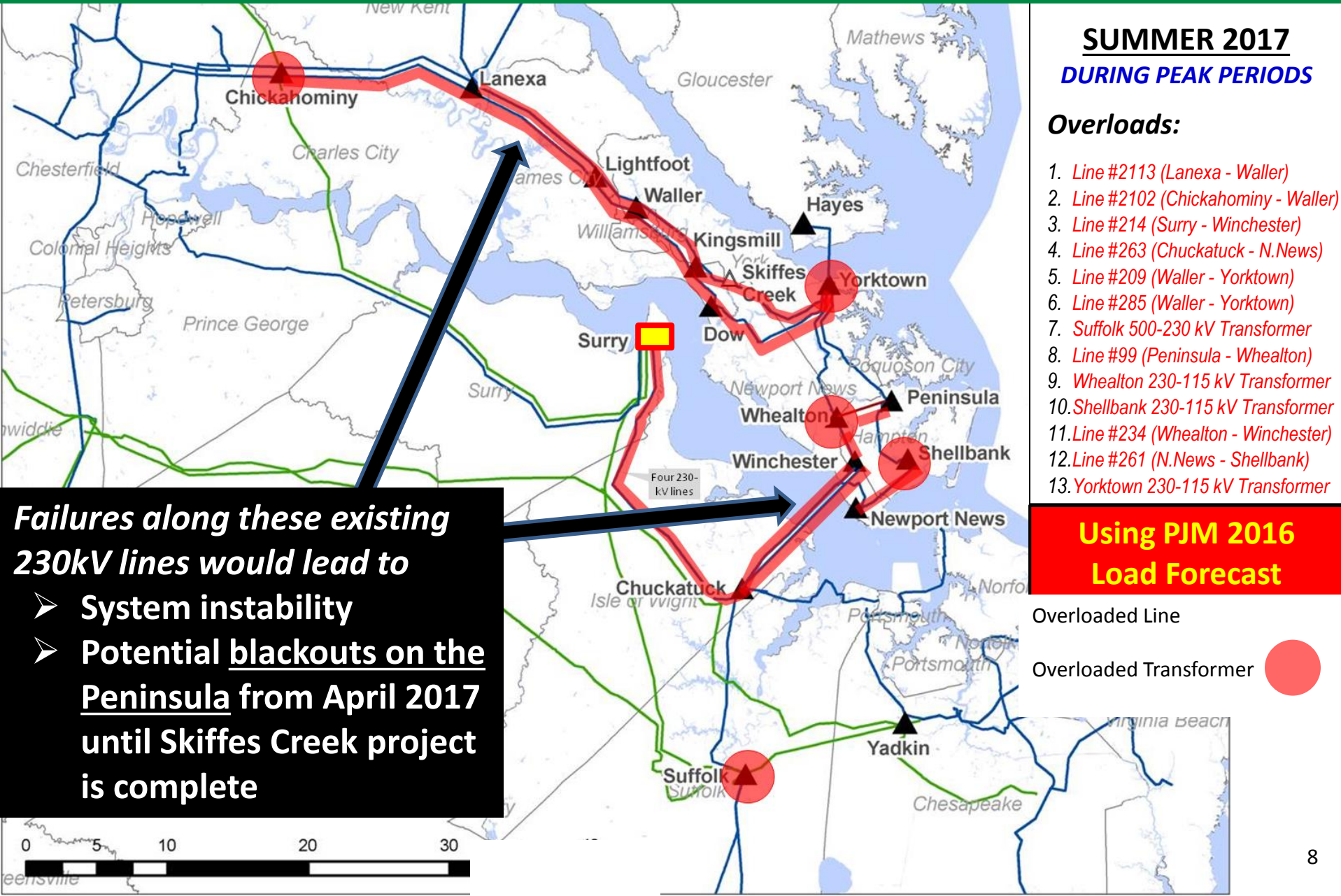
Overloads:

1. Line #2113 (Lanexa - Waller)
2. Line #2102 (Chickahominy - Surry)
3. Line #214 (Surry - Winchester)
4. Line #263 (Chuckatuck - N.News)
5. Line #209 (Waller - Yorktown)
6. Line #285 (Waller - Yorktown)
7. Suffolk 500-230 kV Transformer
8. Line #99 (Peninsula - Wheelton)
9. Wheelton 230-115 kV Transformer
10. Shellbank 230-115 kV Transformer
11. Line #234 (Wheelton - Winchester)
12. Line #261 (N.News - Shellbank)
13. Yorktown 230-115 kV Transformer

Using PJM 2016
Load Forecast

Overloaded Line

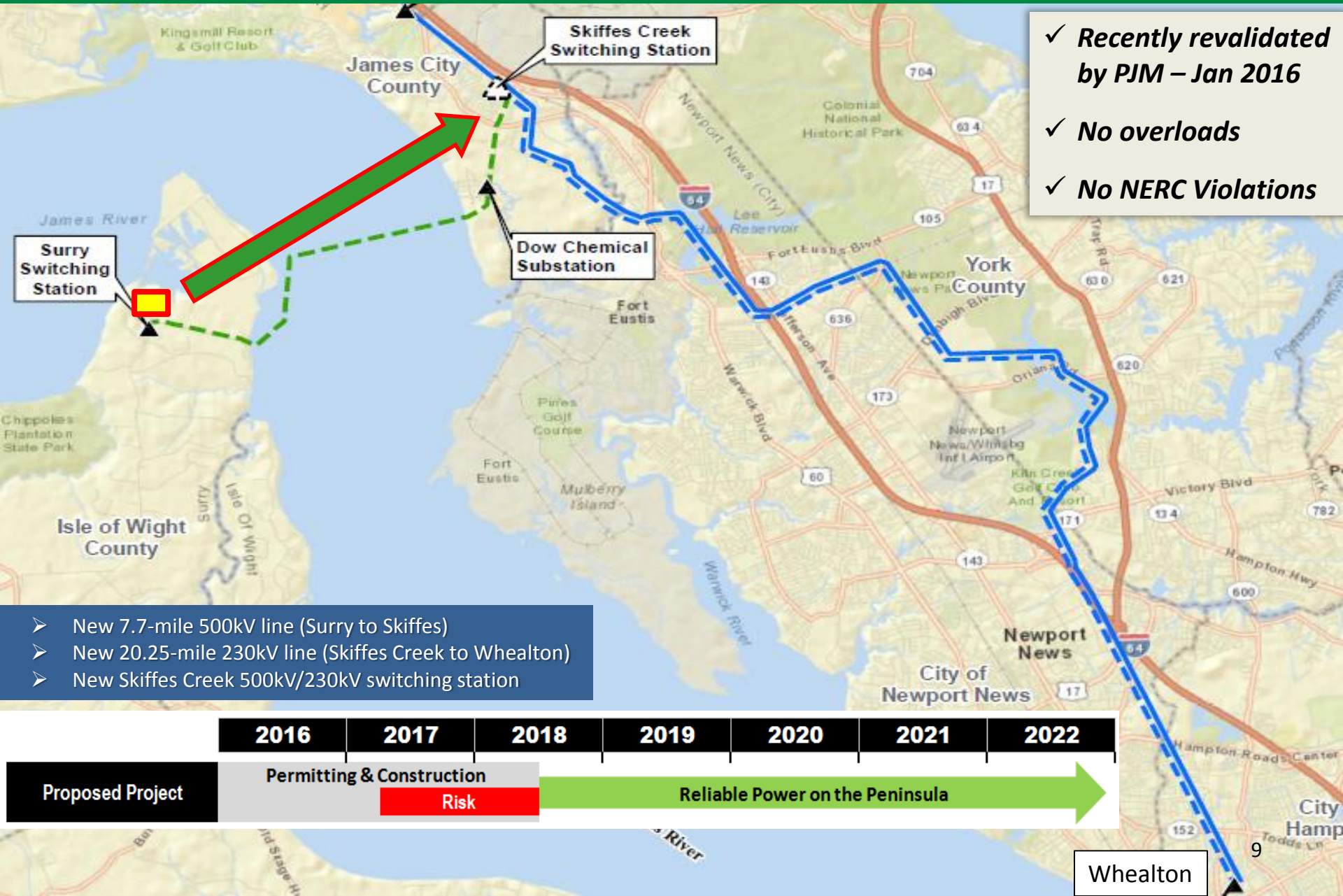
Overloaded Transformer



Failures along these existing 230kV lines would lead to

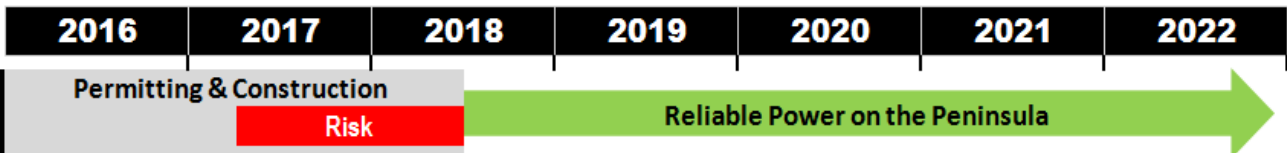
- System instability
- Potential blackouts on the Peninsula from April 2017 until Skiffes Creek project is complete

THE SOLUTION – SURRY to SKIFFES CREEK to WHEALTON



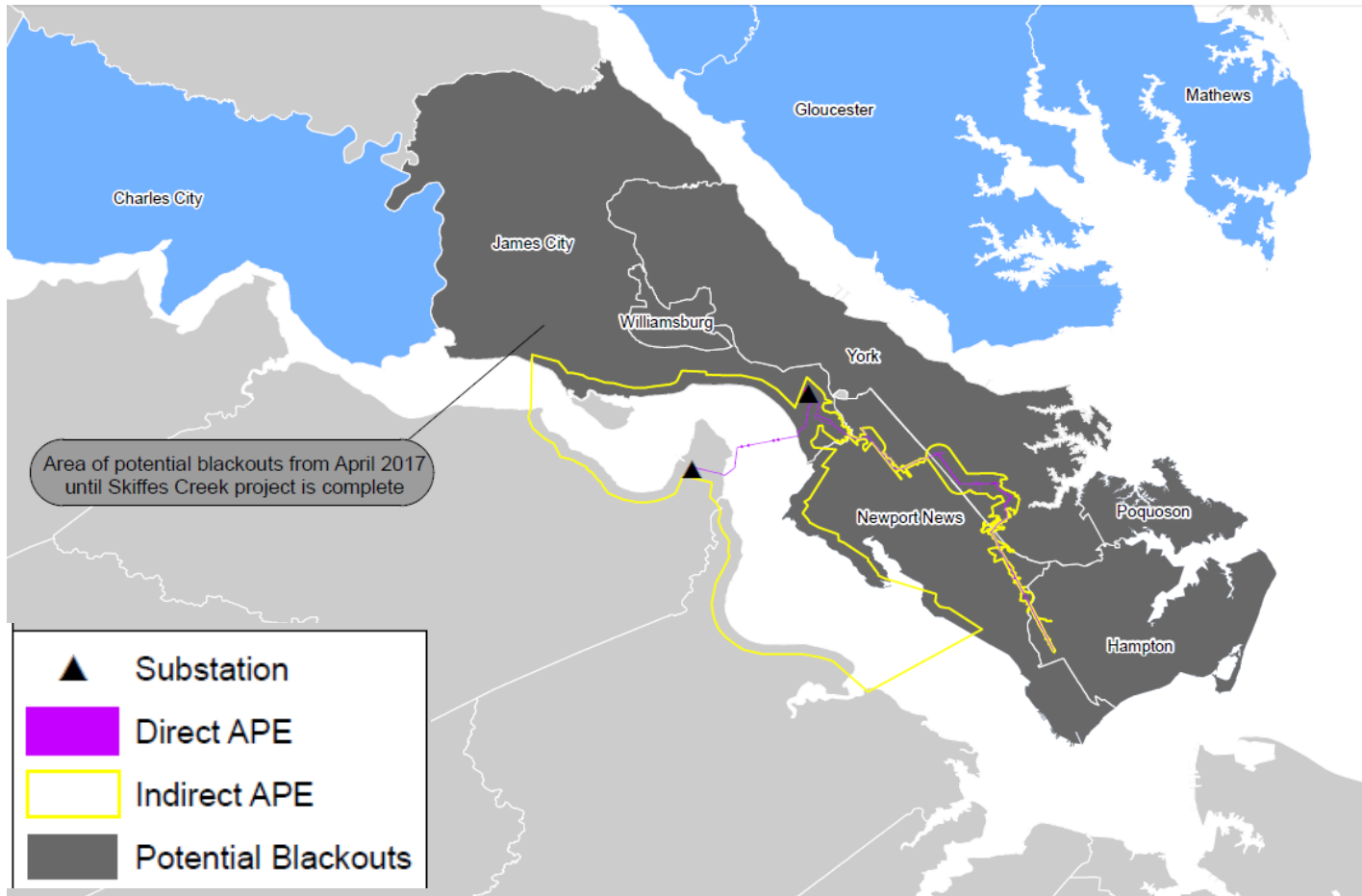
- ✓ *Recently revalidated by PJM – Jan 2016*
- ✓ *No overloads*
- ✓ *No NERC Violations*

- New 7.7-mile 500kV line (Surry to Skiffes)
- New 20.25-mile 230kV line (Skiffes Creek to Whealton)
- New Skiffes Creek 500kV/230kV switching station



Whealton

OUTAGE SCENARIOS – Isolate Impacts to the Virginia Peninsula



**Historical
operating data
indicates
50-80
HIGH RISK DAYS
per year
for potential
outages**

APE – Area of Potential Impact determined by USACE

**** James City County, York County, Williamsburg, Newport News, Hampton, Poquoson 10**

REGULATORY PROCESS

TRANSMISSION LINES:

Need for new line announced
Virginia SCC Project Approval

Early 2011
Feb. 28, 2014

Virginia Marine Resources Commission – Filed August 2013

Pending

U.S. Army Corps of Engineers Permit Application Filed
-- NEPA Environmental Assessment
-- National Historic Preservation Act Section 106 Consultation

August 2013
Pending
Pending

**Signed Mitigation MOA
is an Essential Step**



SWITCHING STATION:

James City County Special Use Permit – Filed June 2015

Pending

MITIGATION AGREEMENT – APPROVAL REQUIRED OF FOUR PARTIES

❑ **\$85 million Obligated**

- Funding is provided for a wide variety of projects that will preserve and enhance the cultural and natural features of the historic district (i.e. landscapes, shorelines, and water quality)
- Provide for enhanced visitor experience opportunities at various heritage tourism destinations within the APE
- These projects will be developed and implemented in consultation with recognized experts as well as the Corps, SHPO, and other signatories to the MOA
- Provisions are also provided for handling unanticipated discoveries and disputes in consultation with the Corps and SHPO

❑ **Underwater and Terrestrial Archaeological Sites**

- A plan to avoid impacts will be prepared and submitted for review and approval by the Corps and SHPO prior to implementation
- Implementation of the plan will be monitored by a third party archaeologist
- The one archaeological site that cannot be avoided will have data recovery completed prior to any construction in the area of the site; work will be reviewed and approved by the Corps and SHPO

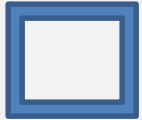
❑ **Electric Transmission Infrastructure**

- Steps will be taken to evaluate and apply, as appropriate, tower coatings that will help minimize the visual impact of the towers when viewed from a distance
- Dominion has committed not to add any new tower infrastructure within the APE or increase the proposed tower heights for the life of the project
- Dominion further commits to review every 10 years the need for the project and the availability of industry accepted technology to put the lines under the river.

MITIGATION AGREEMENT – APPROVAL REQUIRED OF FOUR PARTIES



U.S. ARMY CORPS OF ENGINEERS NORFOLK DISTRICT



DOMINION VIRGINIA POWER



VIRGINIA STATE HISTORIC PRESERVATION OFFICE



ADVISORY COUNCIL ON HISTORIC PRESERVATION

***Without resolution of historic preservation issues
the Corps cannot make a final permit decision***

CONSEQUENCES OF FAILING TO ENERGIZE PROJECT



Reliability risks without Skiffes Creek in service by 2017

Under certain conditions, system load can exceed limits which create the possibility of cascading blackouts

Blackouts could occur with or without advanced warning depending on the circumstances

