



Reliability Analysis Update

Sami Abdulsalam, Senior Manager

Transmission Expansion Advisory Committee

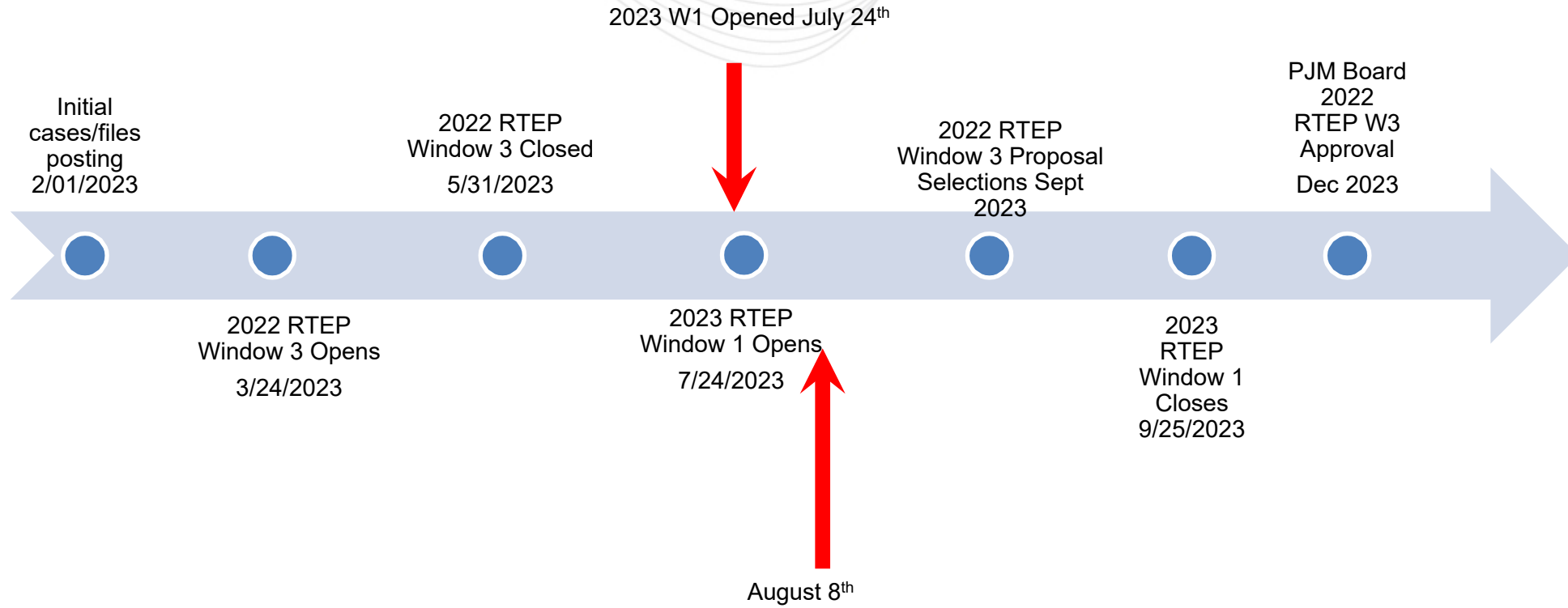
August 8, 2023

2022 RTEP W3 & 2023 RTEP W1

Timeline and Status Update



2022 RTEP Window 3 and 2023 RTEP Window 1 - Timeline



- PJM opened the 2023 RTEP W1 on July 24th 2023 (on schedule).
- PJM Released latest updated basecase and information files on July 24th 2023
- PJM Released an addendum on August 3rd 2023
- Total 266 flowgates (130 competitive Vs. 136 non-Competitive)
- Window will focus on resolving reliability constraints outside the area currently covered by the 2022 RTEP W3 scope.
- 60 Day Window
- Targeting Feb 2024 board approval – Nov., Dec. and Jan. TEAC for solutions.



2022 RTEP W3

Progress Update

- Window Summary:
 - The 2022 Window 3 officially closed on May 31 2023.
 - 72 Proposals were received from 10 entities
 - 6 are Incumbent, 4 Non Incumbent
 - 16 Projects are upgrades, while 50 are Greenfield
 - 44 Proposals have Cost Containment Commitments
- PJM completed individual proposal screening and planning evaluations
- Proposal scenario evaluations underway

- 2 Rounds of PJM meetings with proposing entities:
 - Discussions to clarify details of proposed developments, assumptions, rationale of proposed alternatives/variations.
 - 1st round were conducted in June/July 2023.
 - 2nd round was initiated in late July and will conclude mid-August:
 - » Focus on outage scheduling, routing, risk and cost assumptions/considerations

- Scenario Development and Analysis
 - To-Date; PJM developed and analyzed:
 - 28 Scenarios for the 2027 model
 - 21 Scenarios for the 2028 model

 - Scenarios were built based on;
 - Full combination scenarios by proposing entities
 - Modifications to full proposed scenarios
 - Optimized scenarios using components from incumbent and non-incumbent proposing entities

- Several scenarios were found adequate to address the needs presented in the 2027 model
- The robustness test using the 2028 model shows;
 - Need for more robust reinforcements in the Eastern and South / Dominion quadrants
 - Western quadrant needs are less sensitive (still impacted) by the robustness test
 - A number of proposals (that are based on addressing the 2027 model needs only) may not offer the needed scalability and robustness to address the 2028 model needs.

- Many robust proposed developments (to varying degree) were submitted that could address regional transfer needs
 - East to West:
 - Peach Bottom – Conastone – Brighton – Doubs path
 - Including alternate paths (ex. Hunterstown – Doubs 500 kV upgrade)
 - West to East:
 - 502 Junction-Fort Martin – Black Oaks – Doubs
 - Pruntytown – Meadowbrook – Doubs
 - 765 kV path from Joshua Falls to the Bristers/Morrisville area.
 - Front Royal – Vint Hill/Loundon

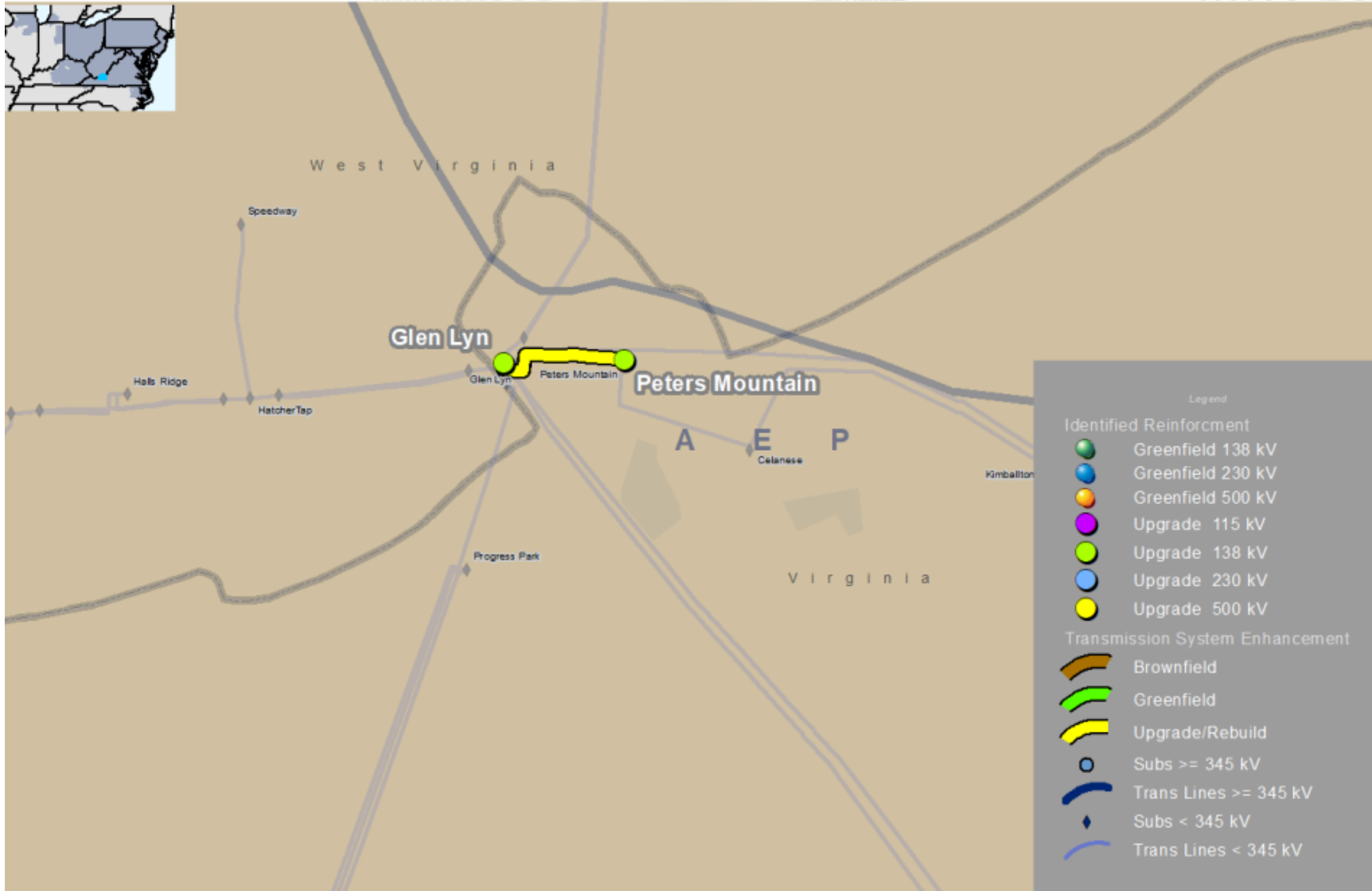


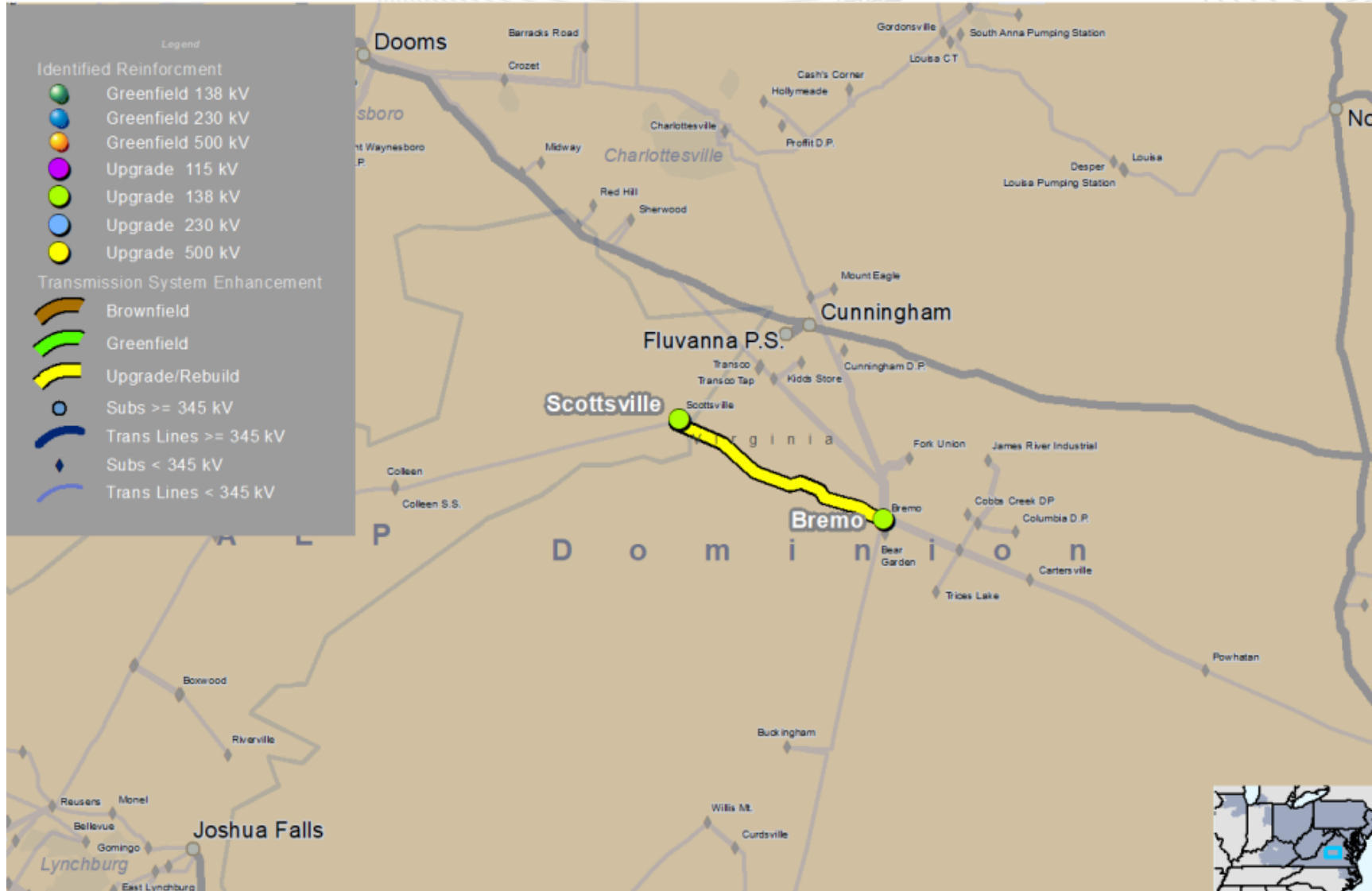
2022 RTEP Window 3 – Scenario Evaluations and Ranking Considerations

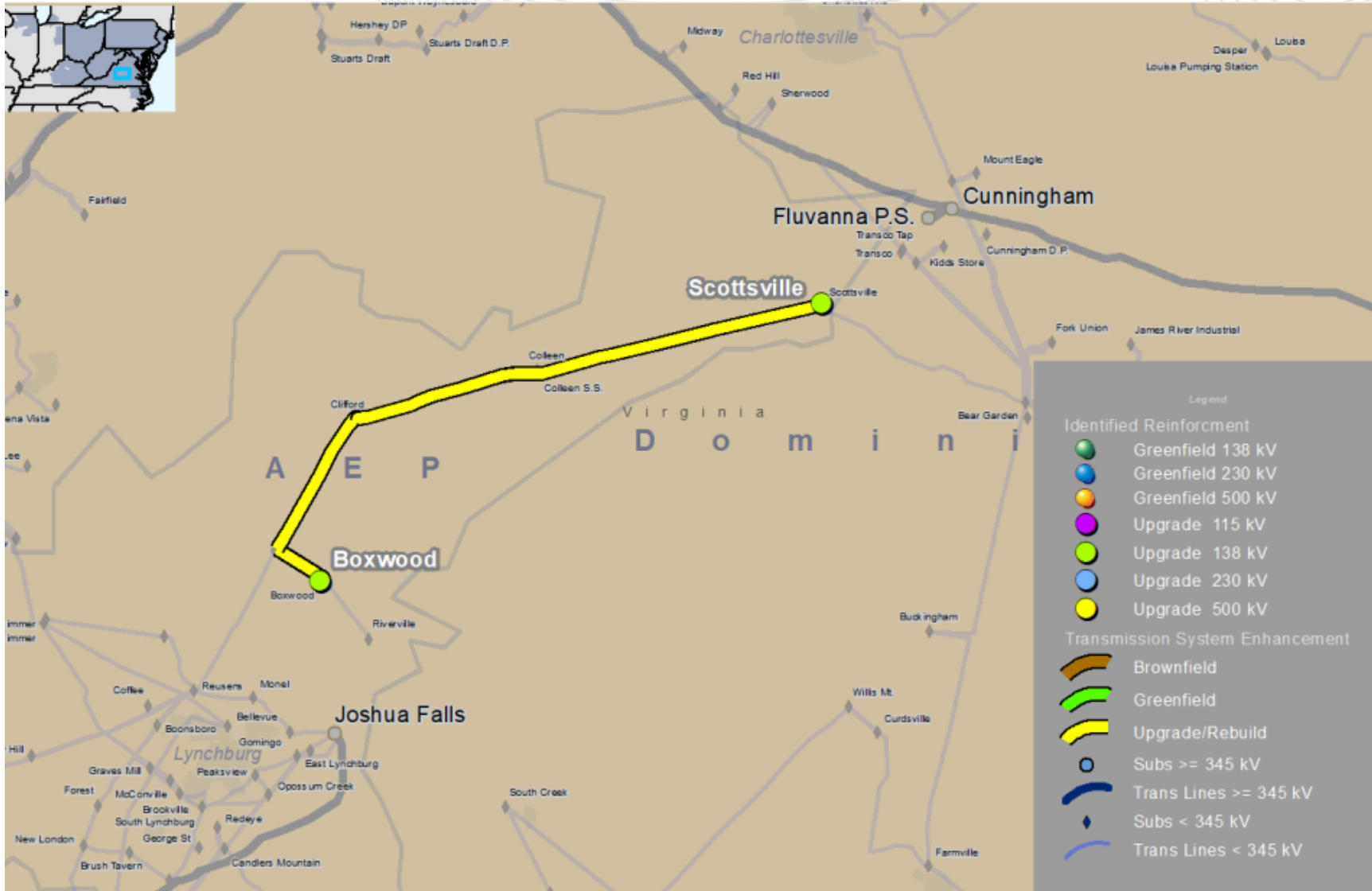
- Scenarios with their associated proposed developments will be ranked based on;
 - Meeting the system needs of 2027 and being scalable/flexible to address 2028 needs
 - Scenario/Development longevity – System utilization
 - Utilization of existing ROWs and brownfield development/expansion (where possible and efficient)
 - Cost evaluation using 3rd party cost benchmarking metrics
 - Risk of individual components development:
 - Imposing/triggering costly upgrades:
 - Substation re-builds due to extreme Short Circuit levels
 - Cost, schedule and extensive outage risks.
 - Imposing high permitting and/or schedule risk
 - Avoidance of redundant capital investment:
 - Synergies with EOL rebuild needs
 - Avoidance of previously approved (or imminent) supplemental/baseline upgrades

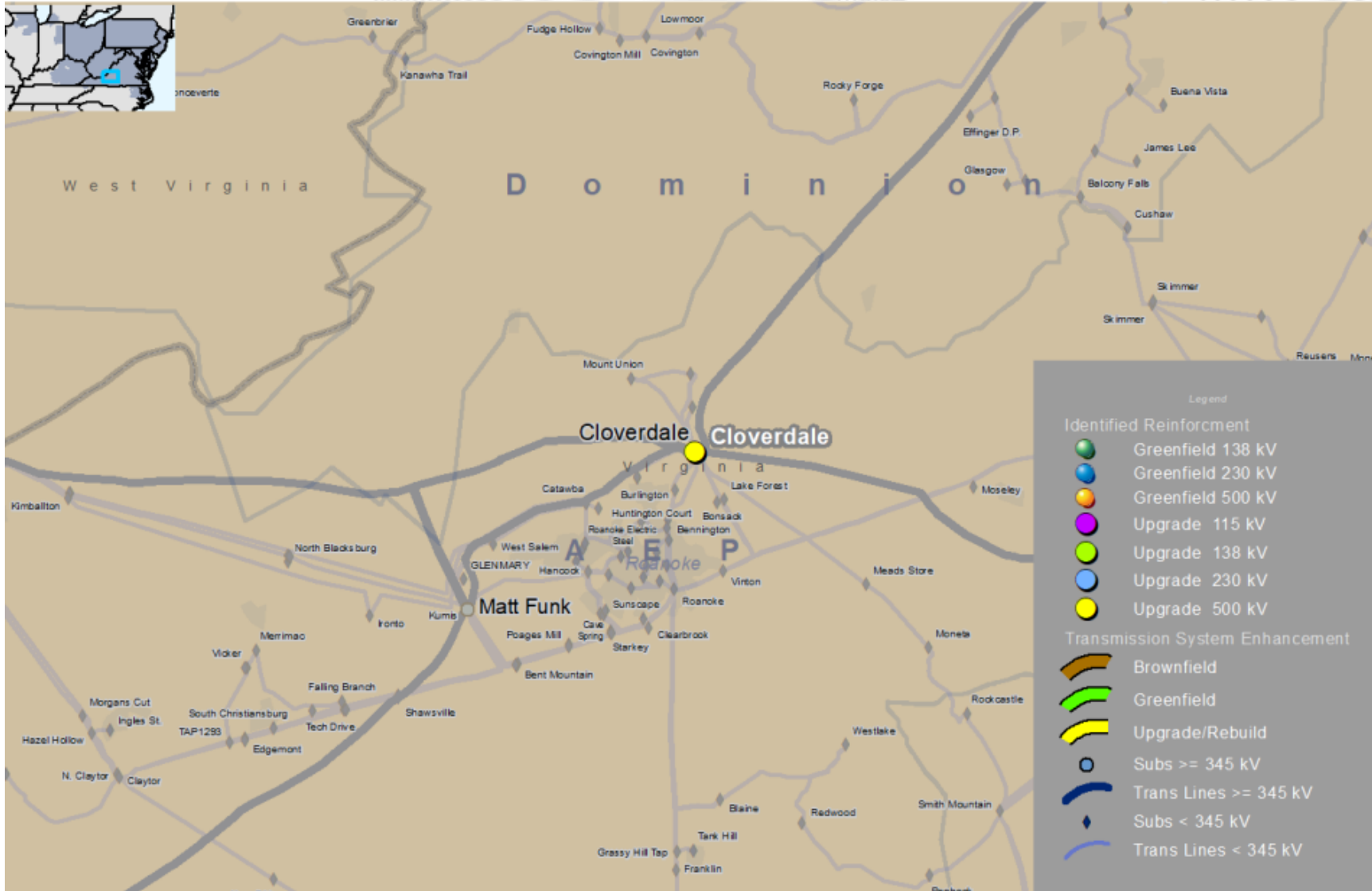
- Scenario evaluations to continue through August 2023.
- PJM will be conducting load deliverability evaluations for the short listed scenarios – scheduled to start mid August 2023
- Targeting to finalize technical and constructability evaluations by end of September 2023.
- PJM will schedule a special TEAC to walk through the window evaluation results before the October Teac meeting

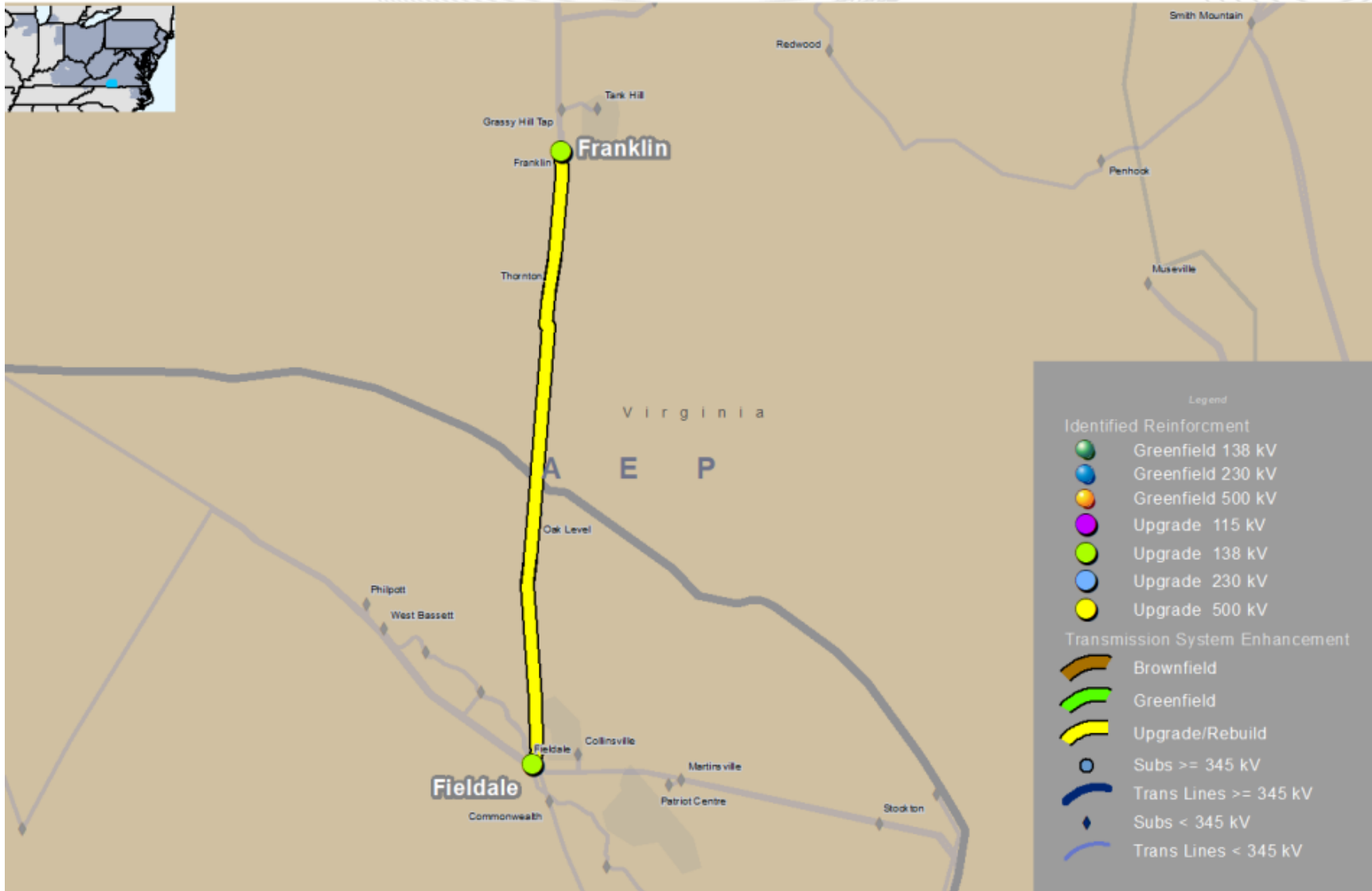
Appendix

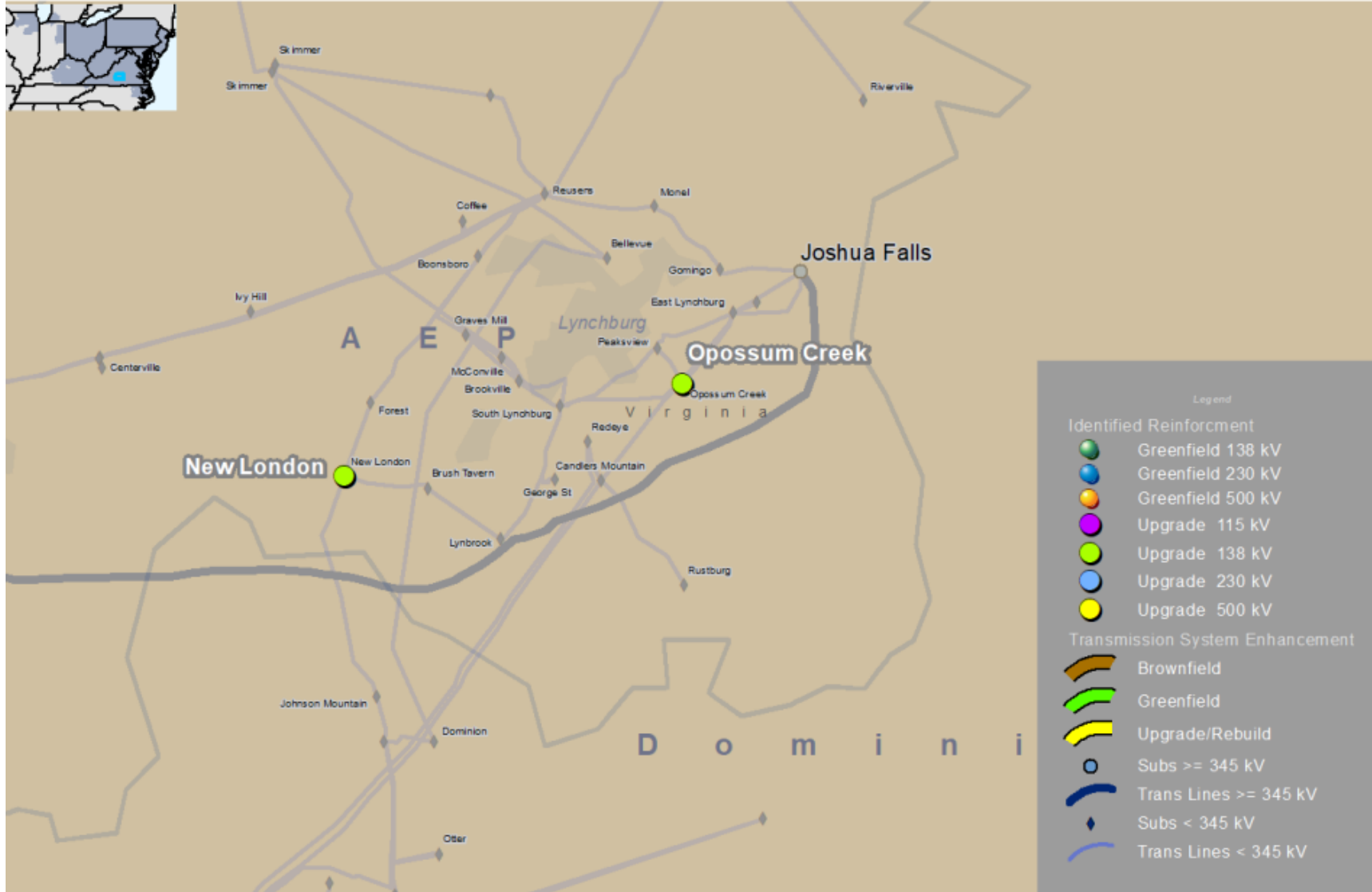


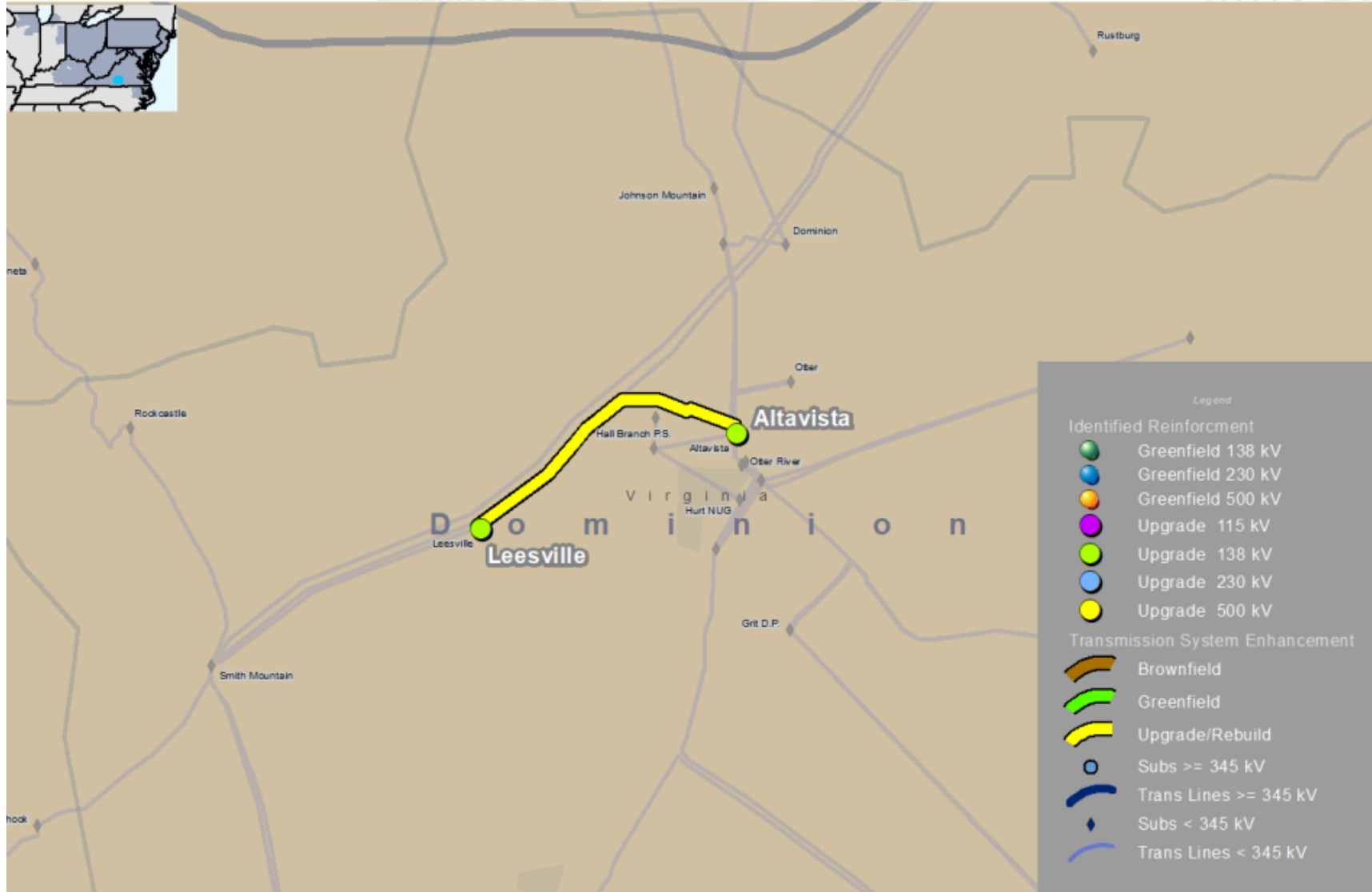


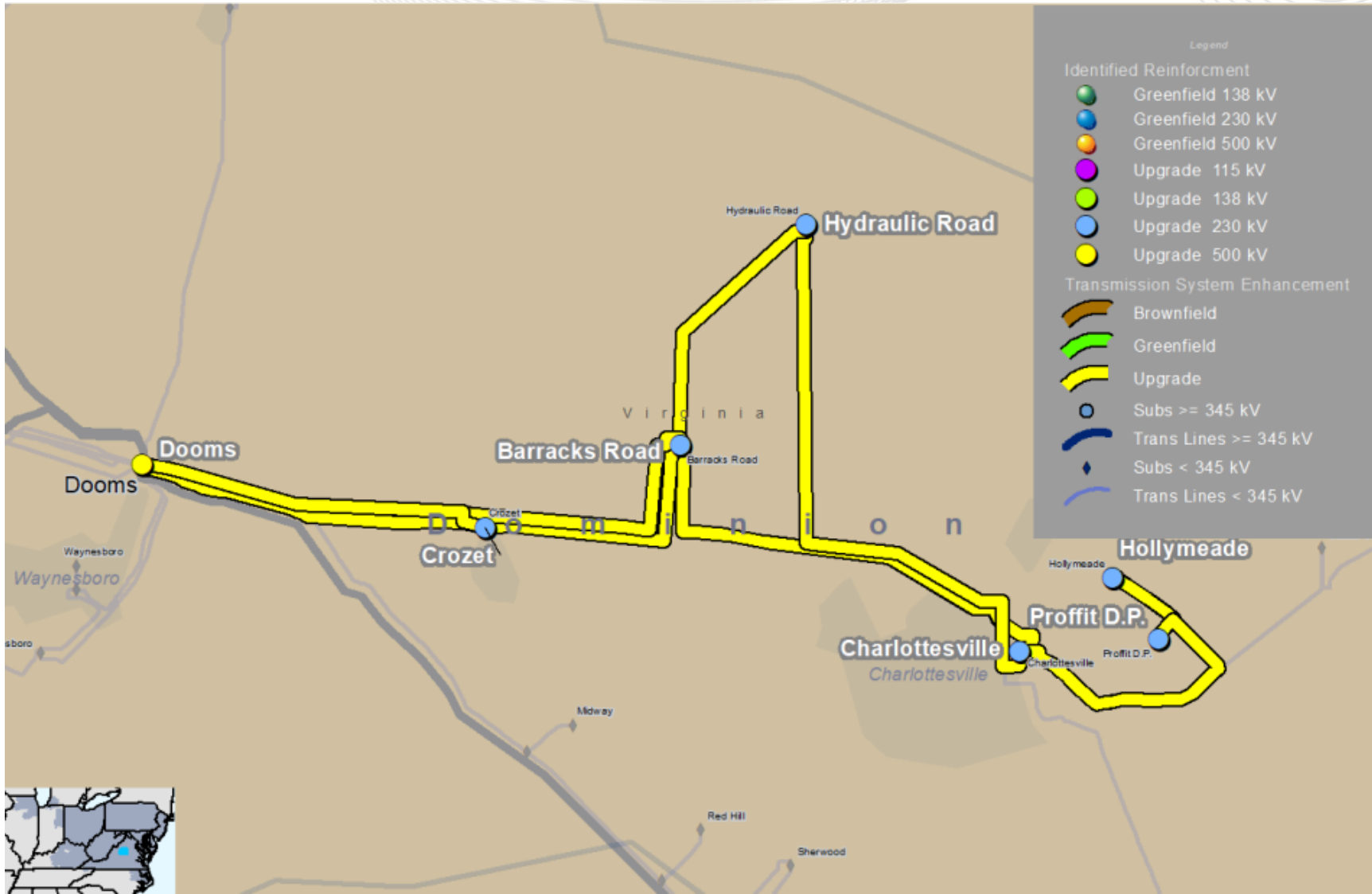


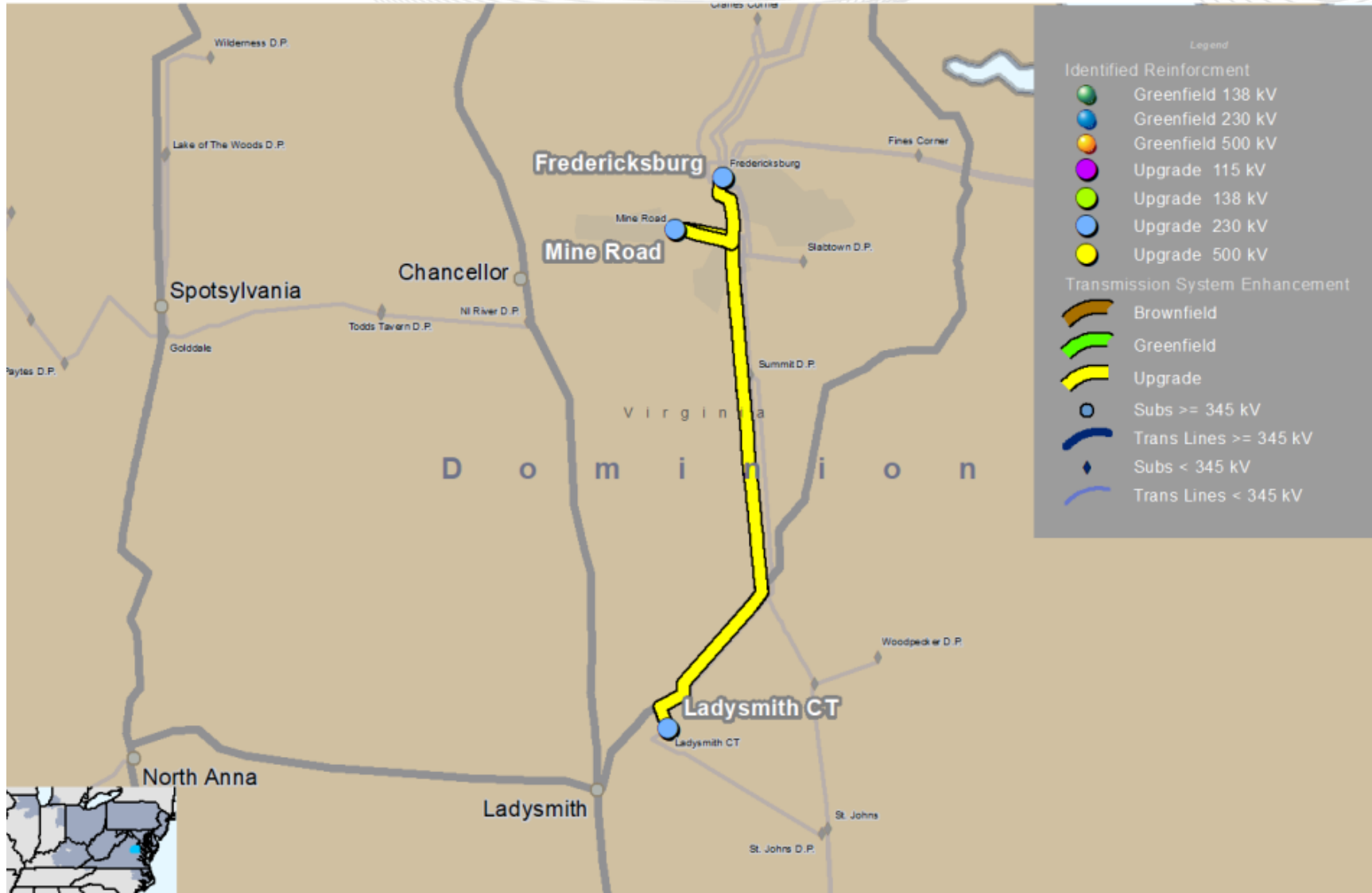


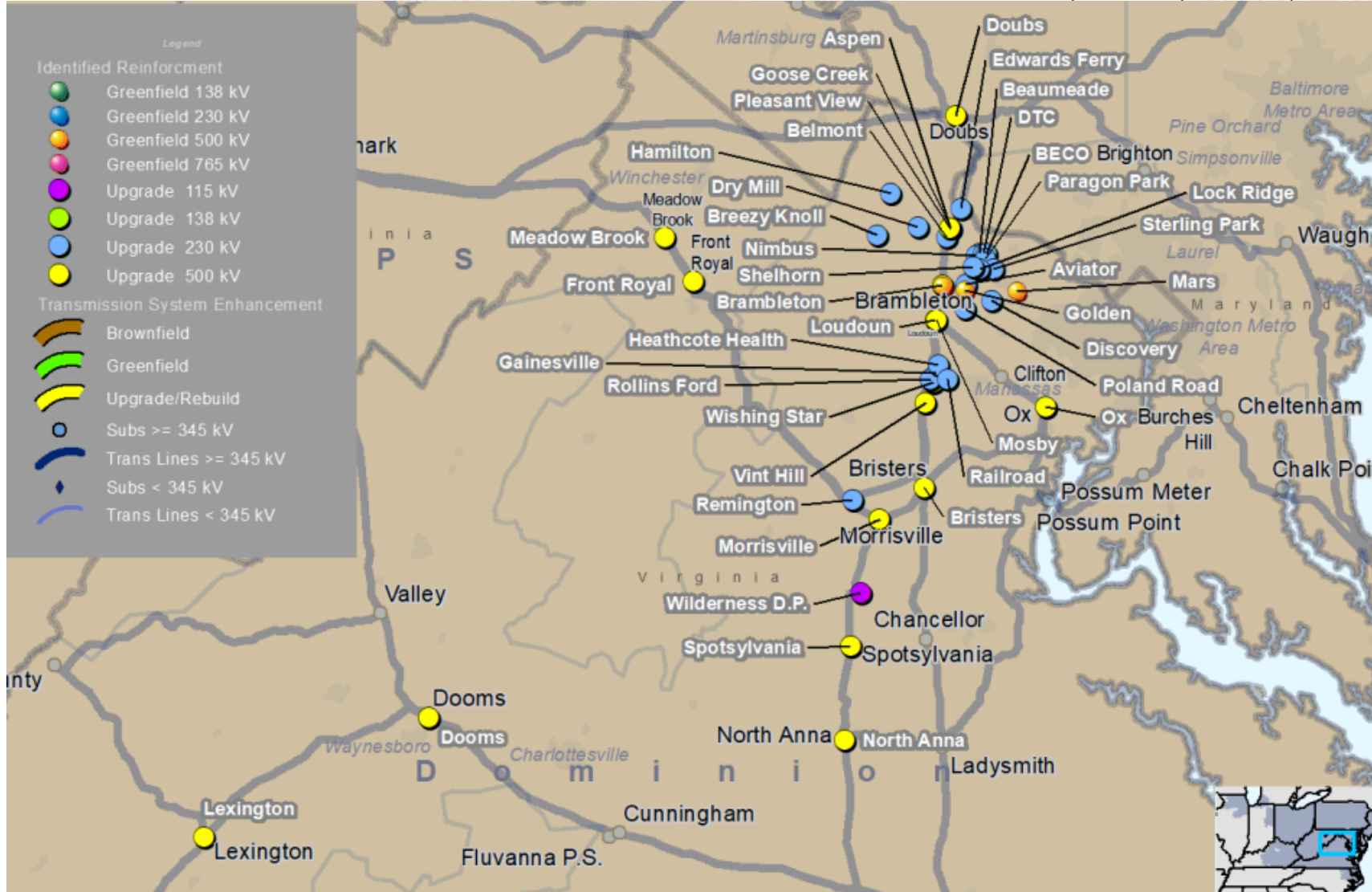


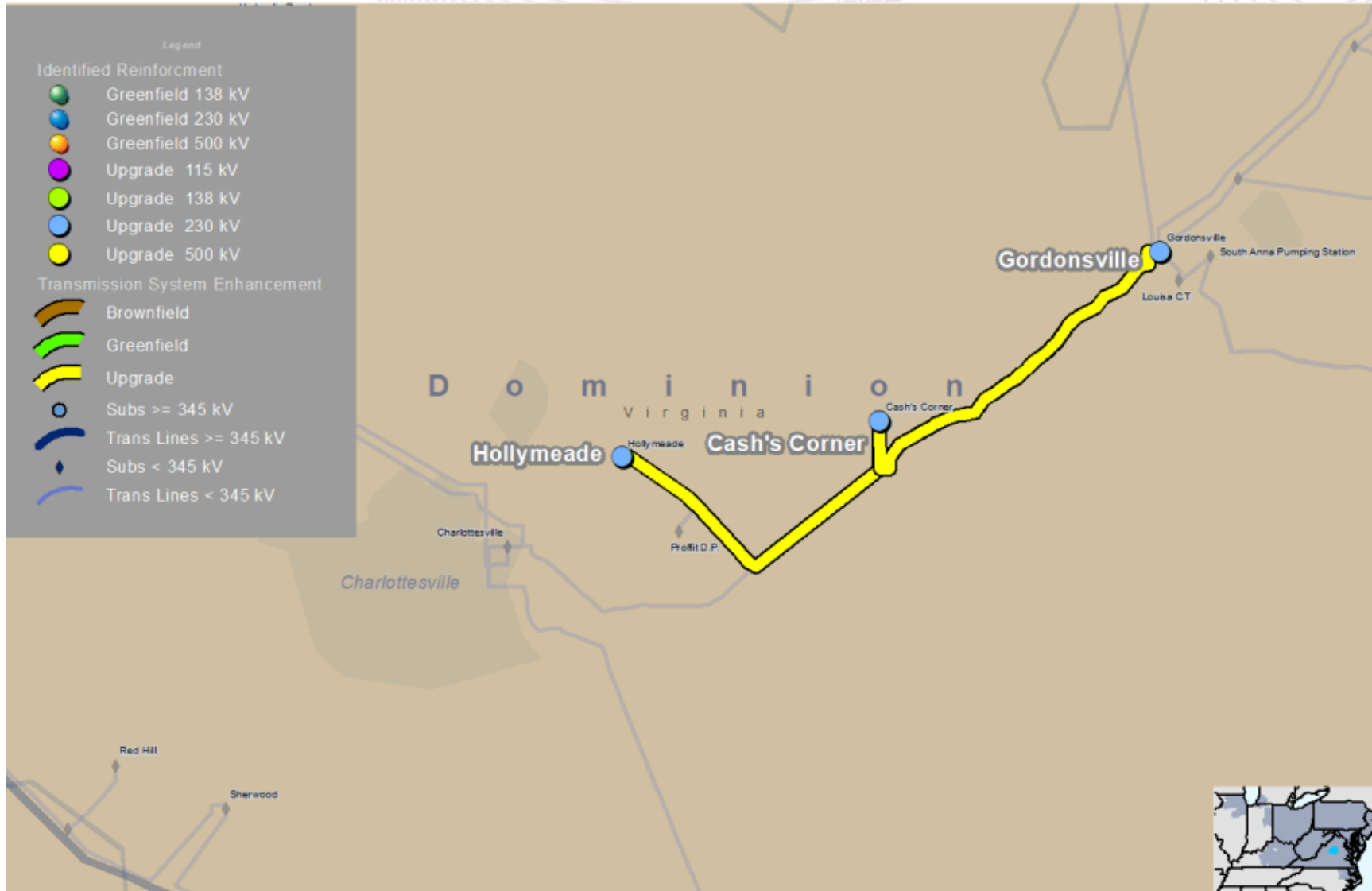


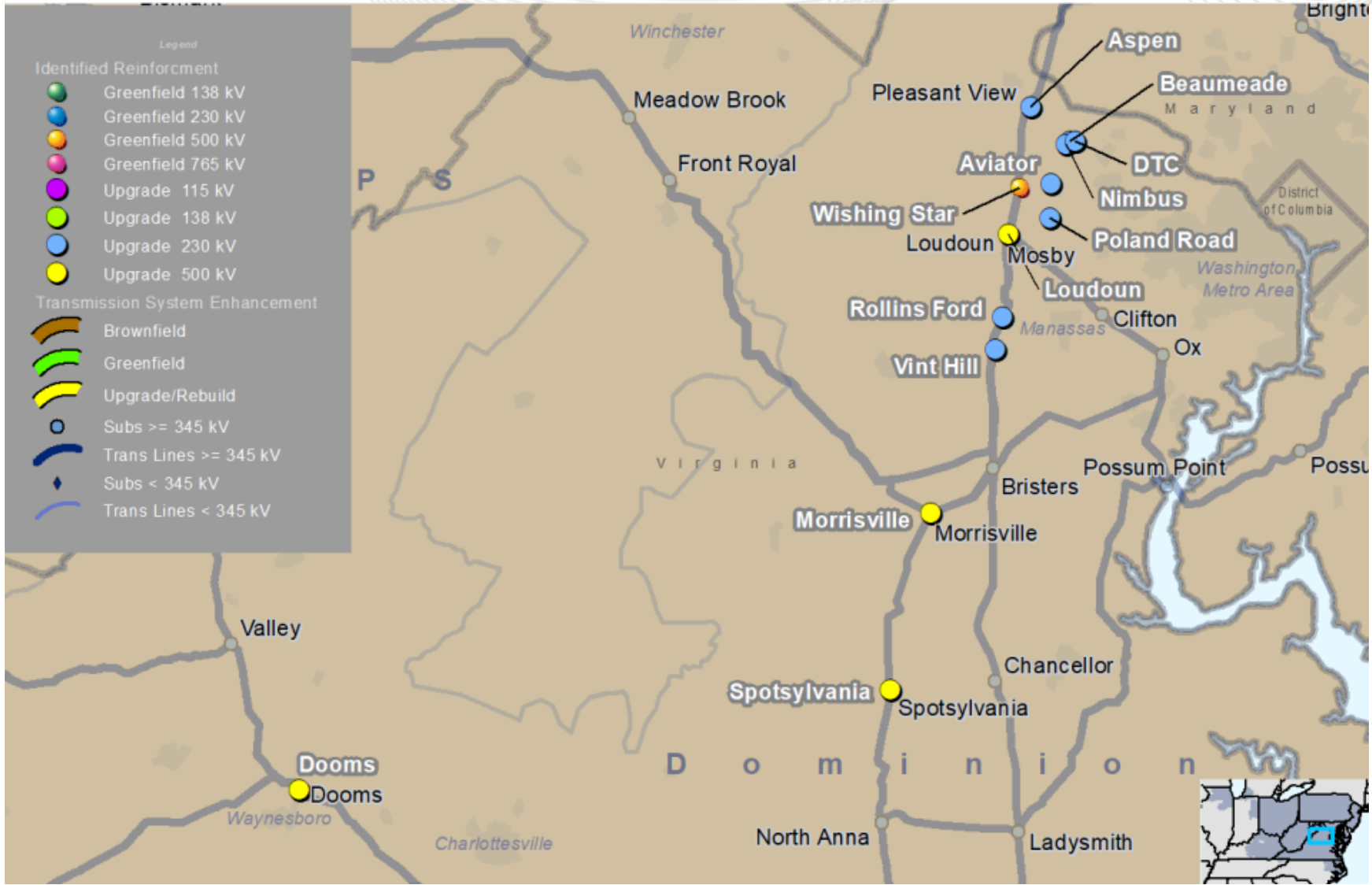


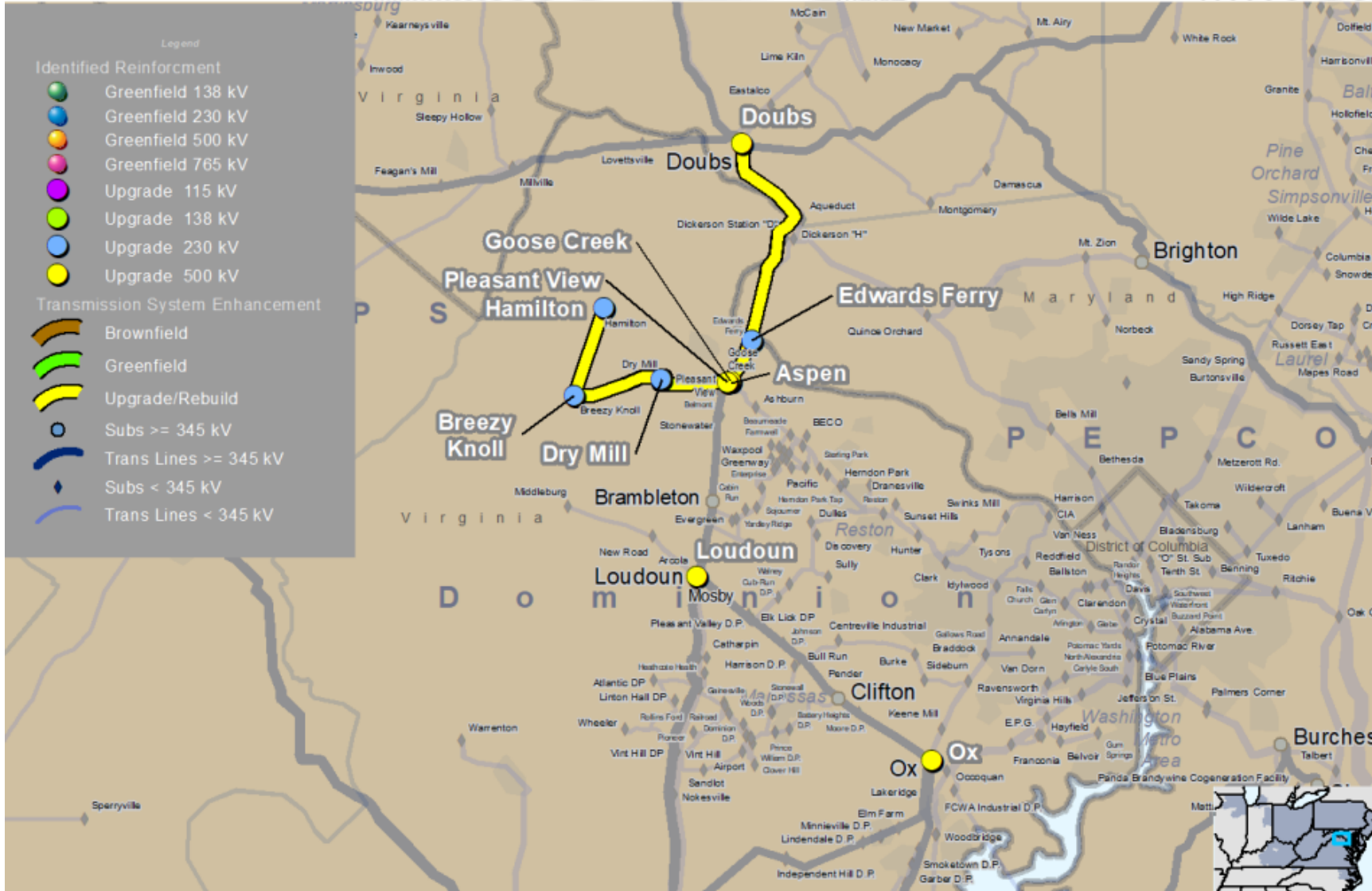


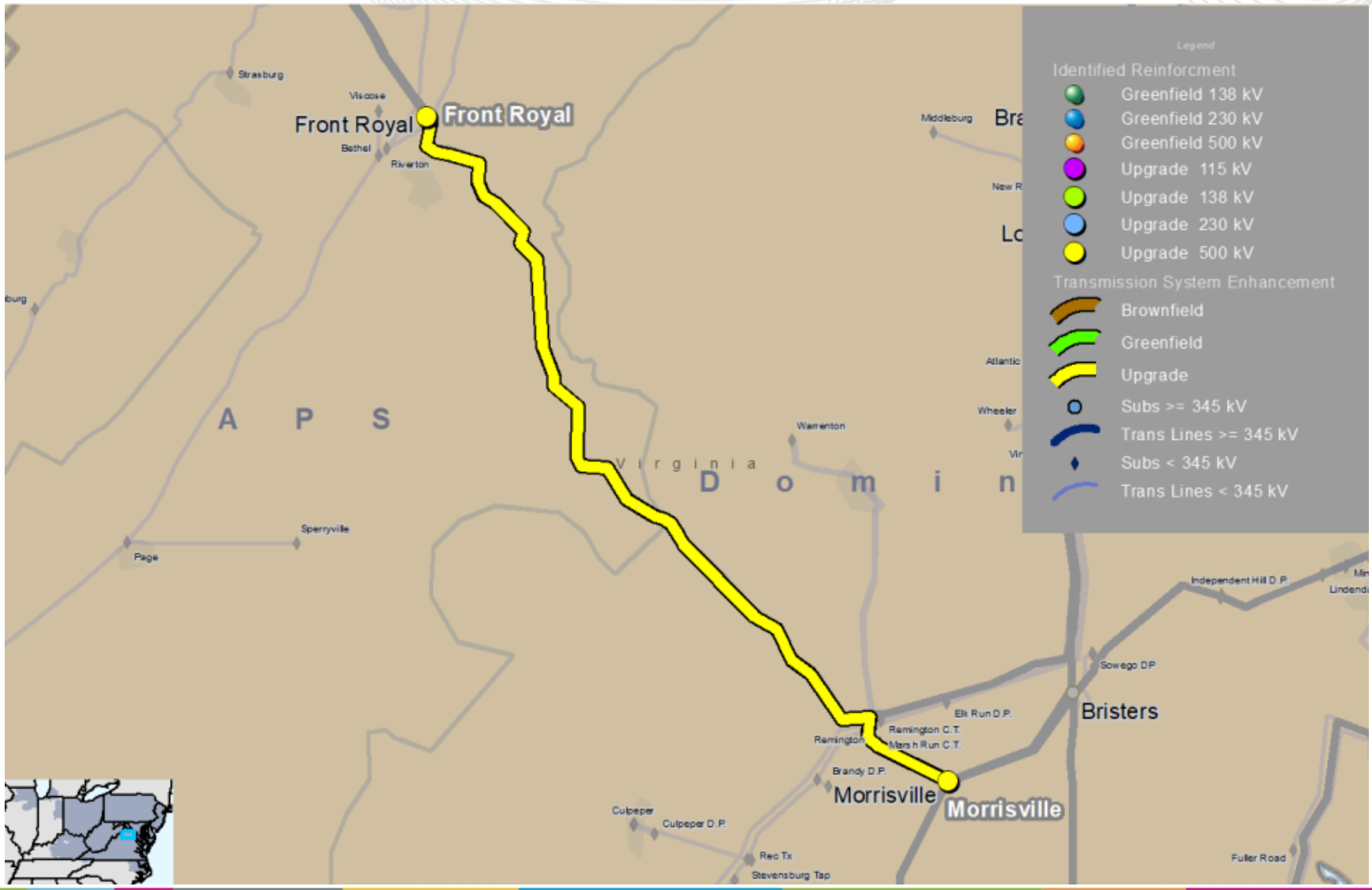


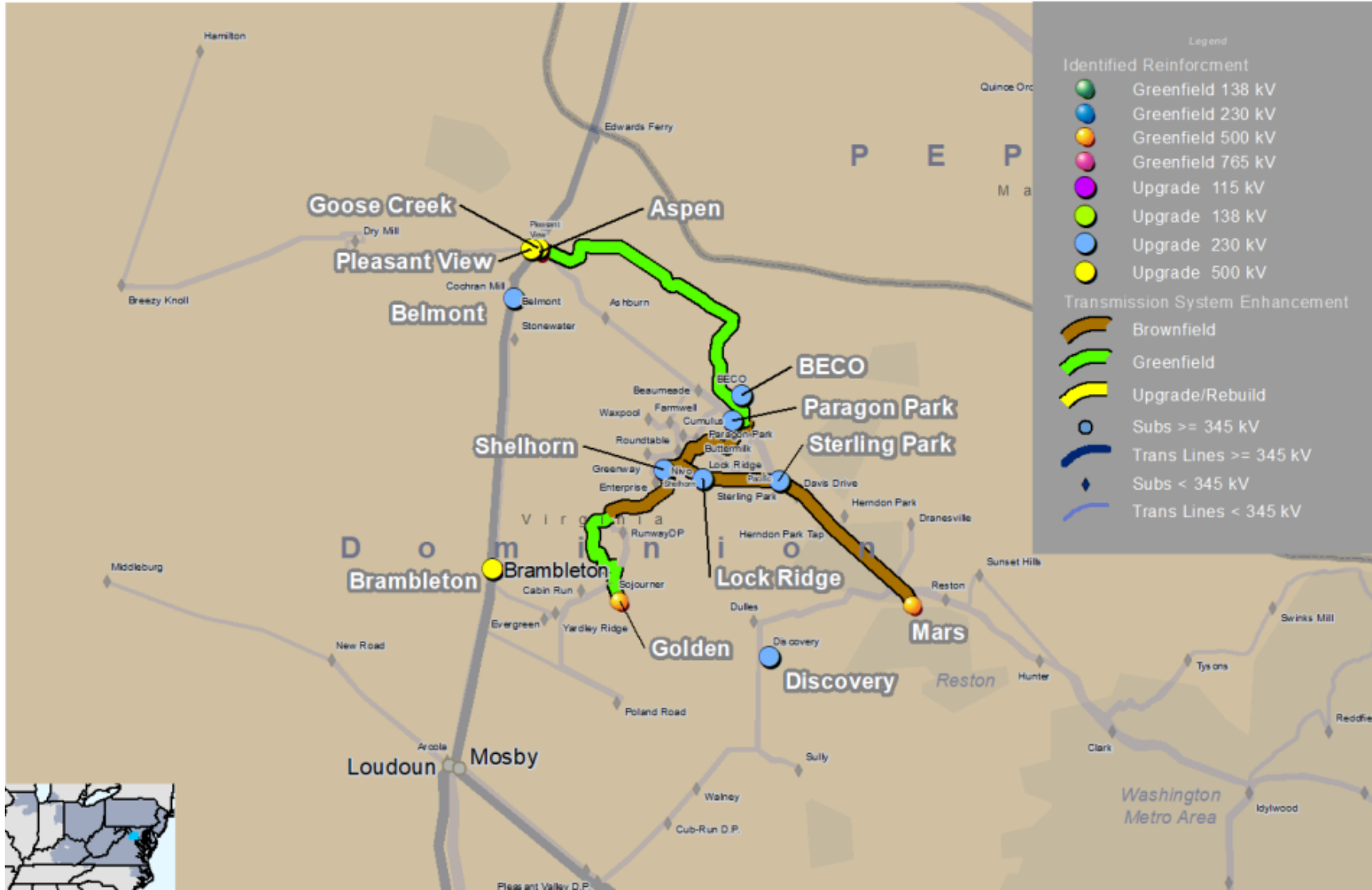






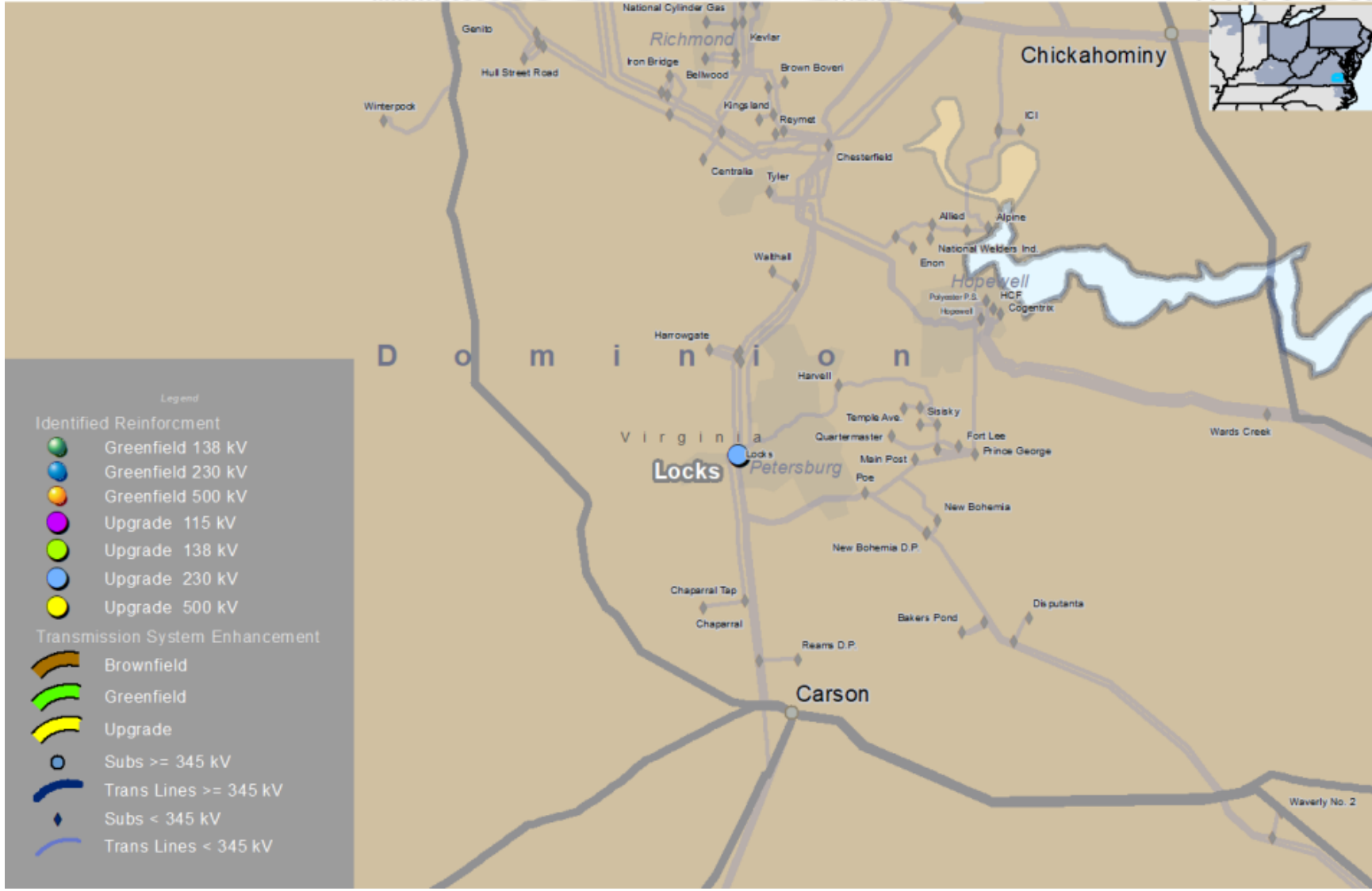


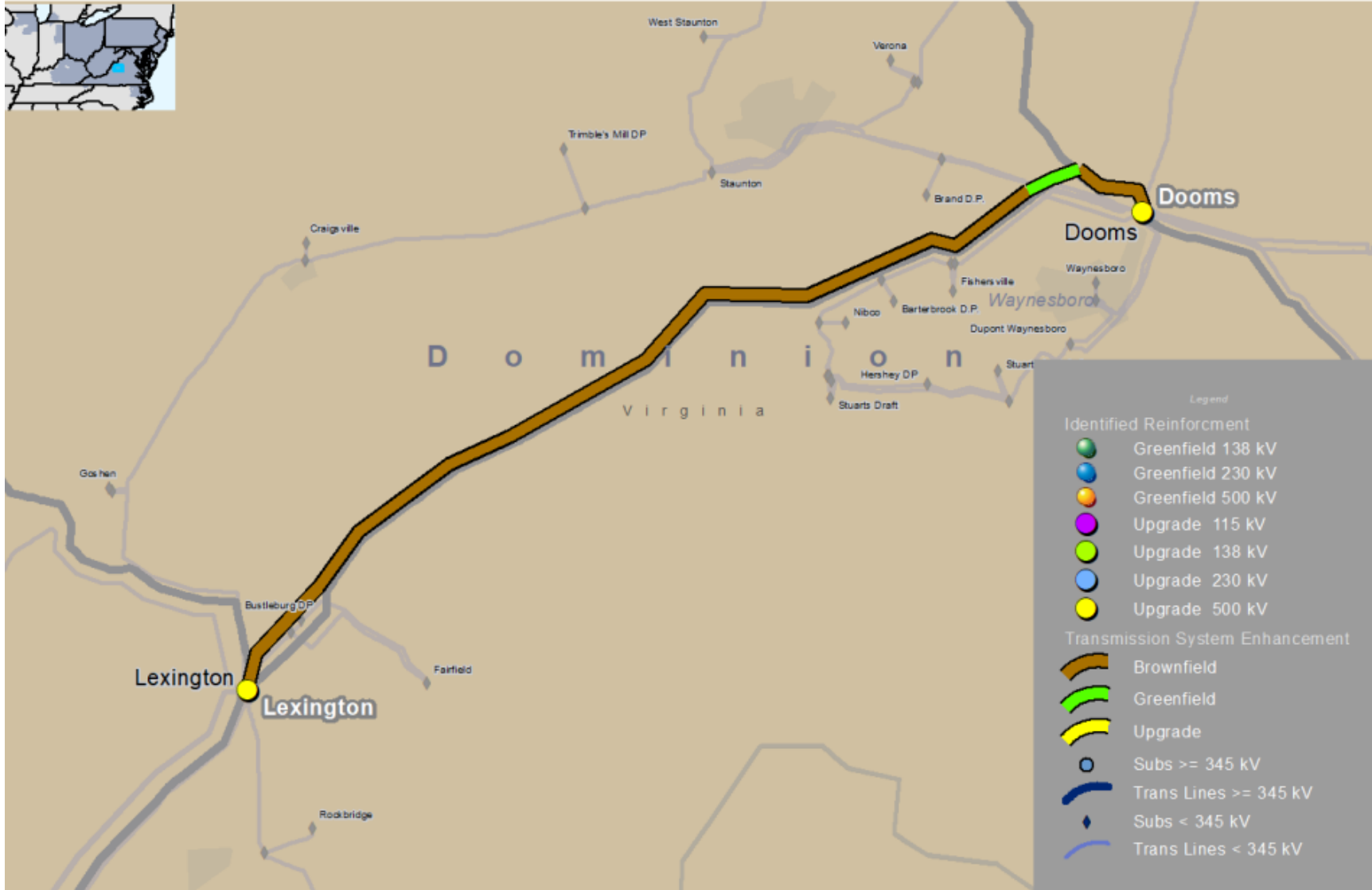




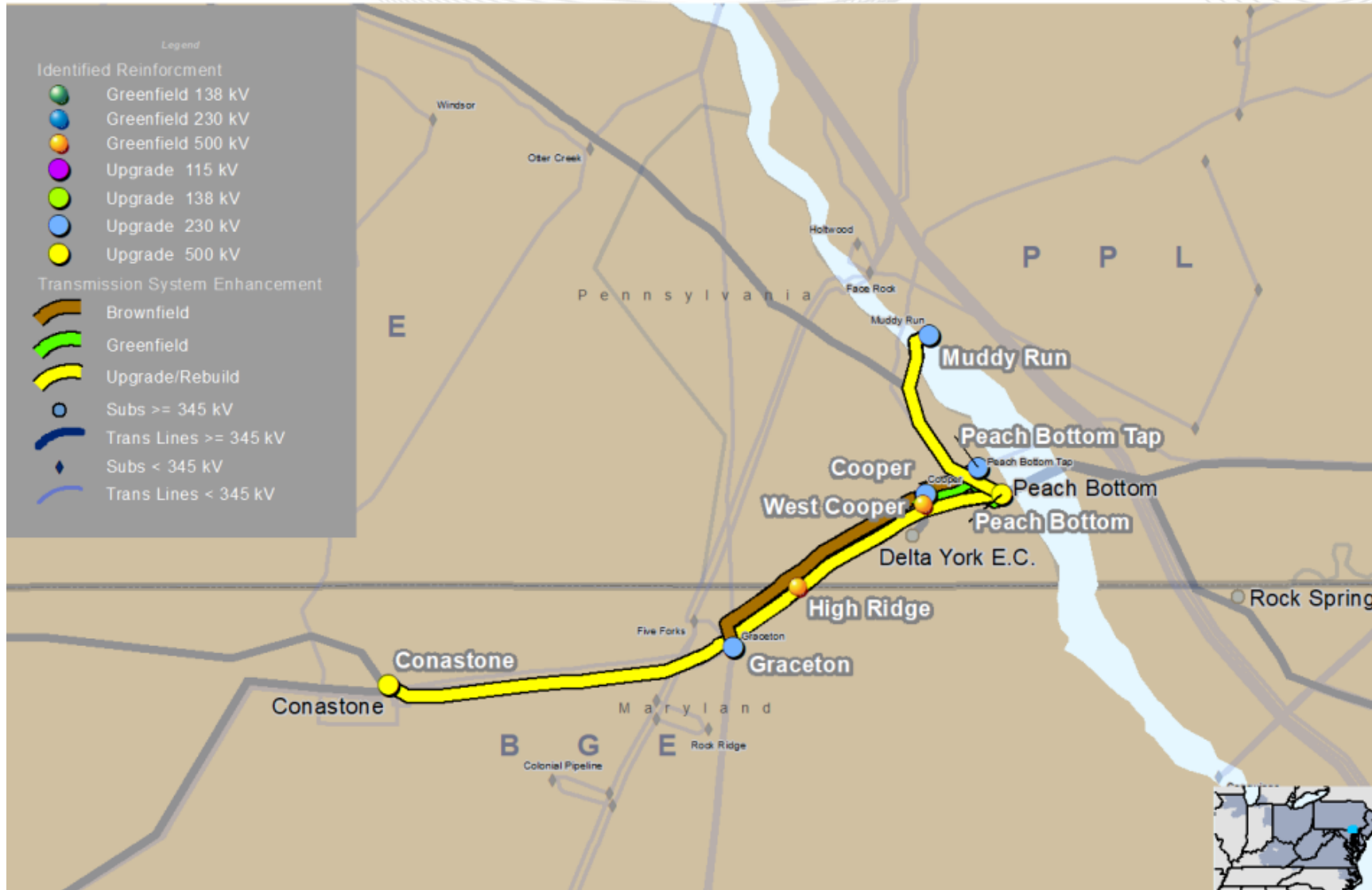


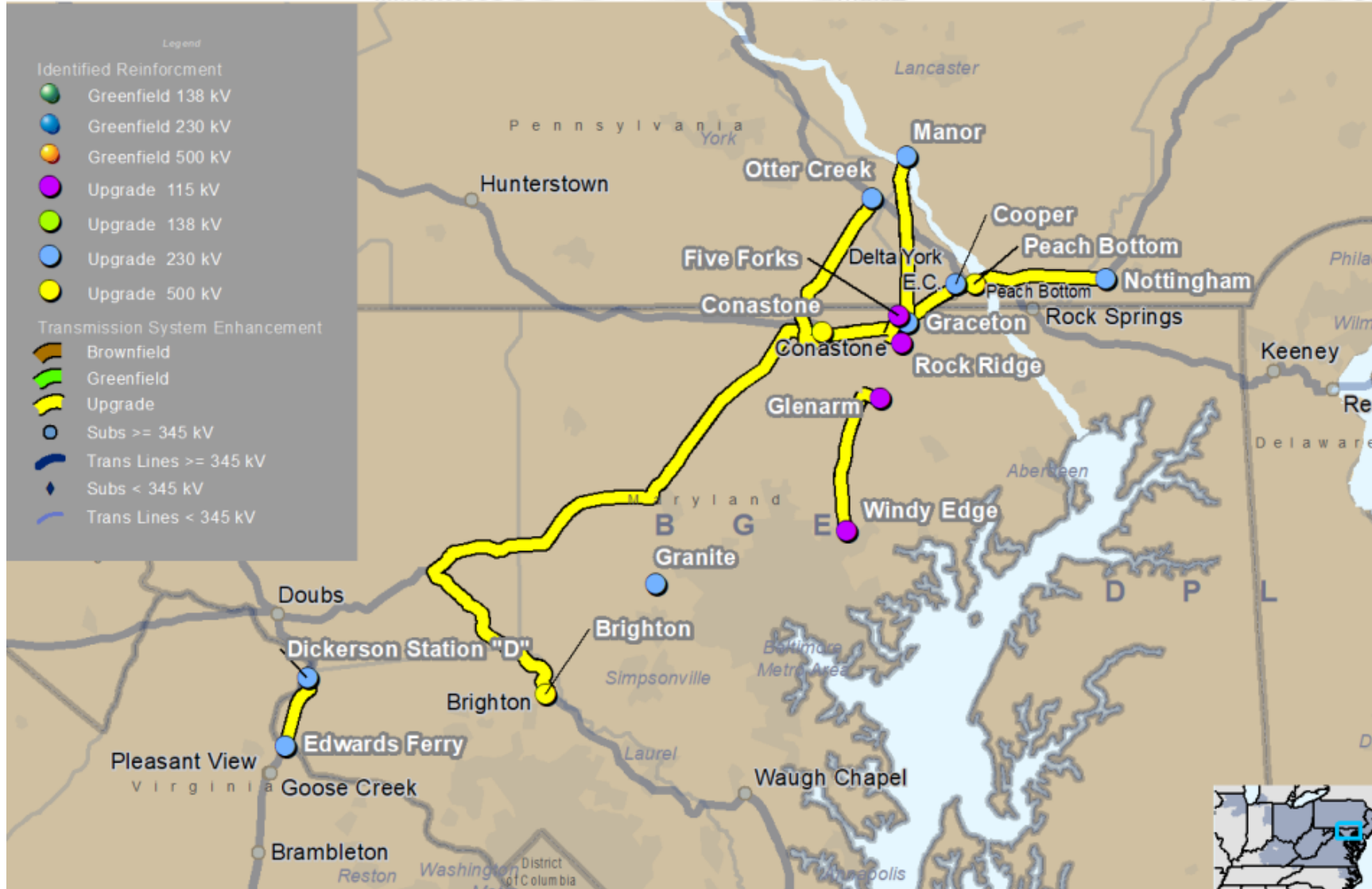


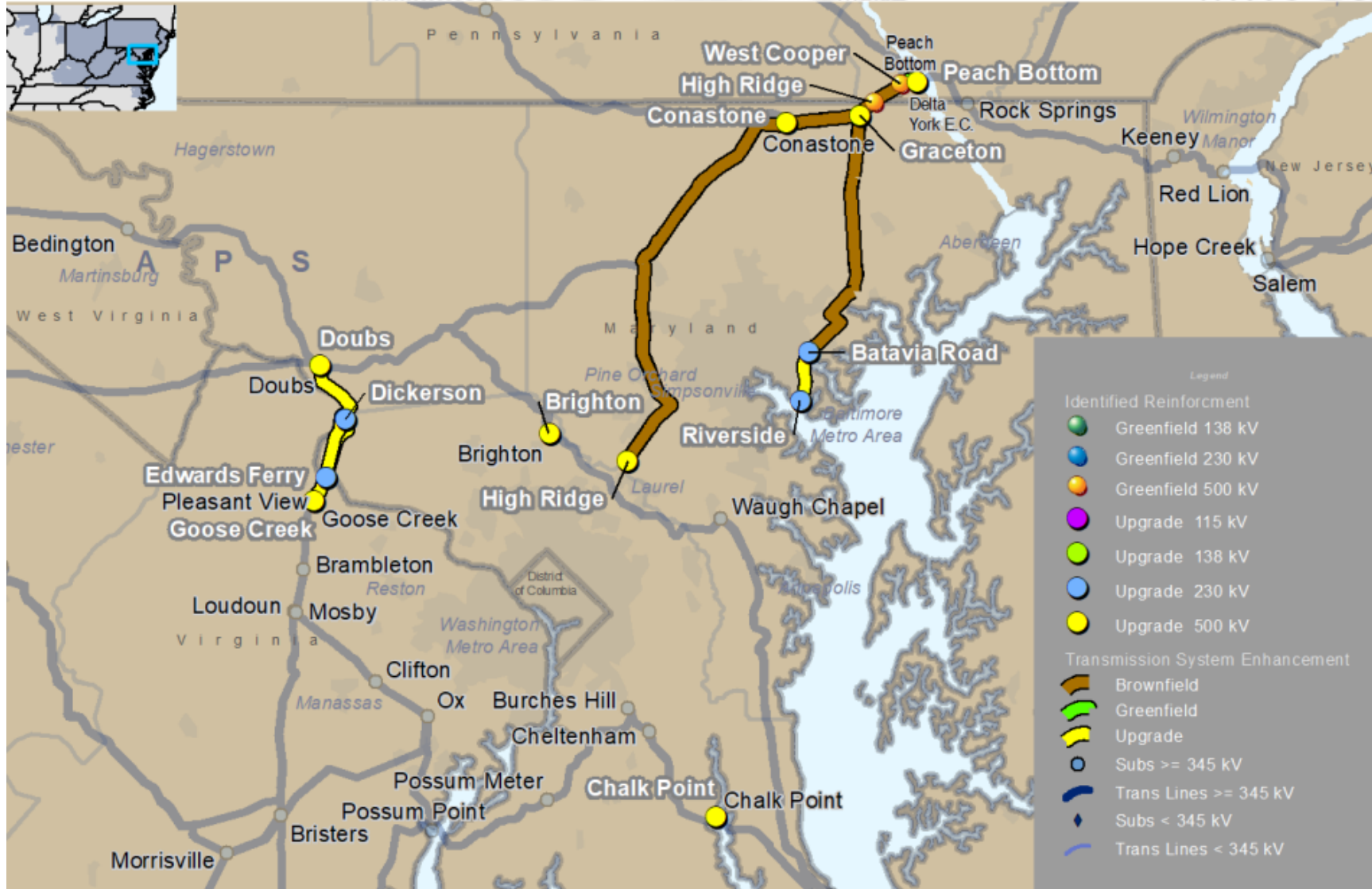


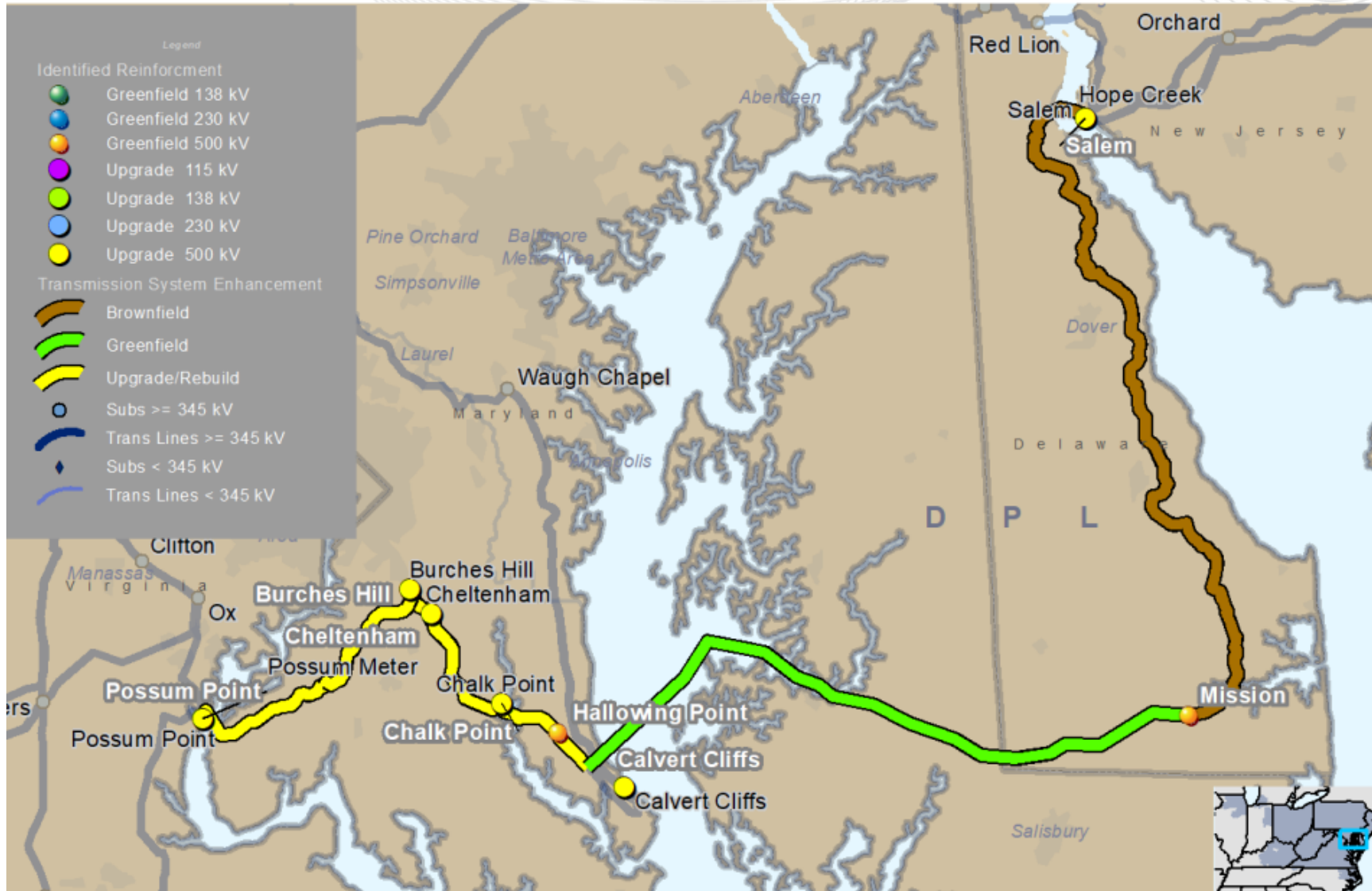


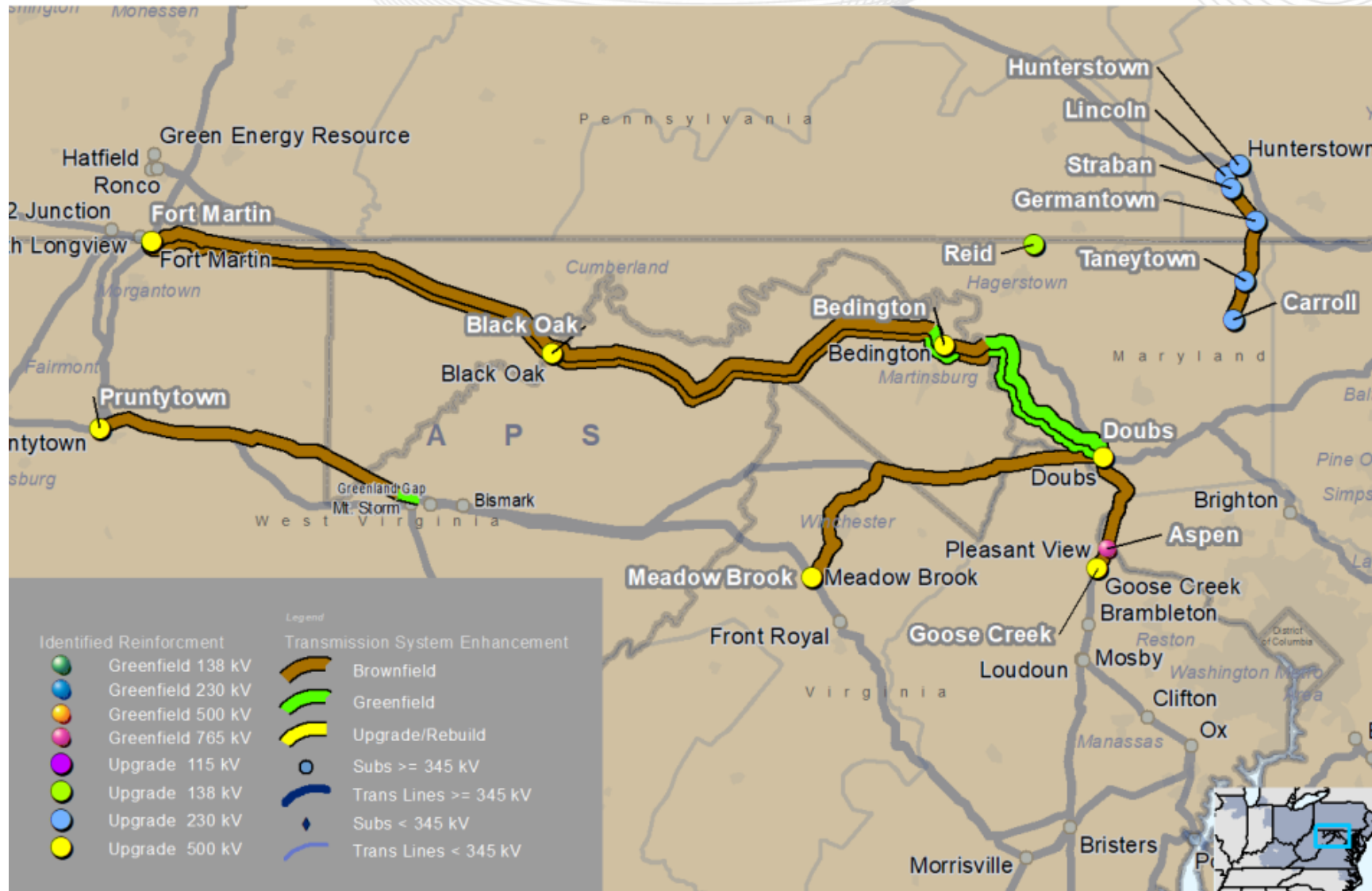


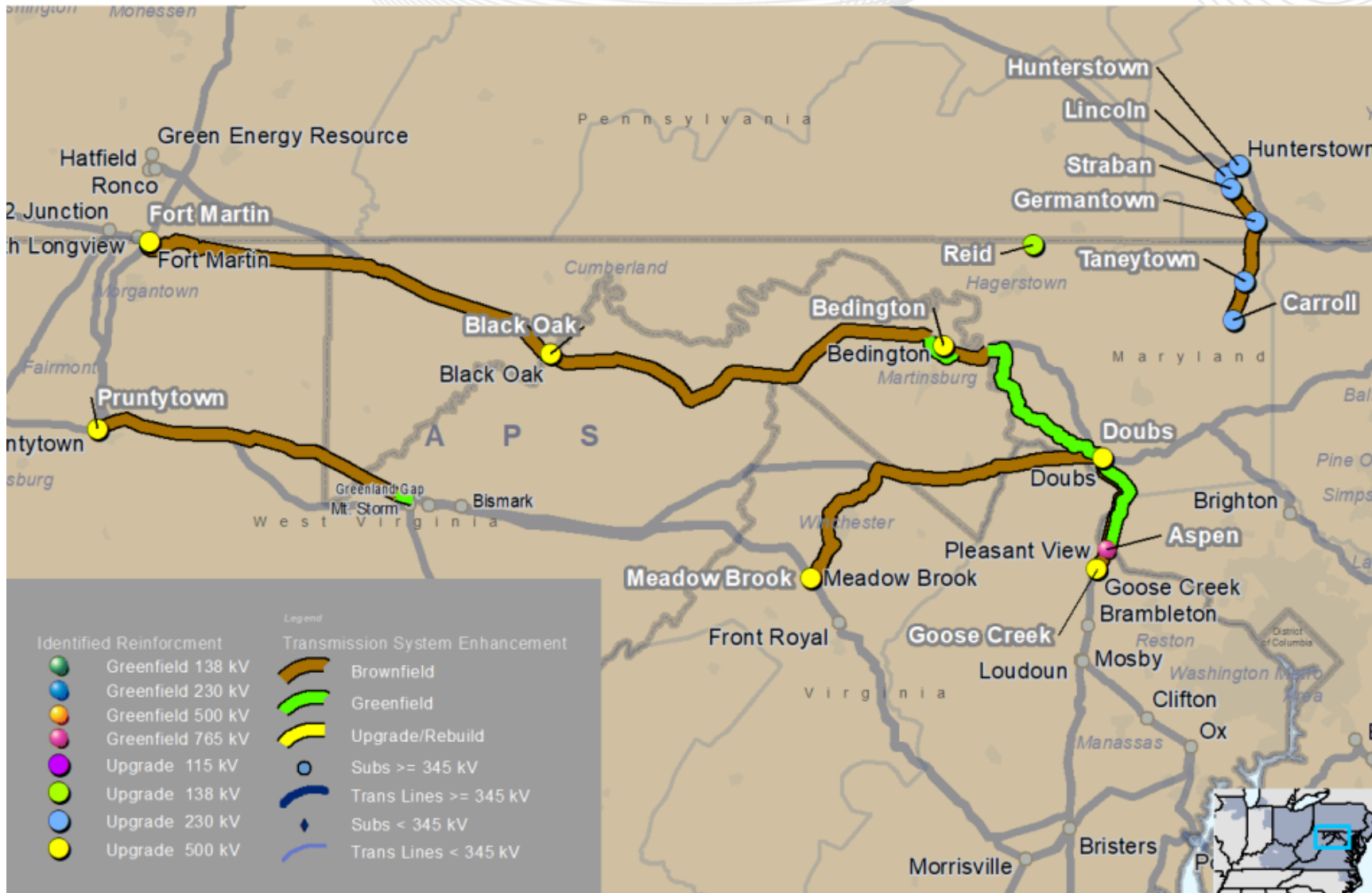


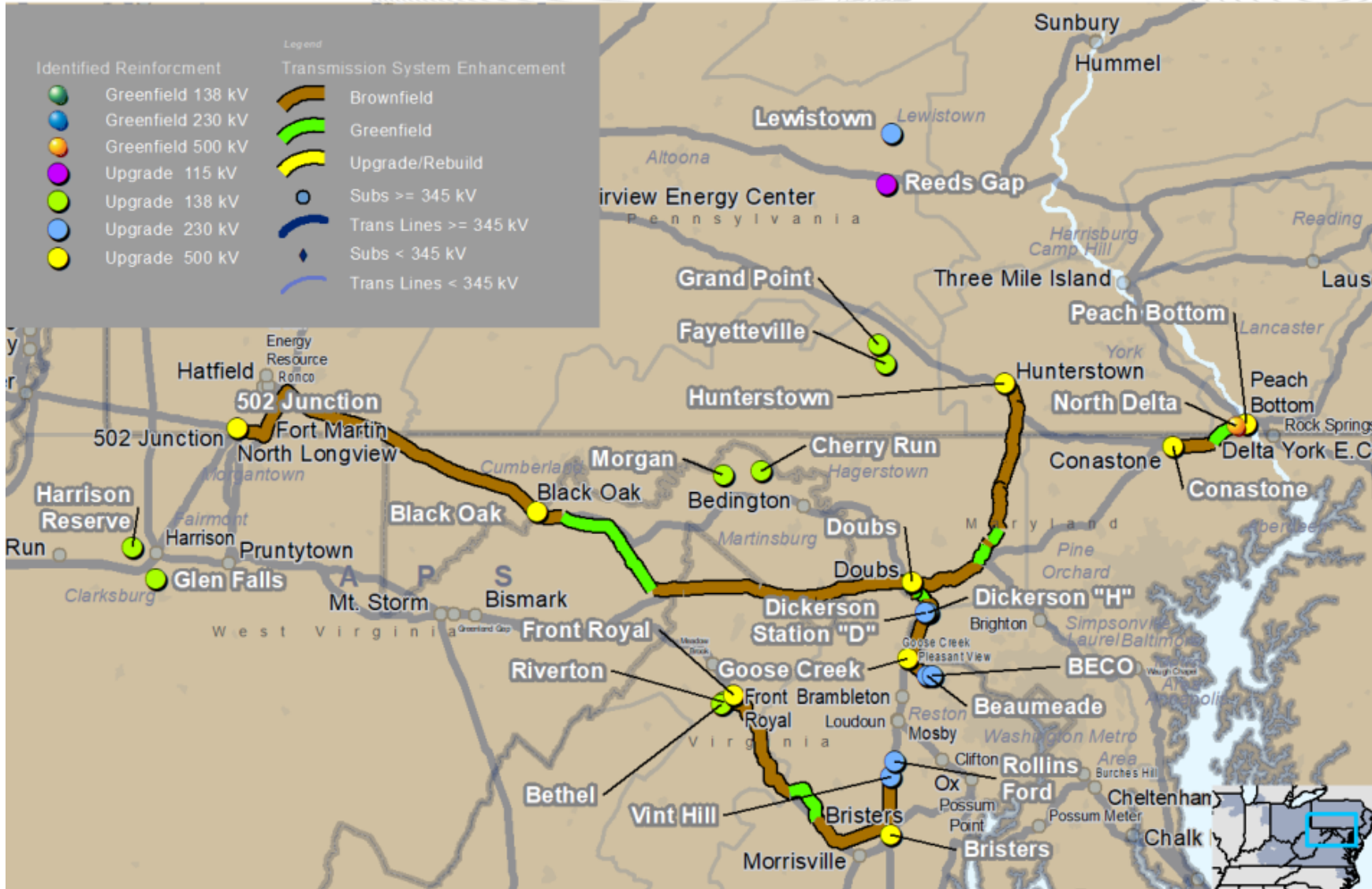


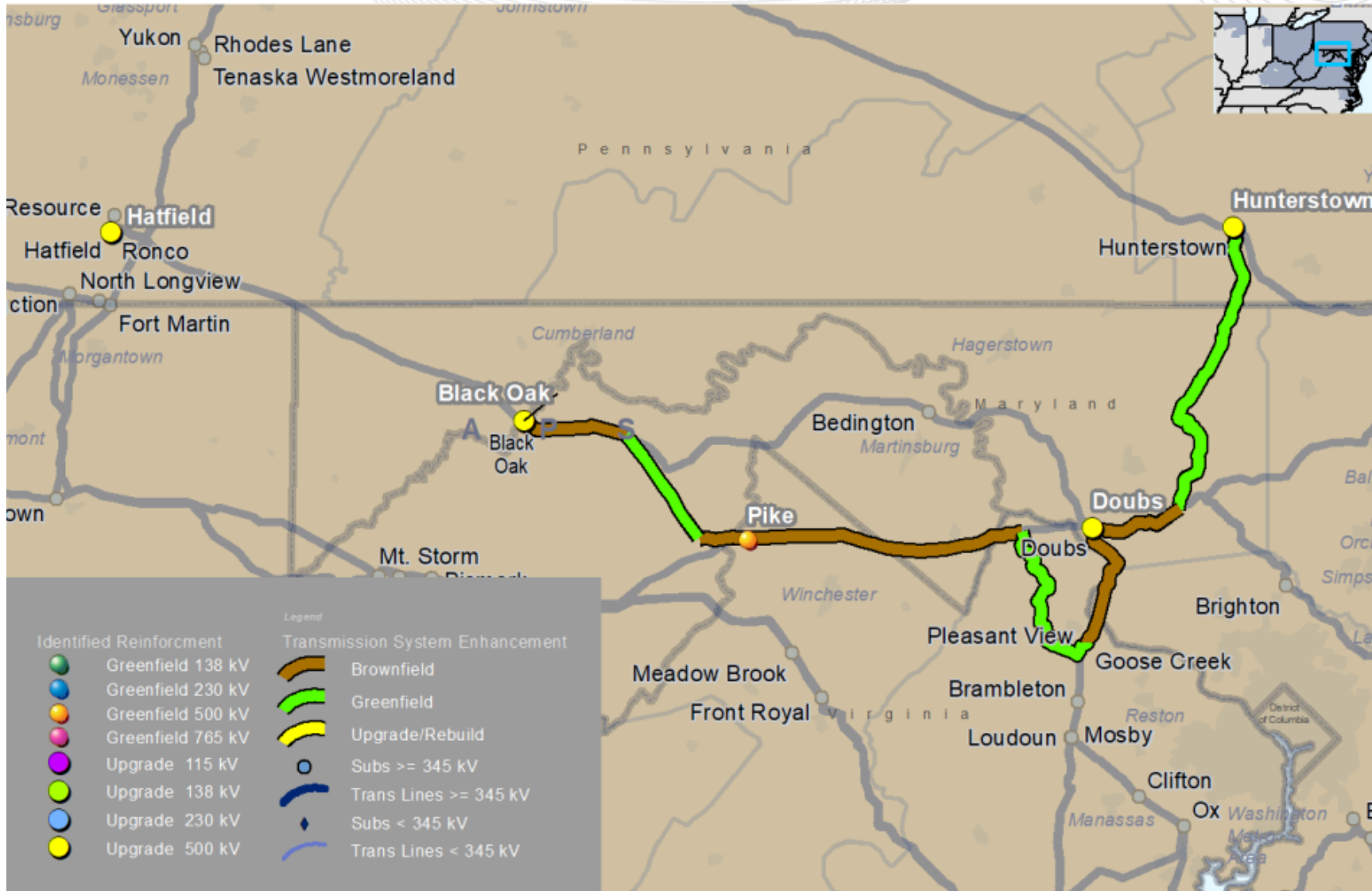




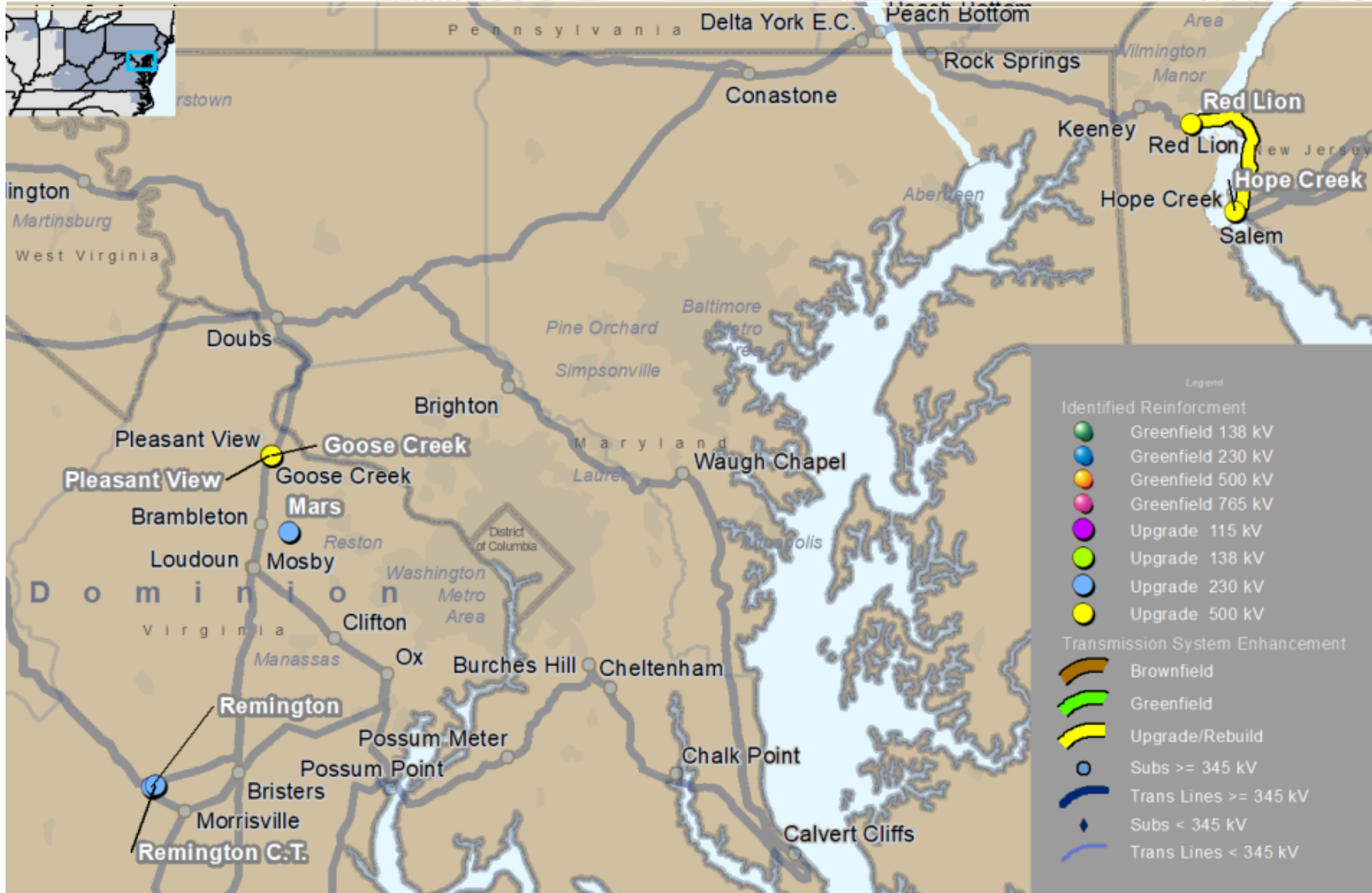




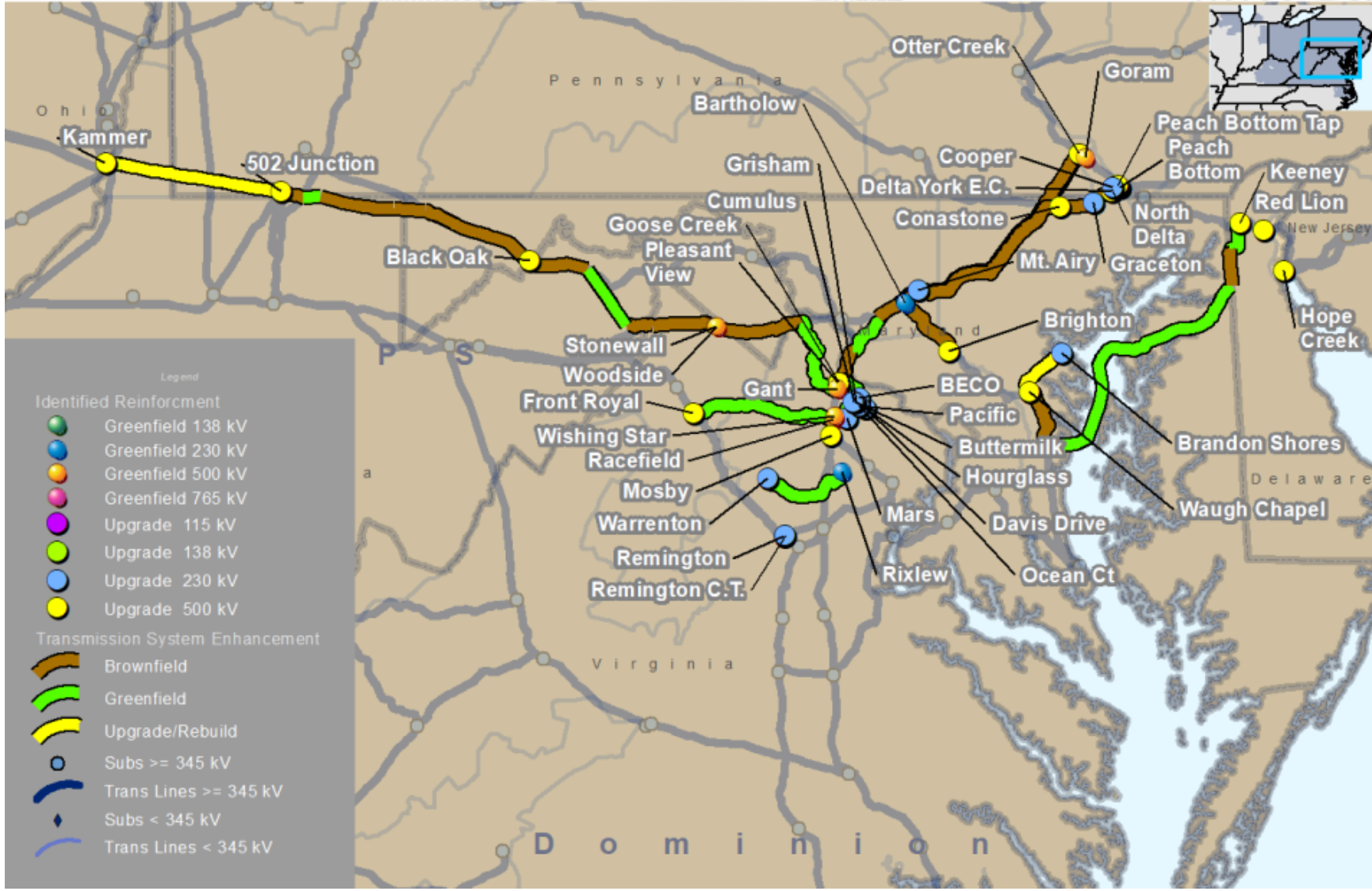


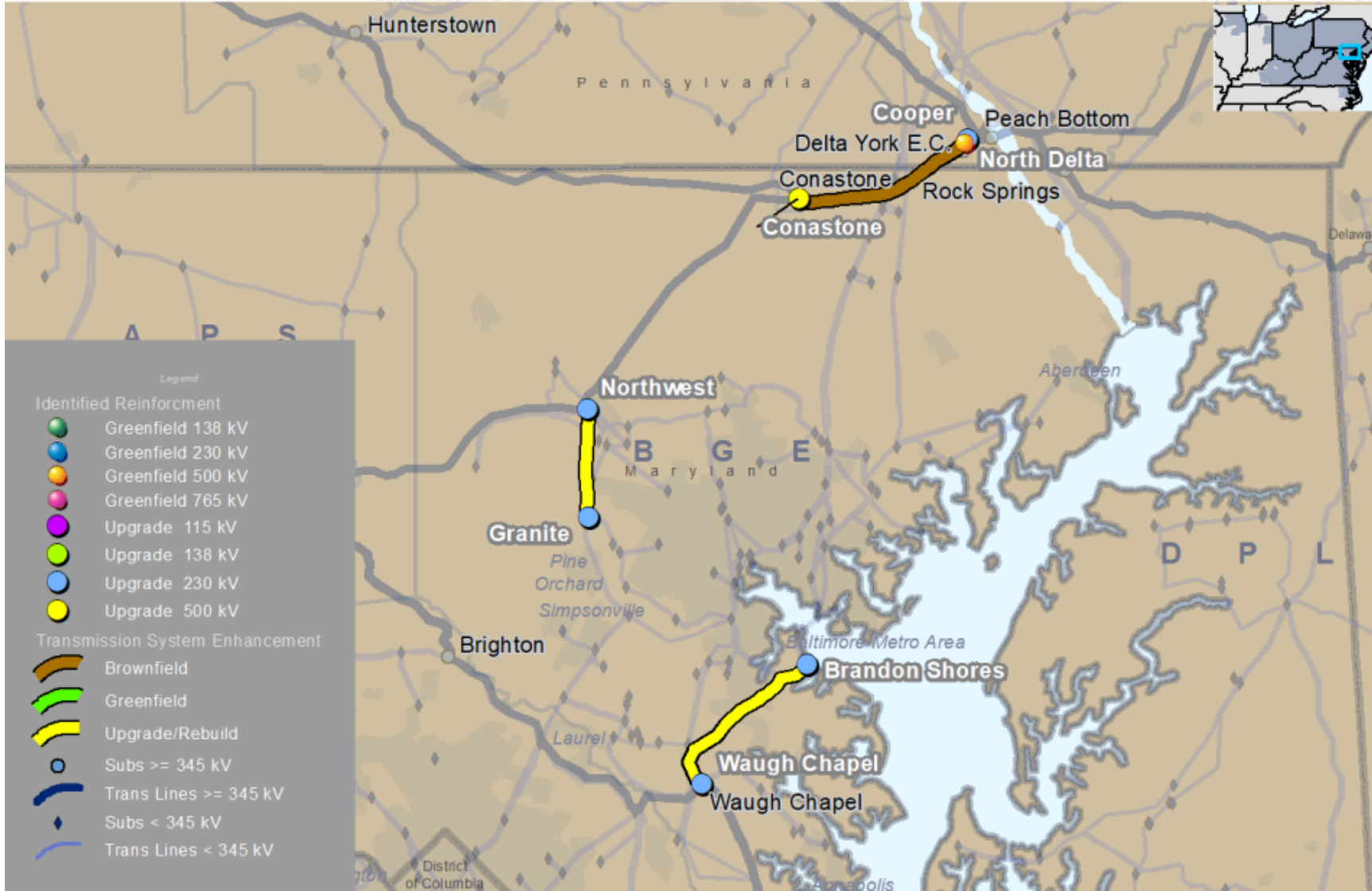


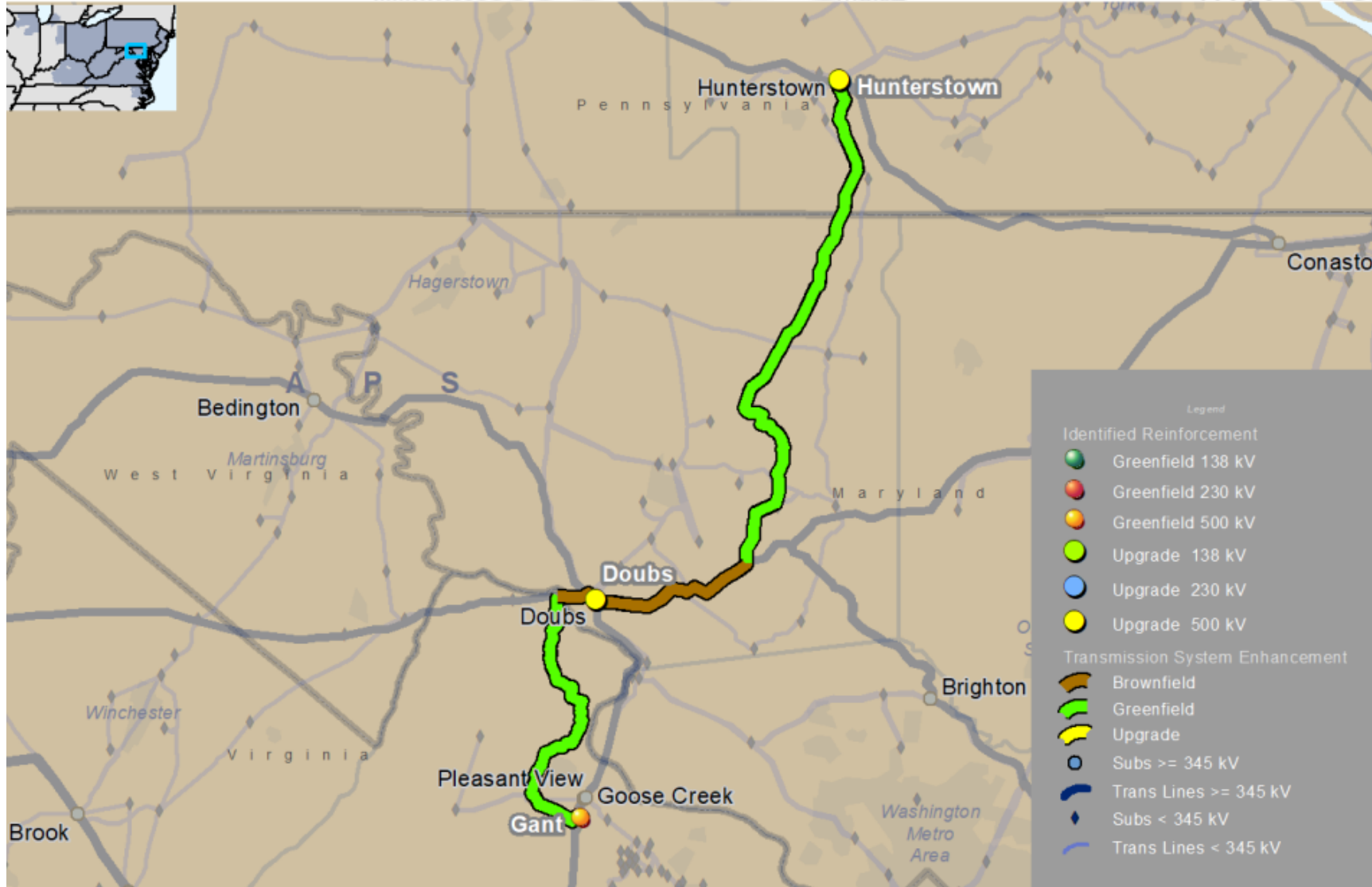


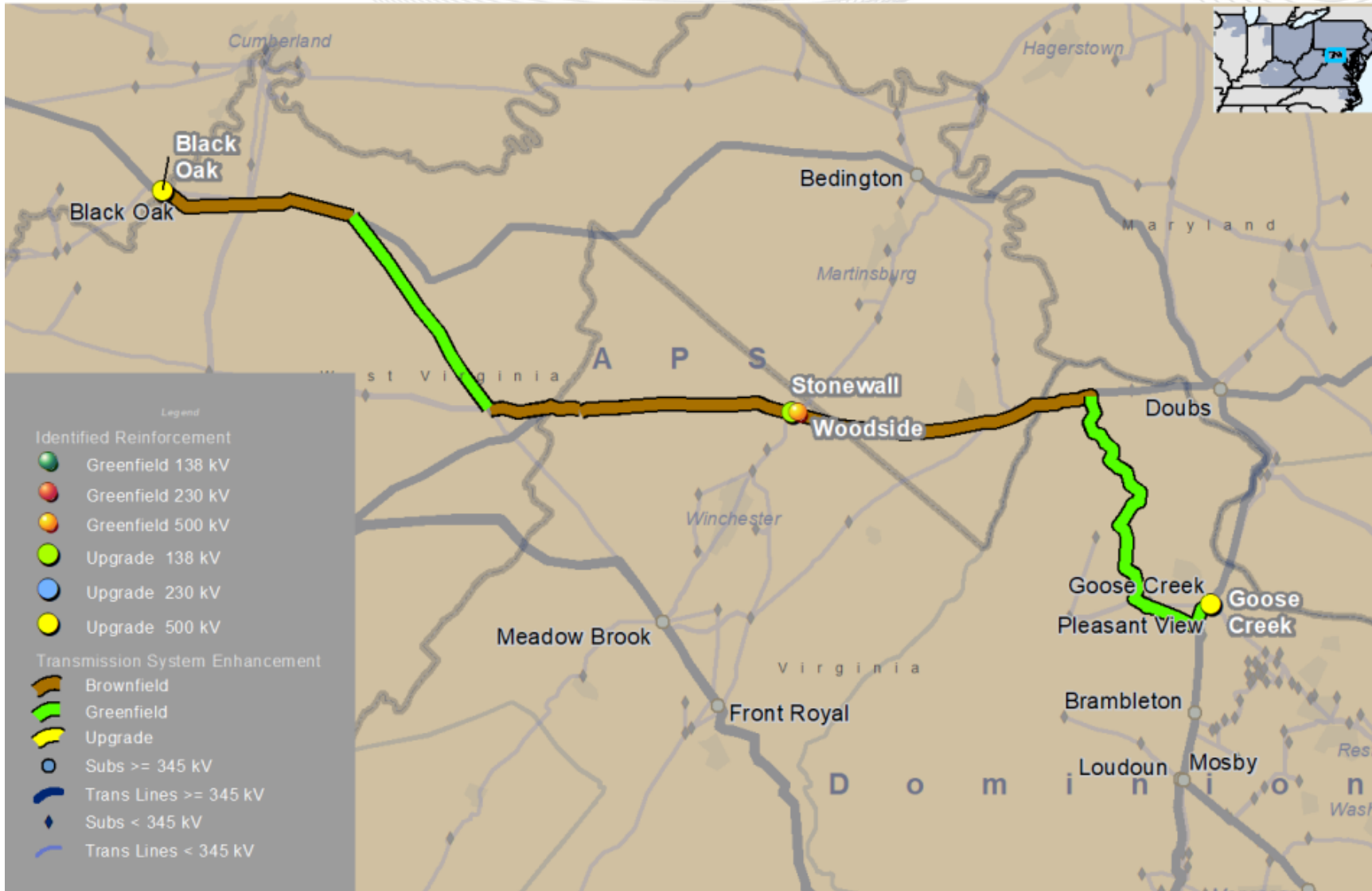


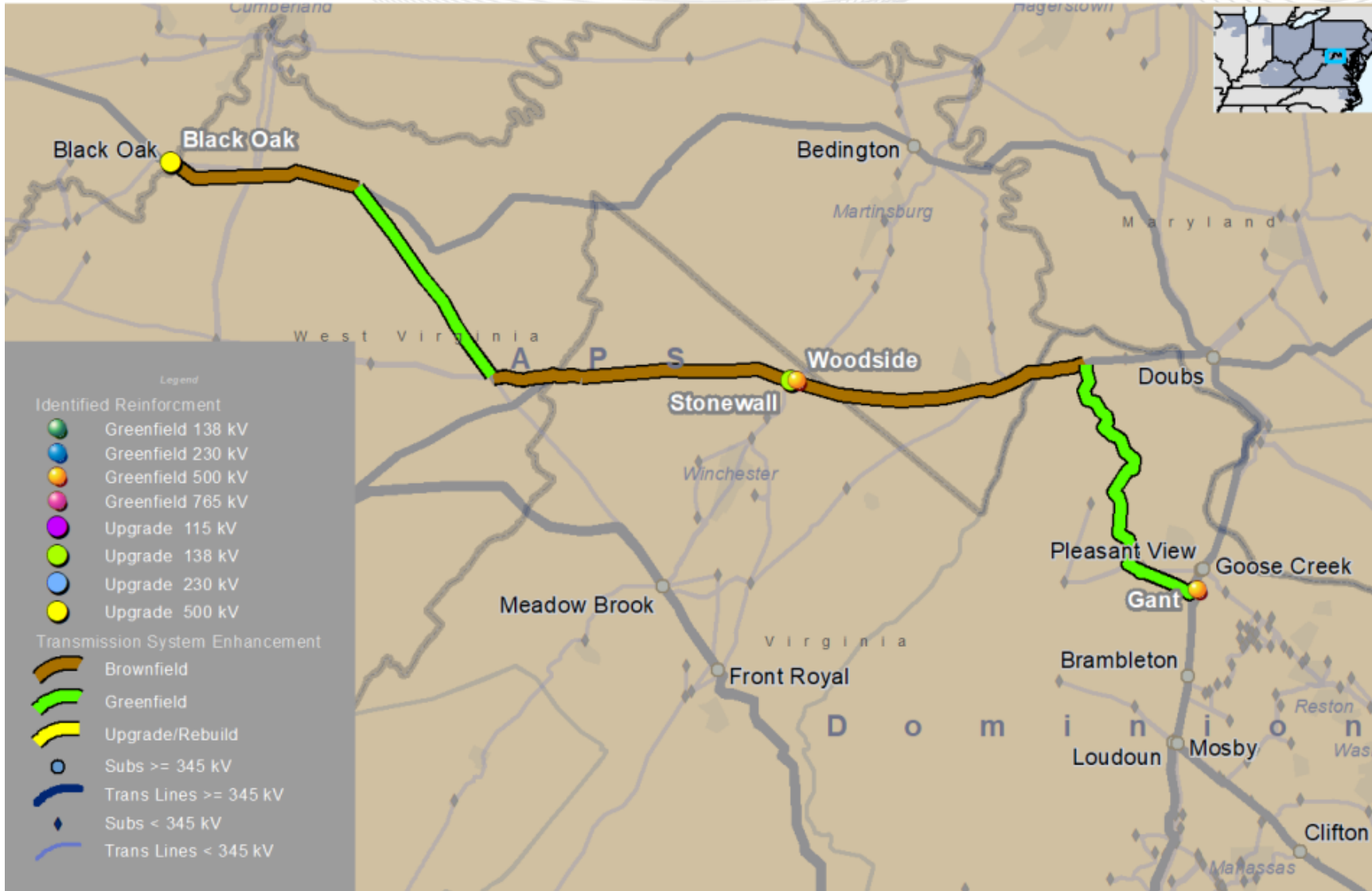
2022 Window 3 proposals – Nextera - 175 with 663, 853, 948

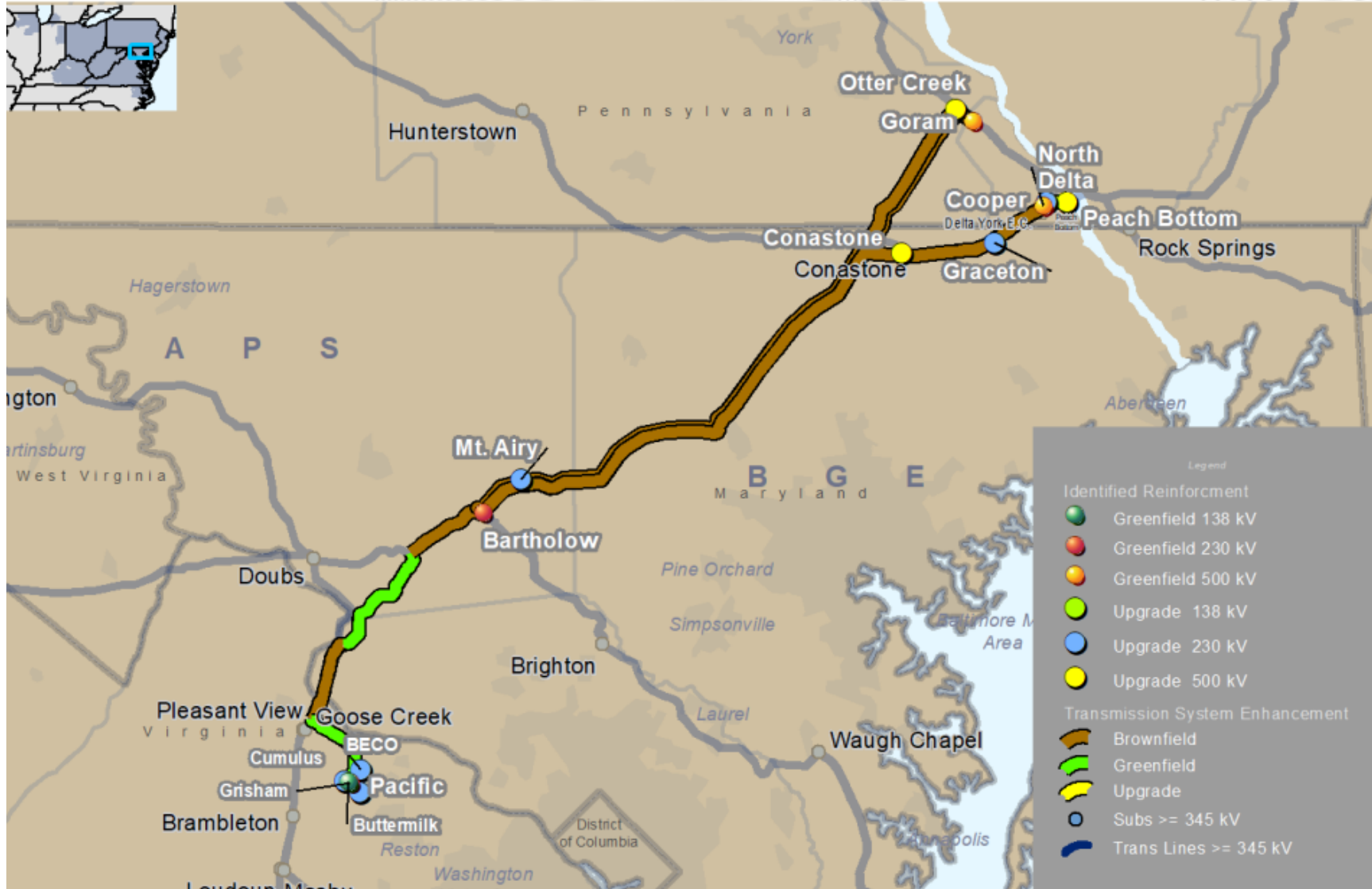




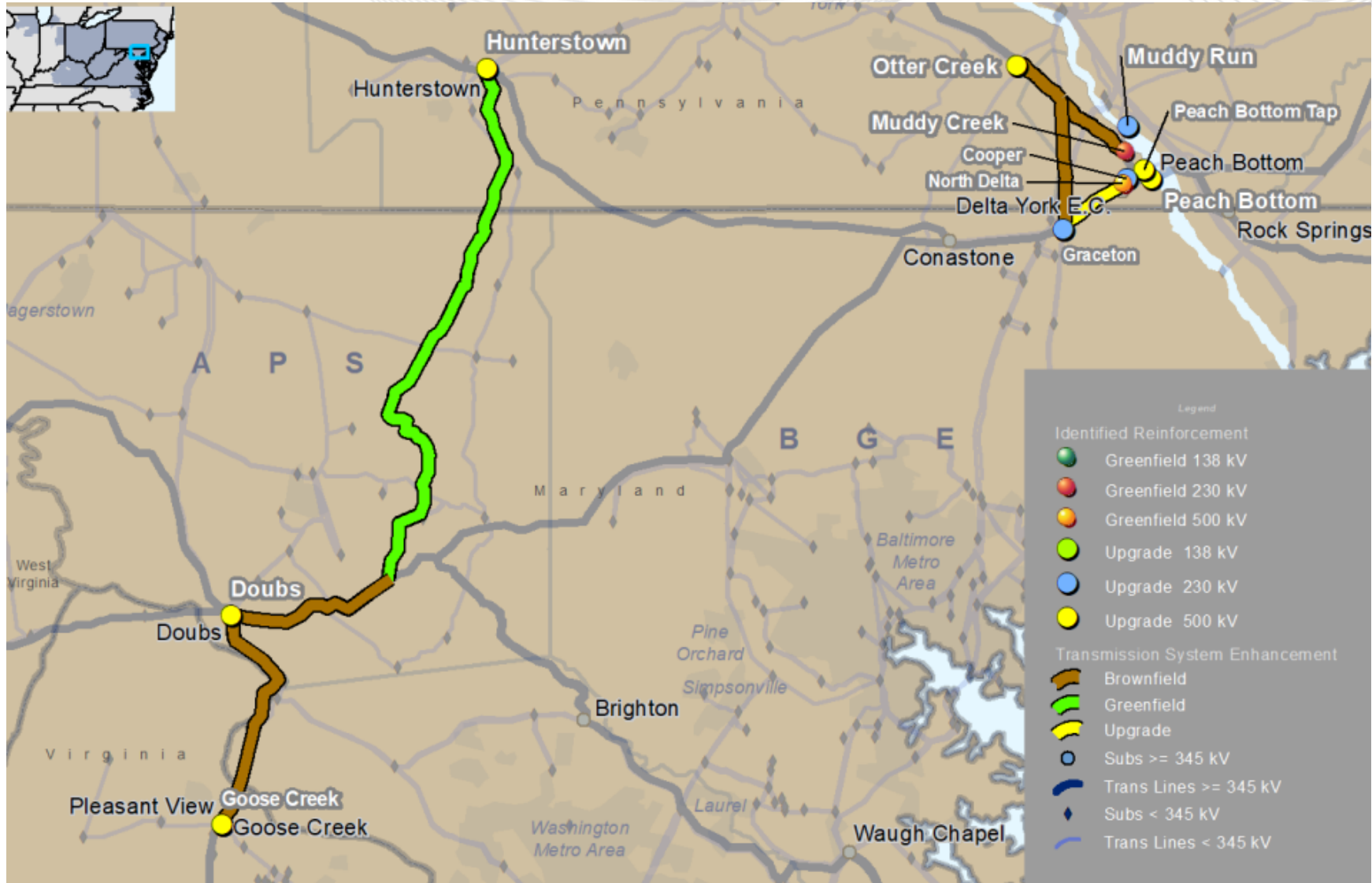


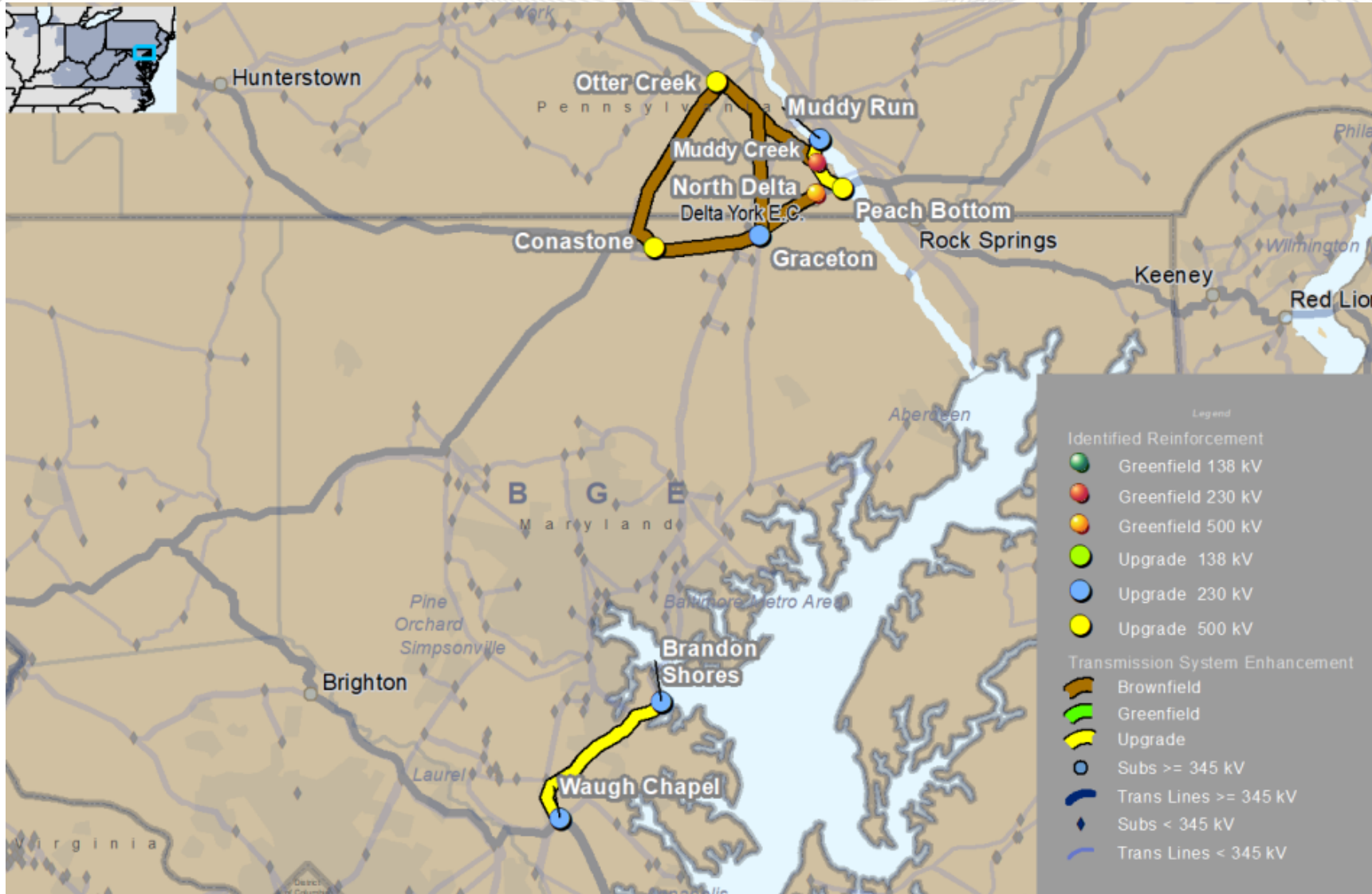




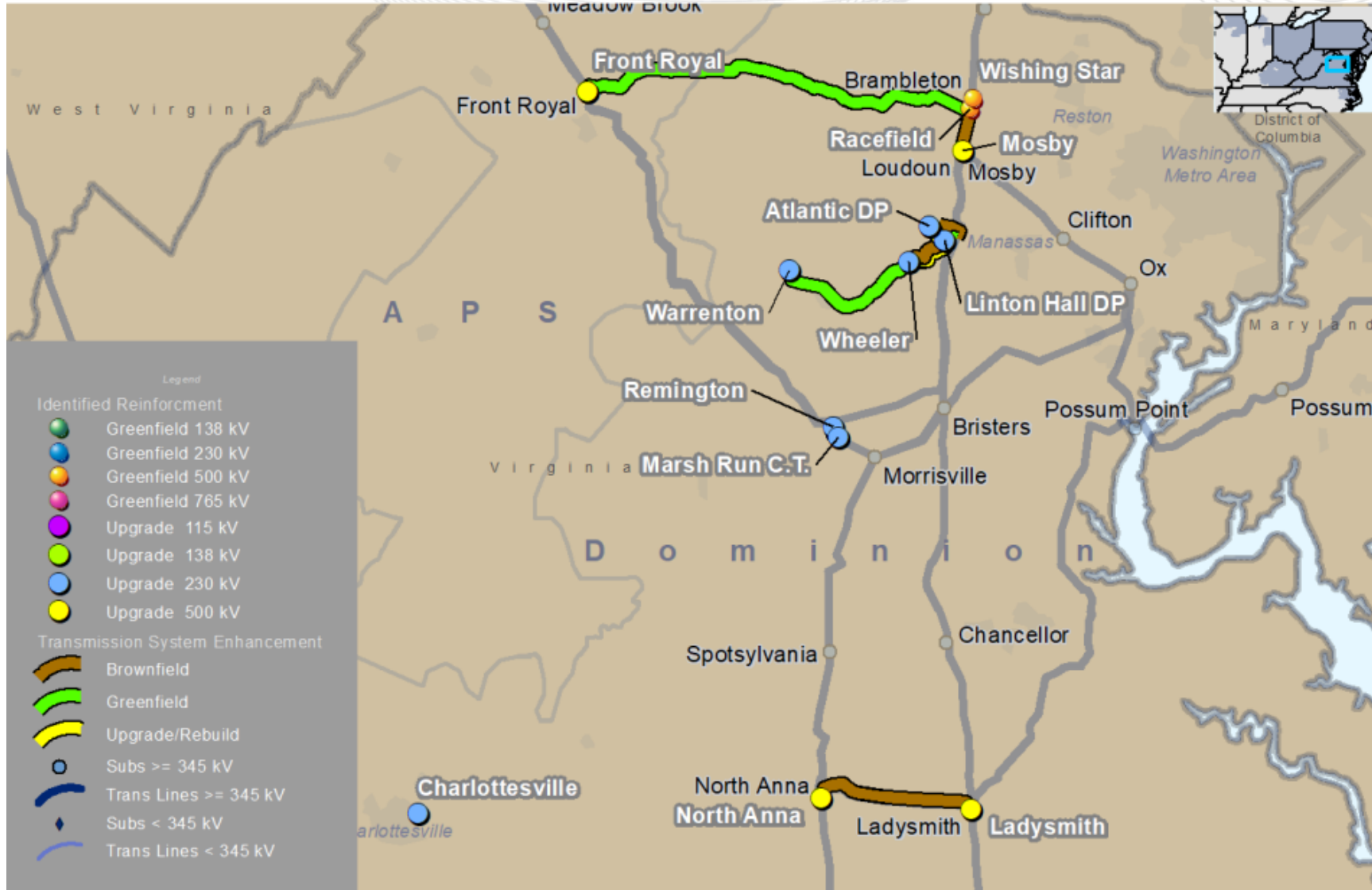


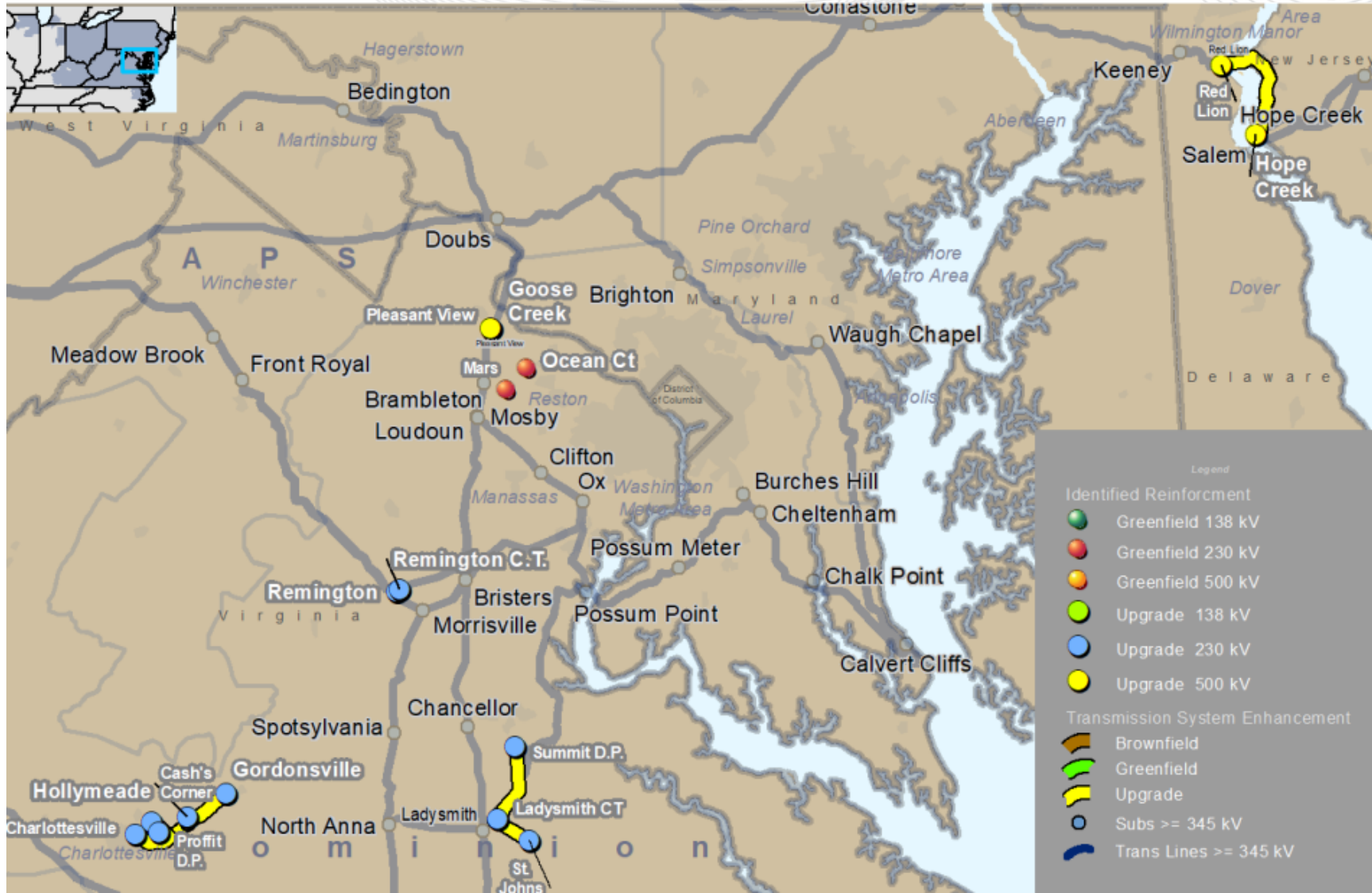


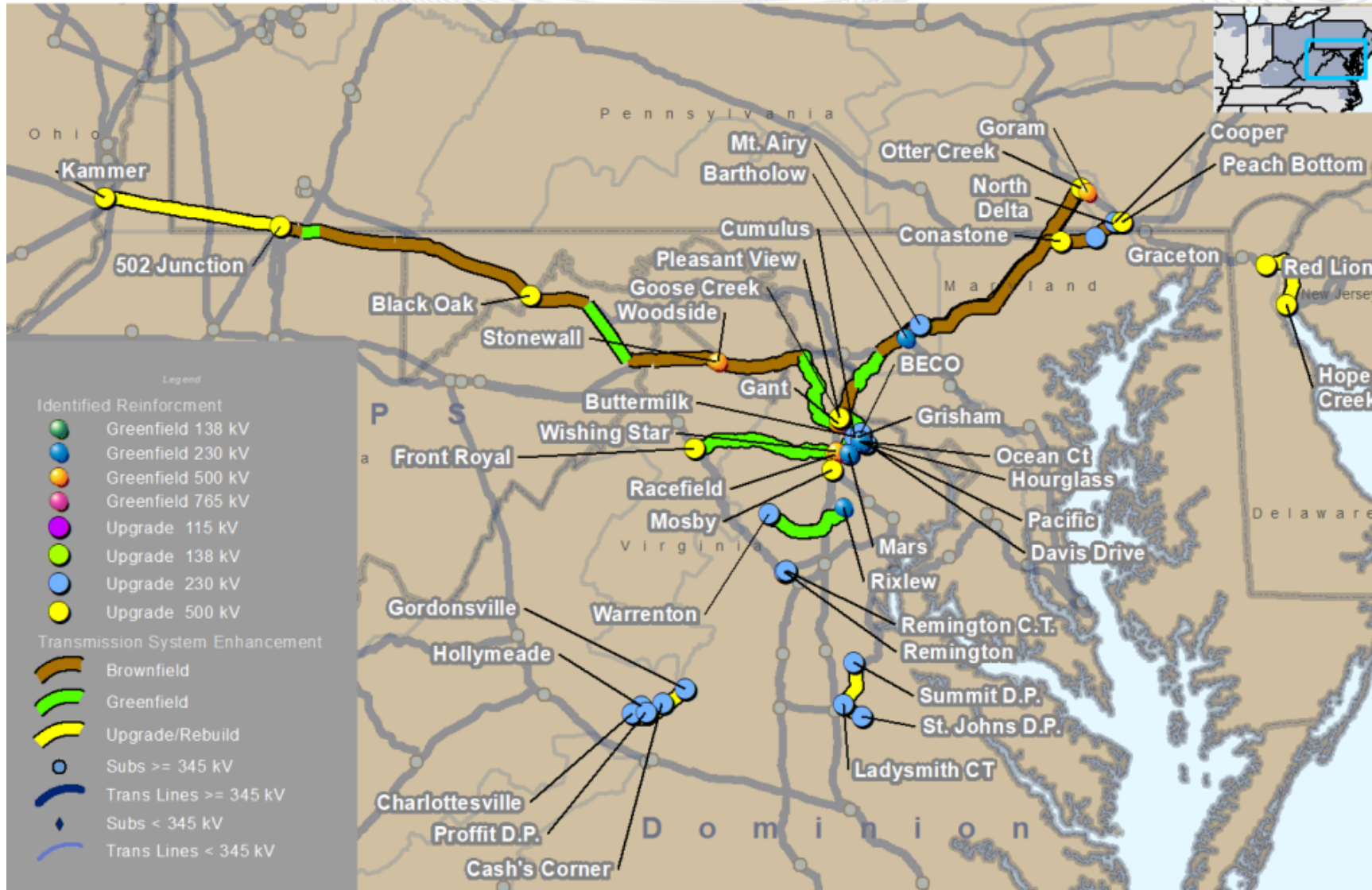


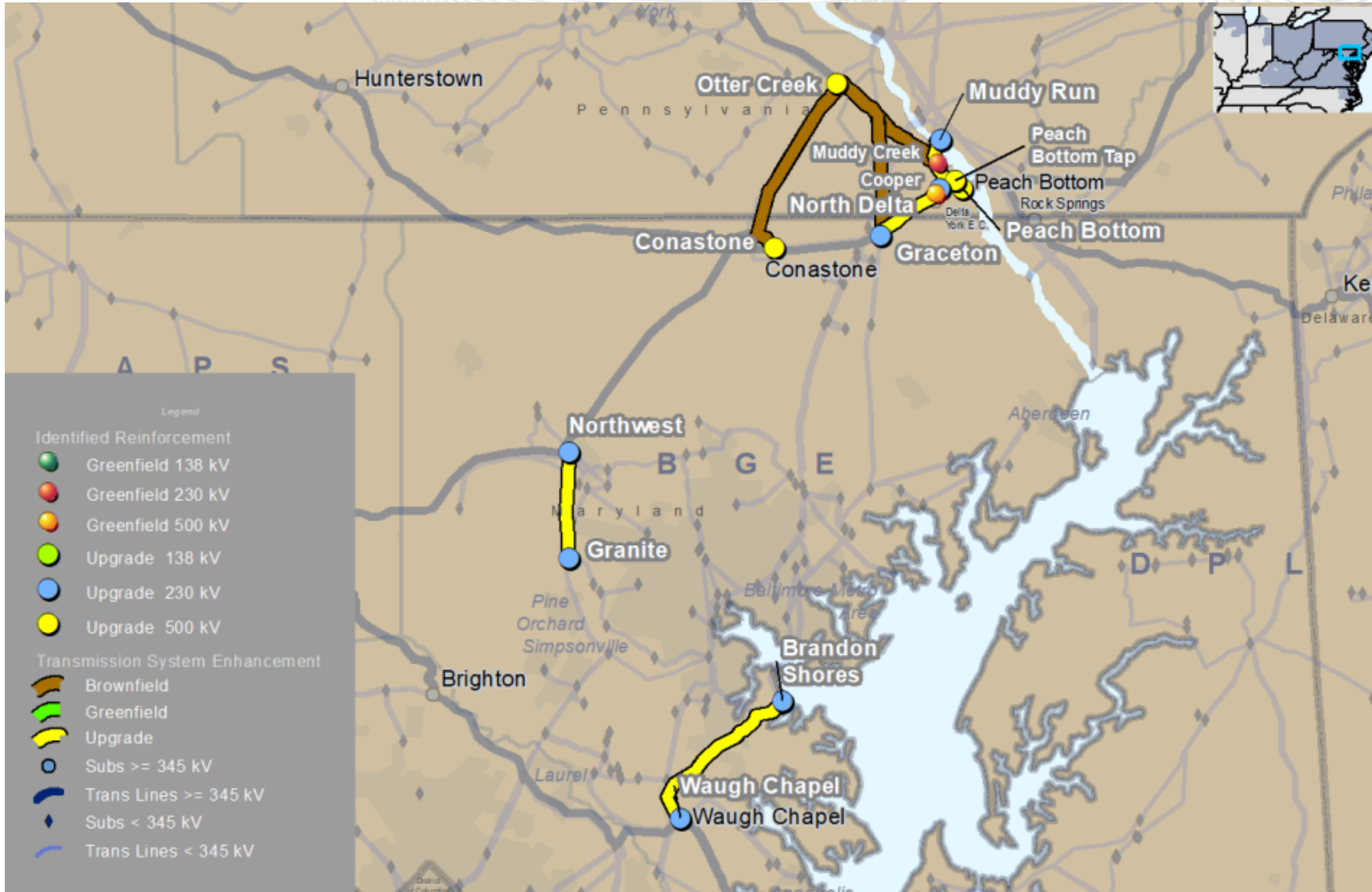


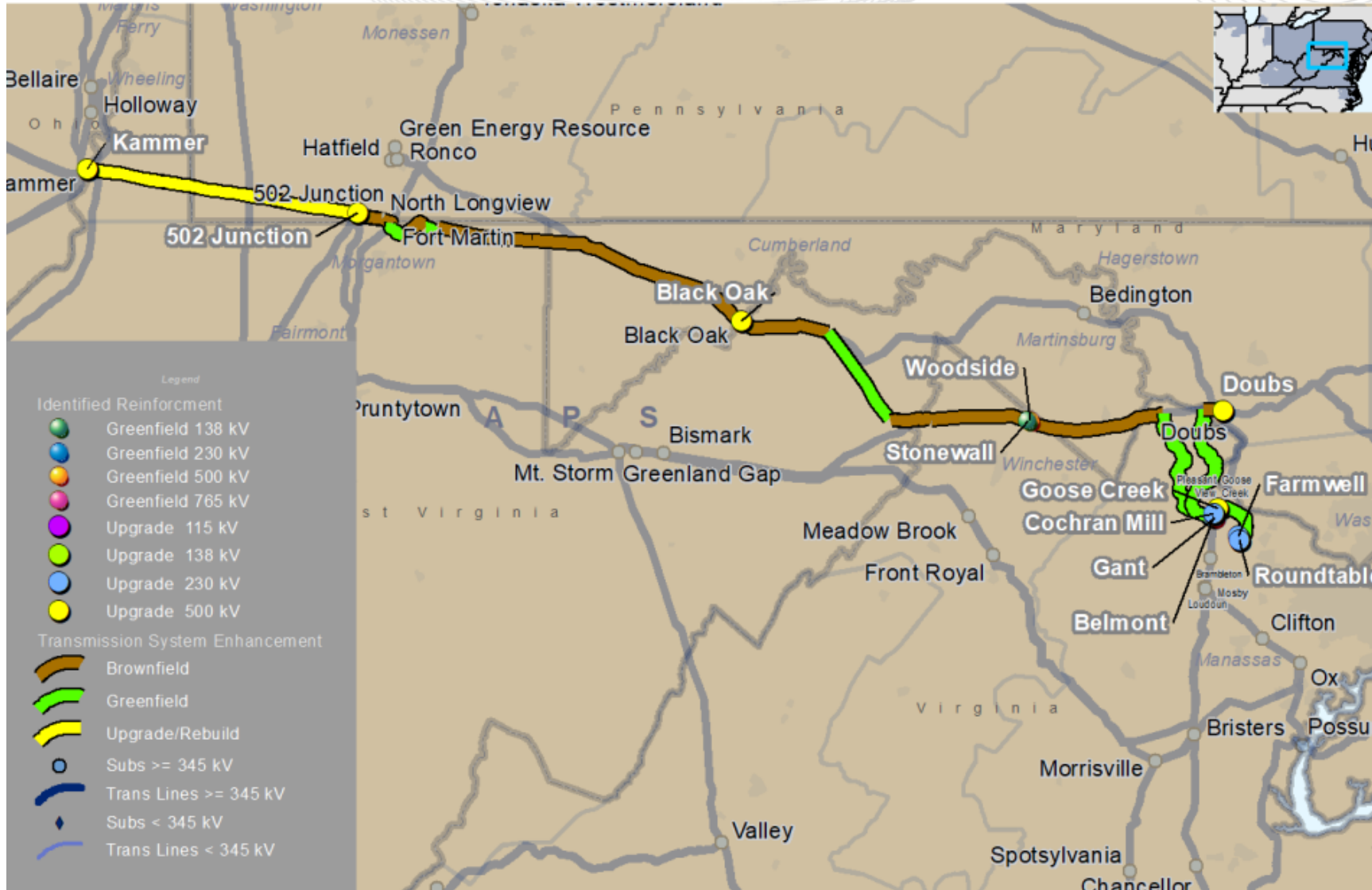


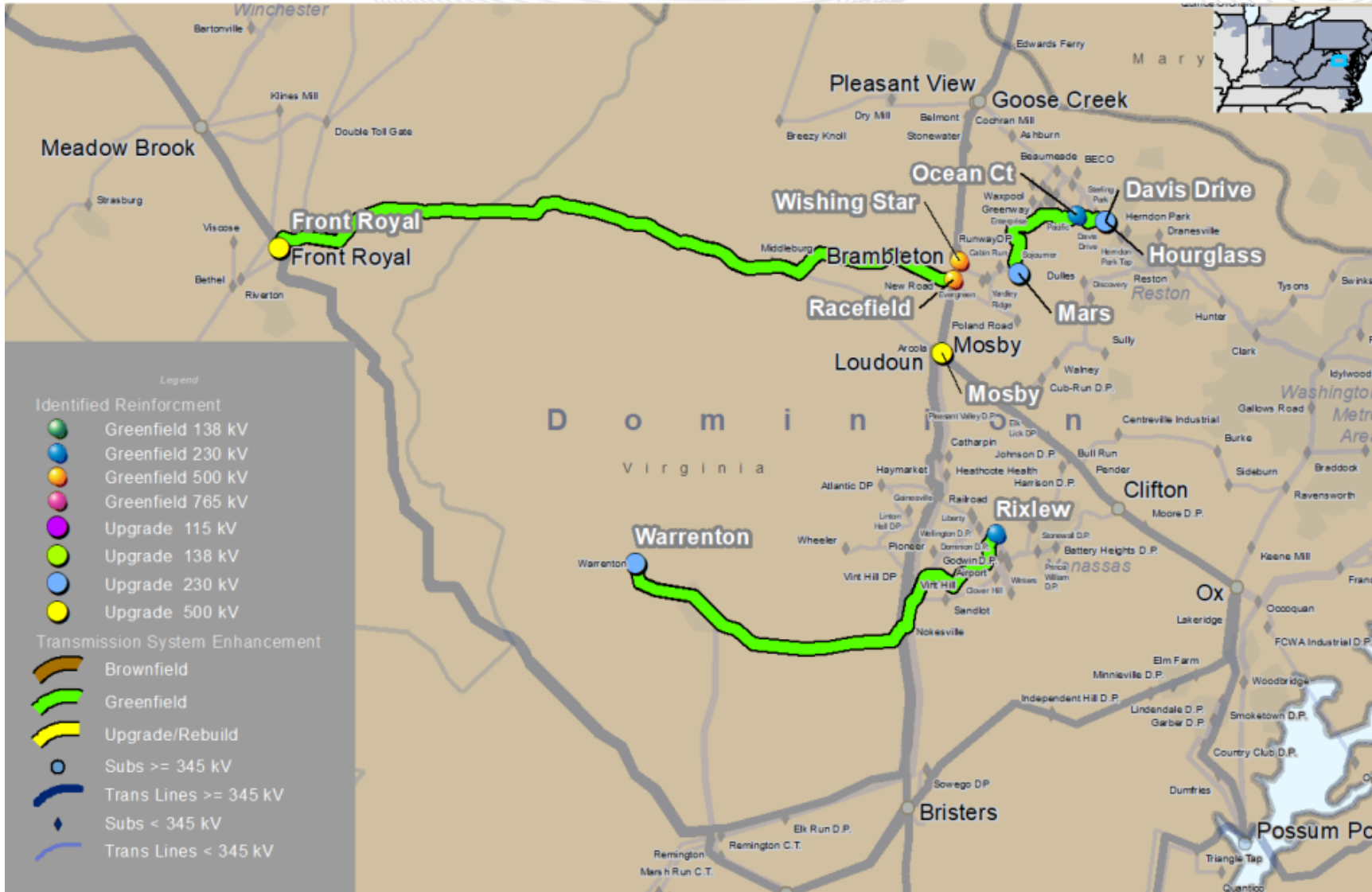


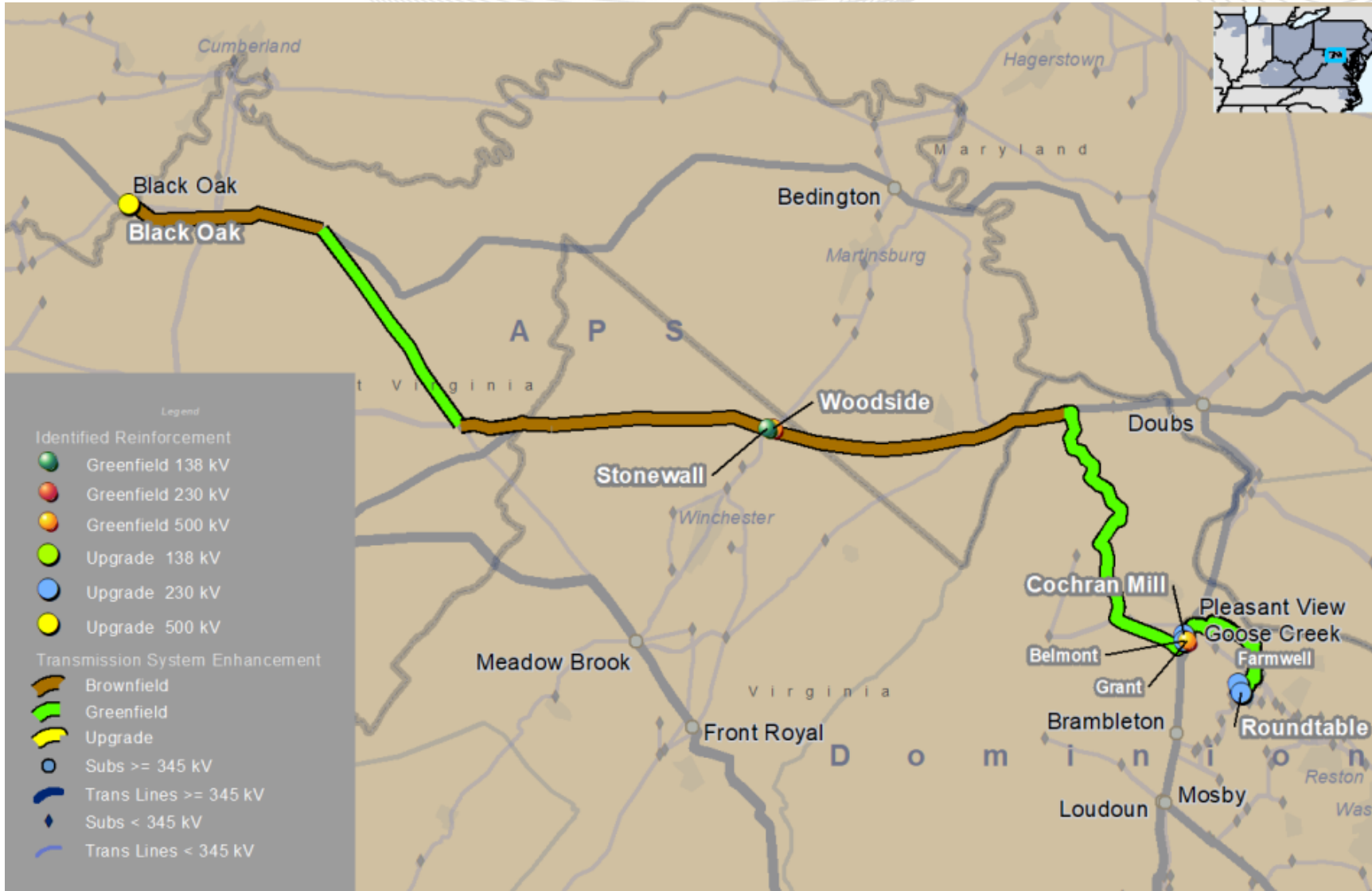


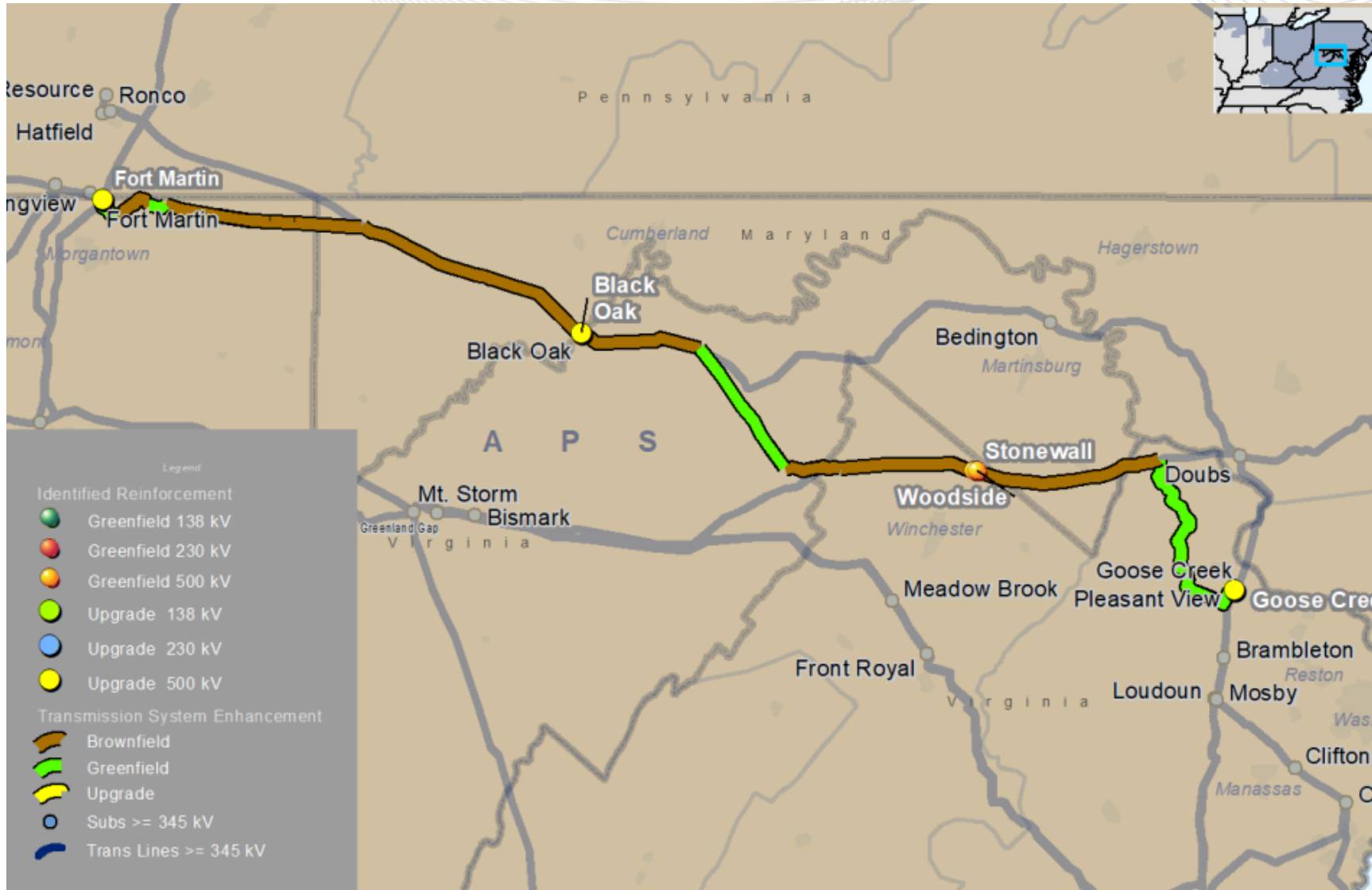


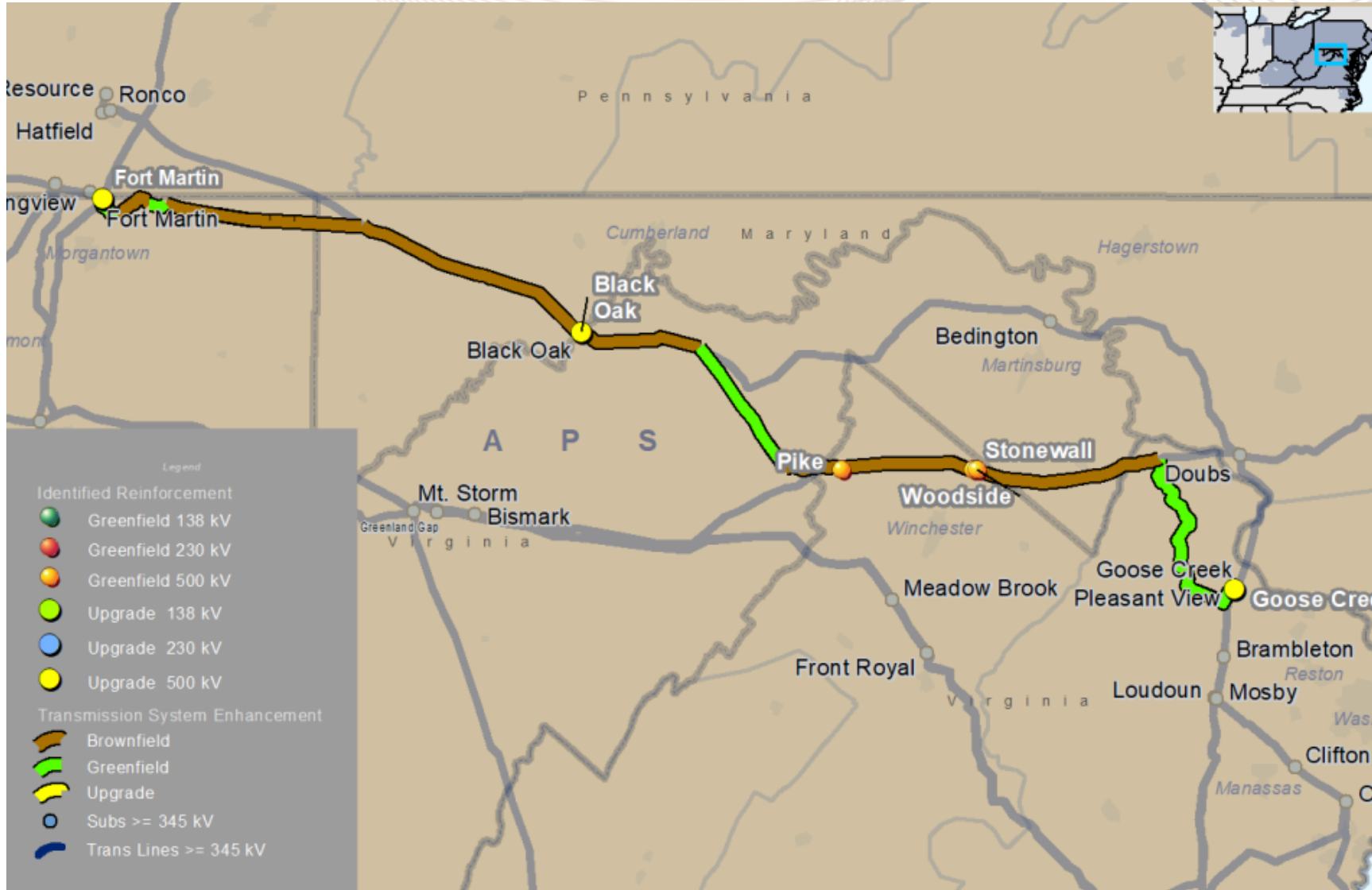


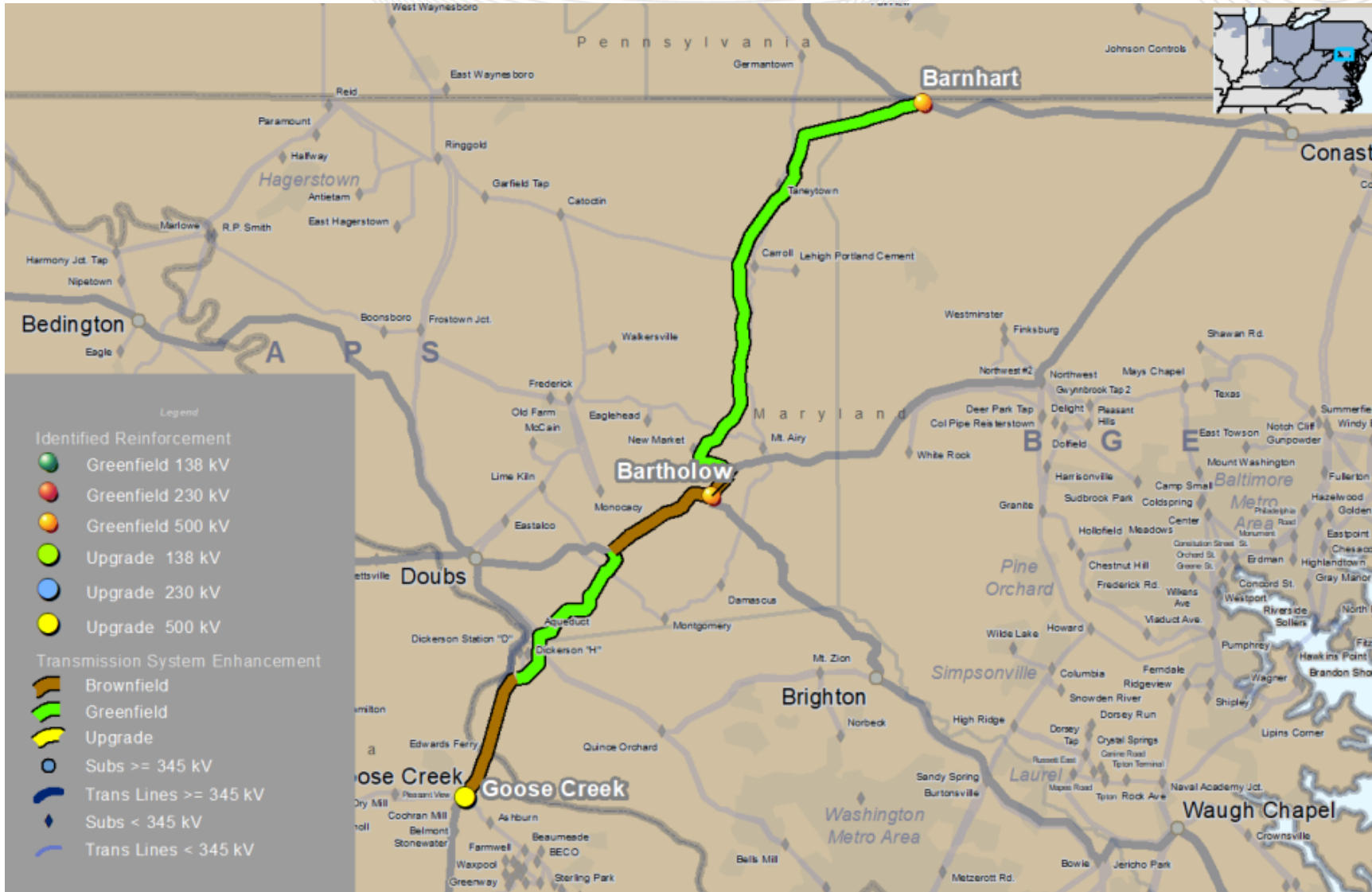


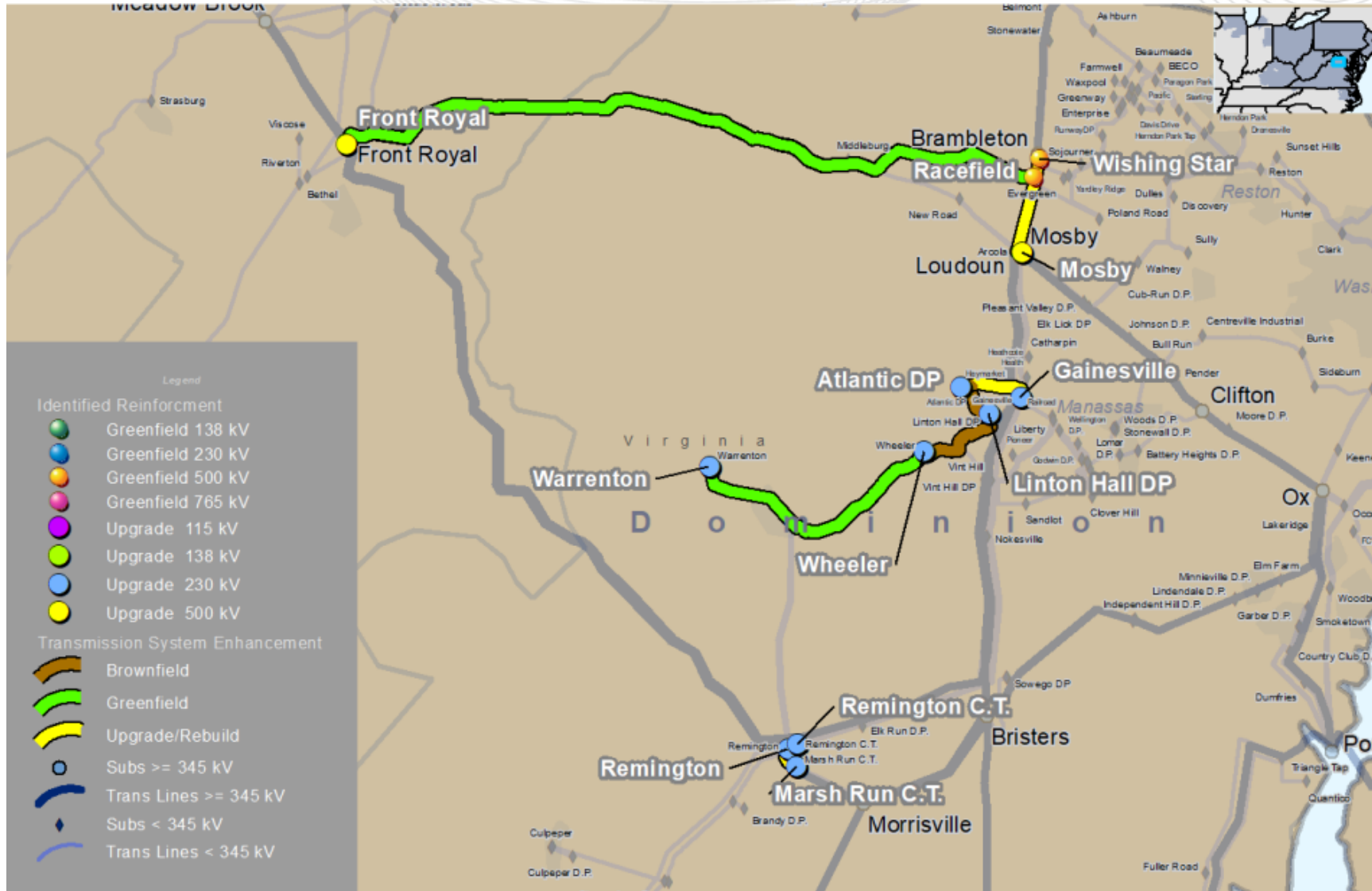


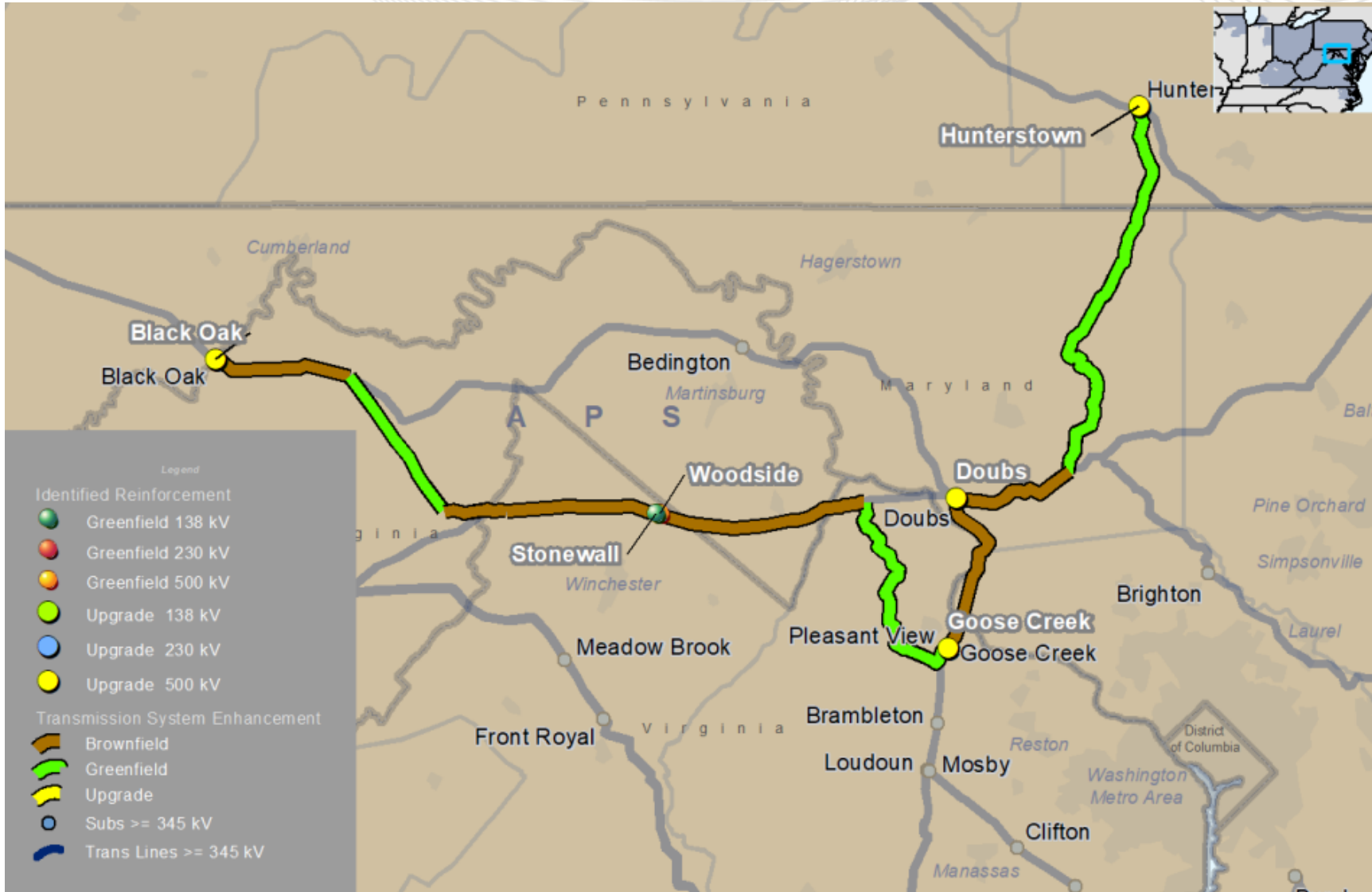


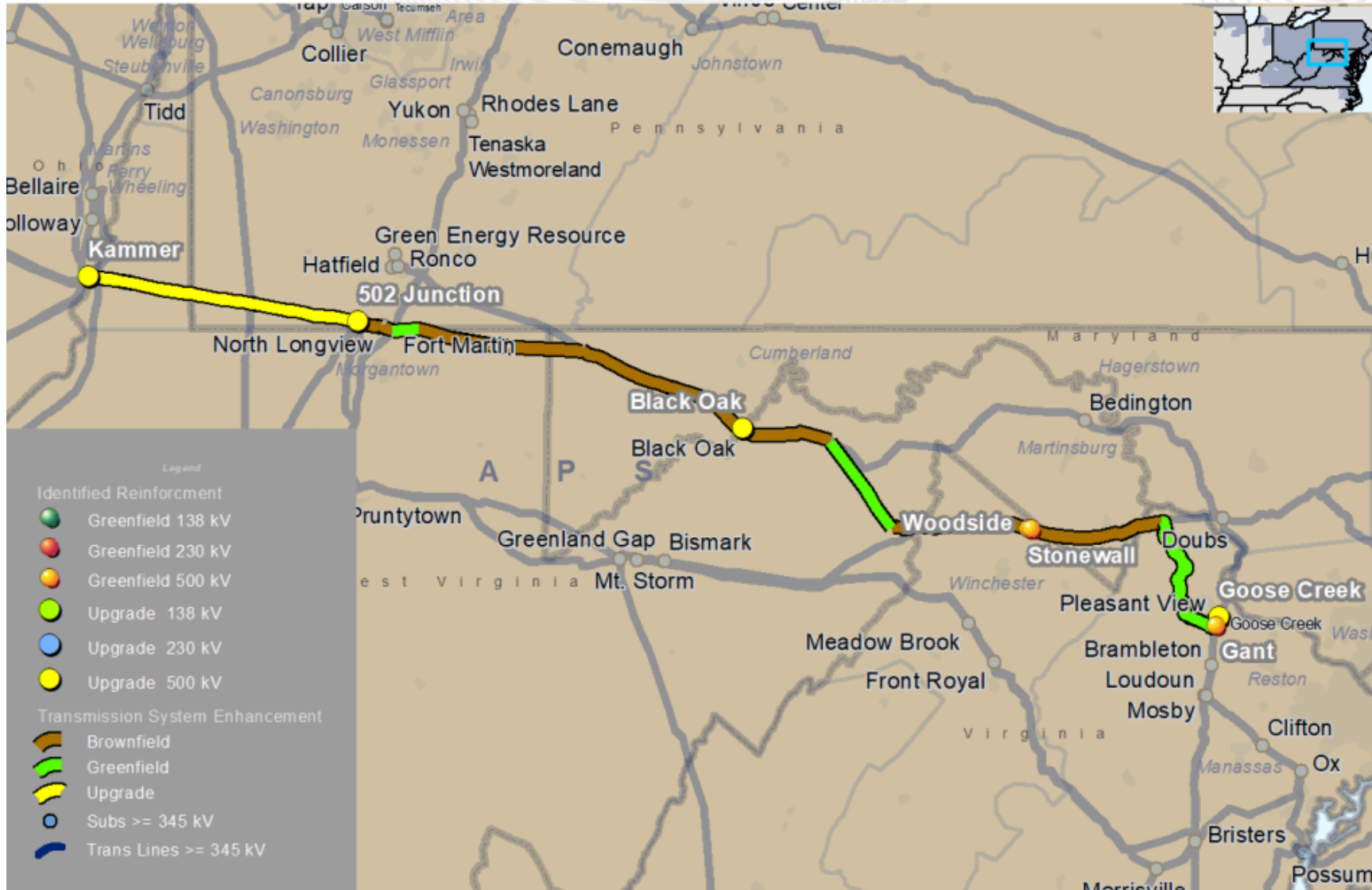


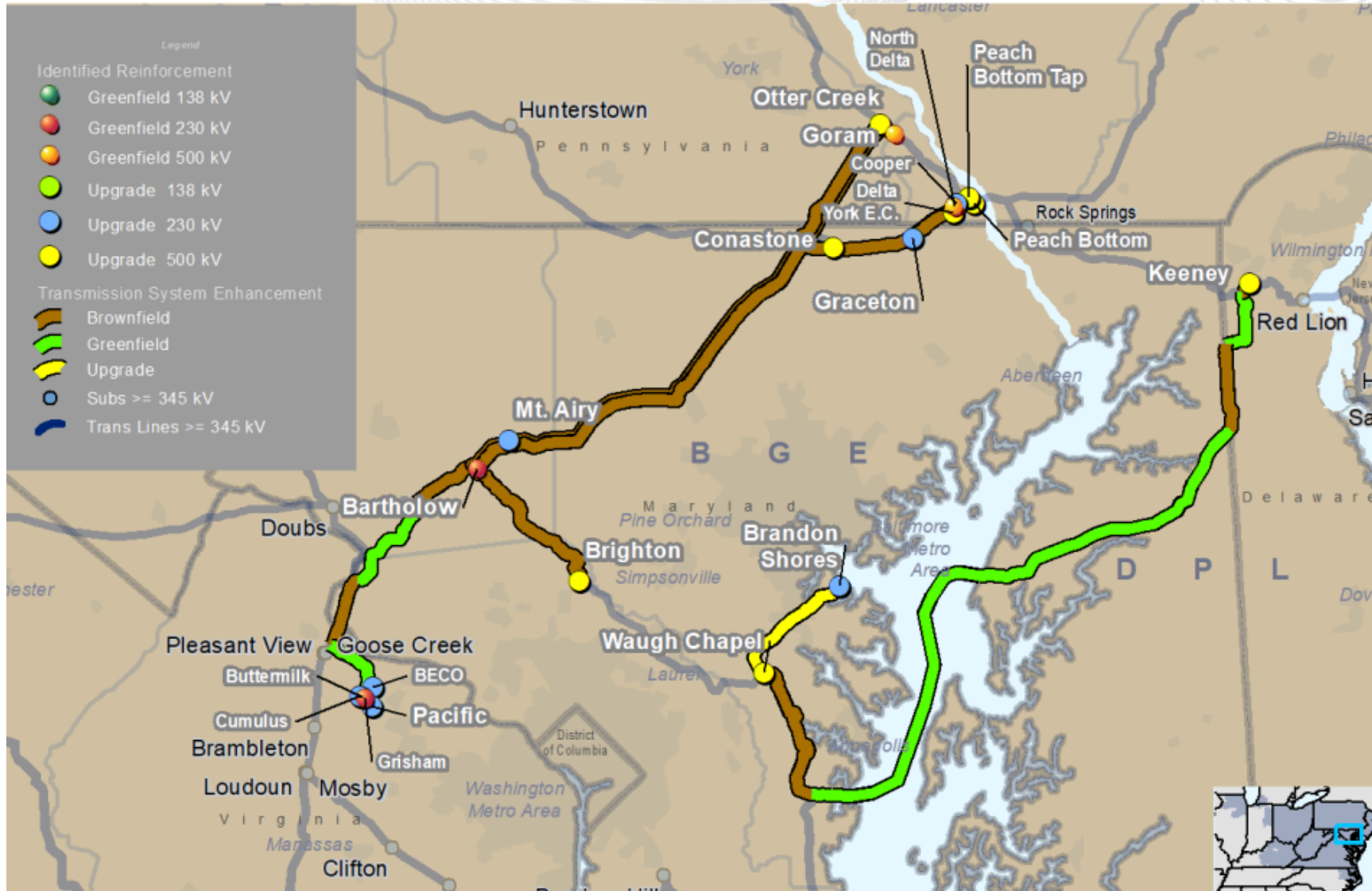


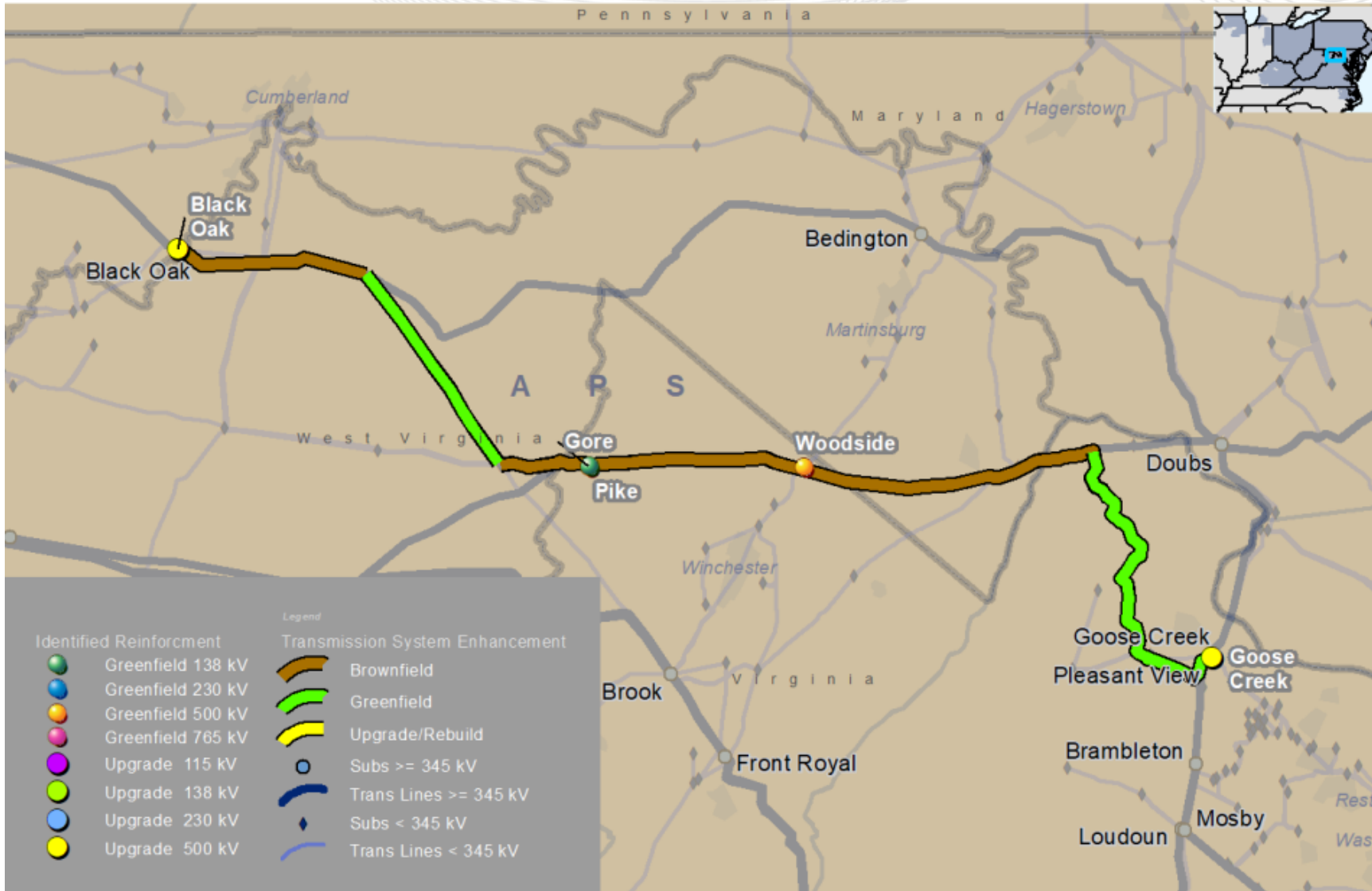


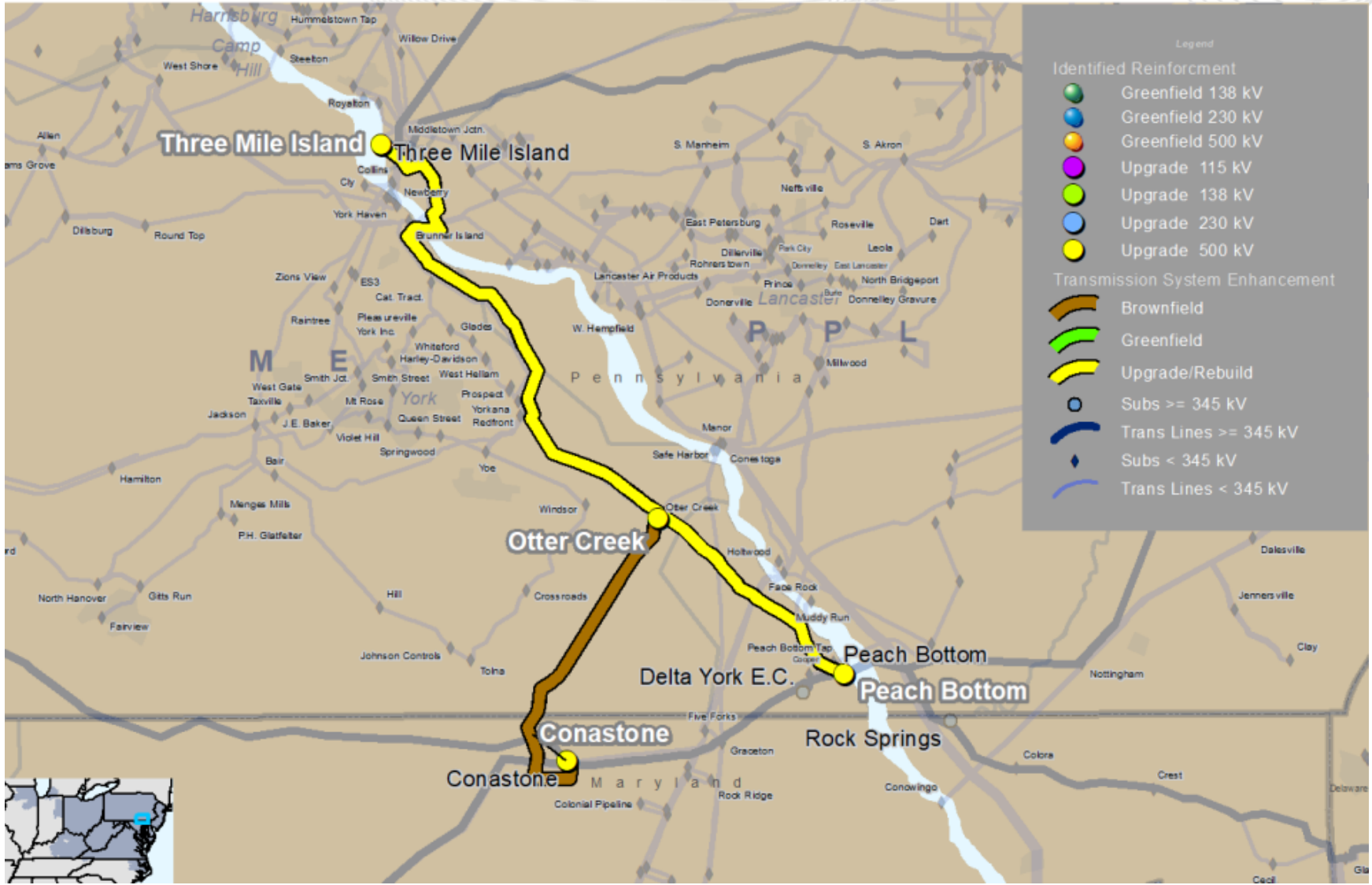


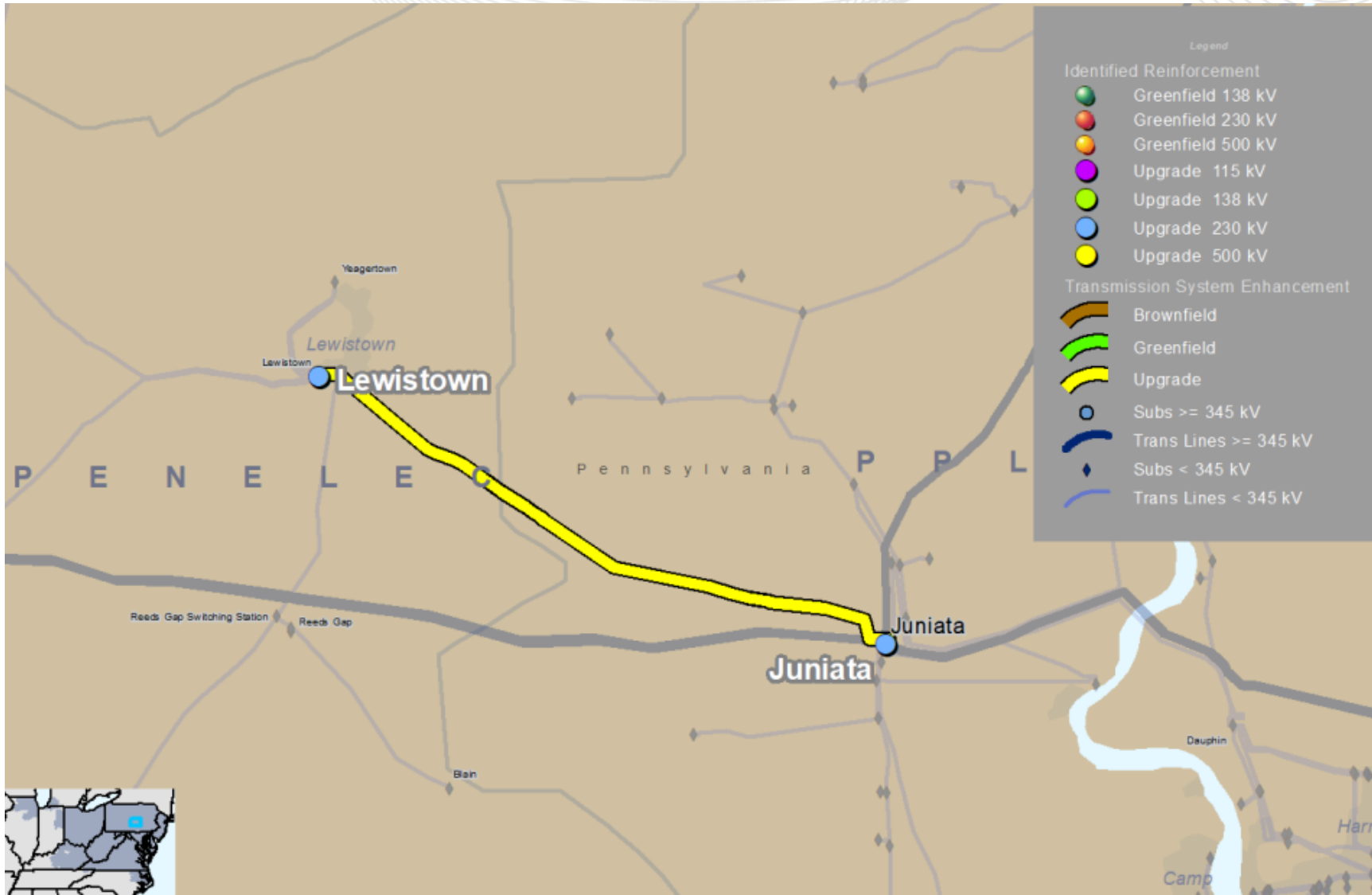


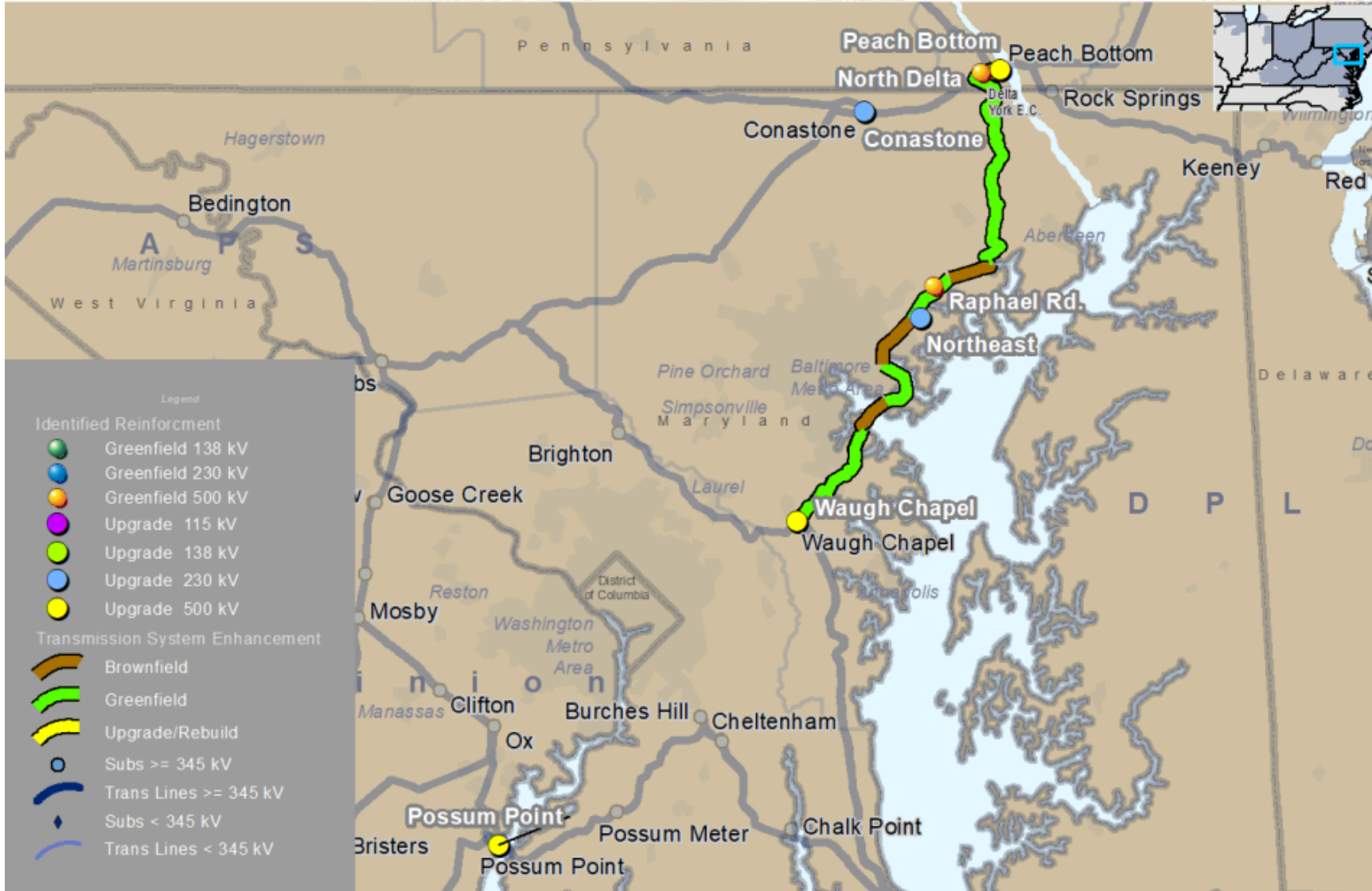


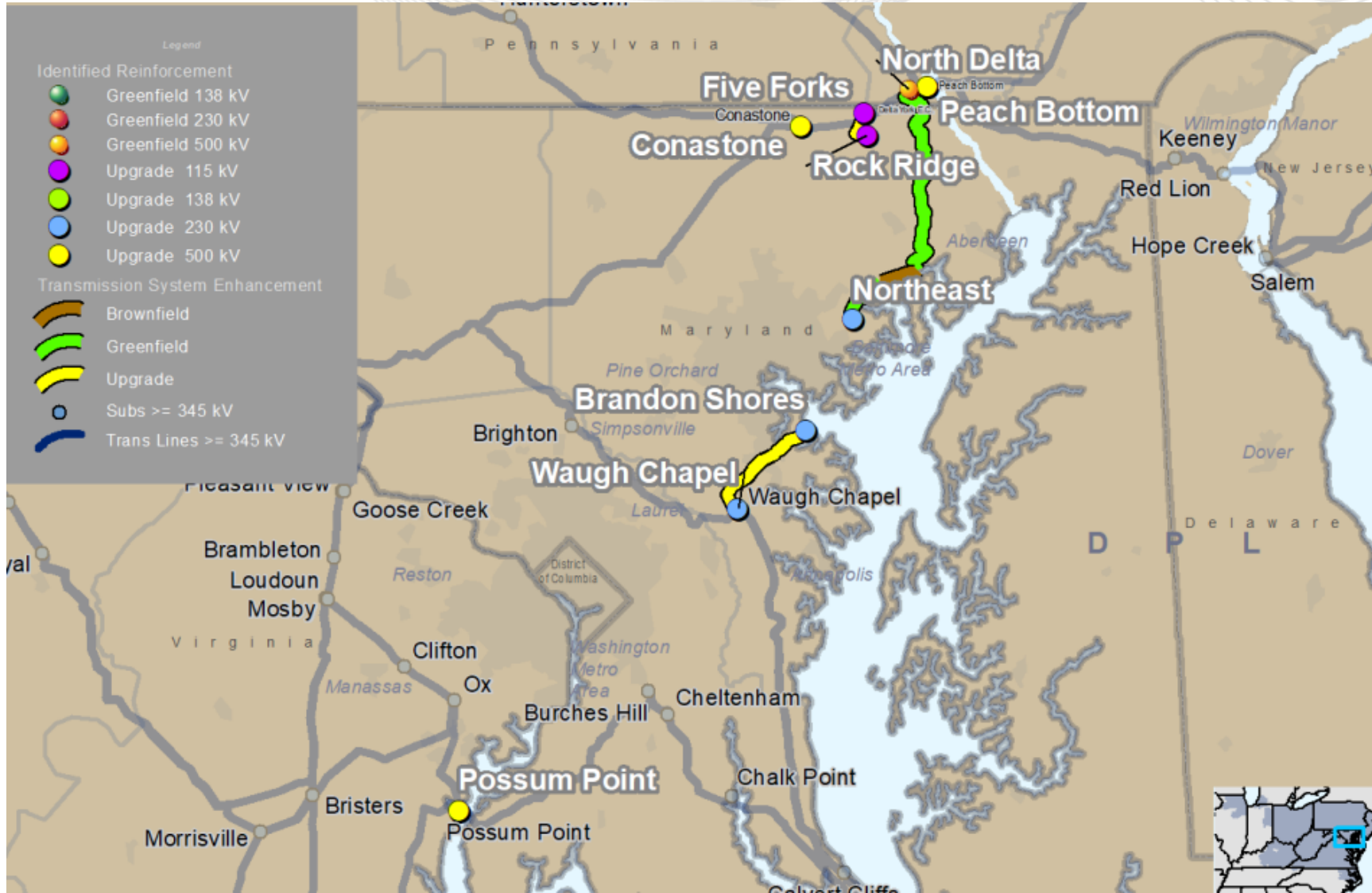


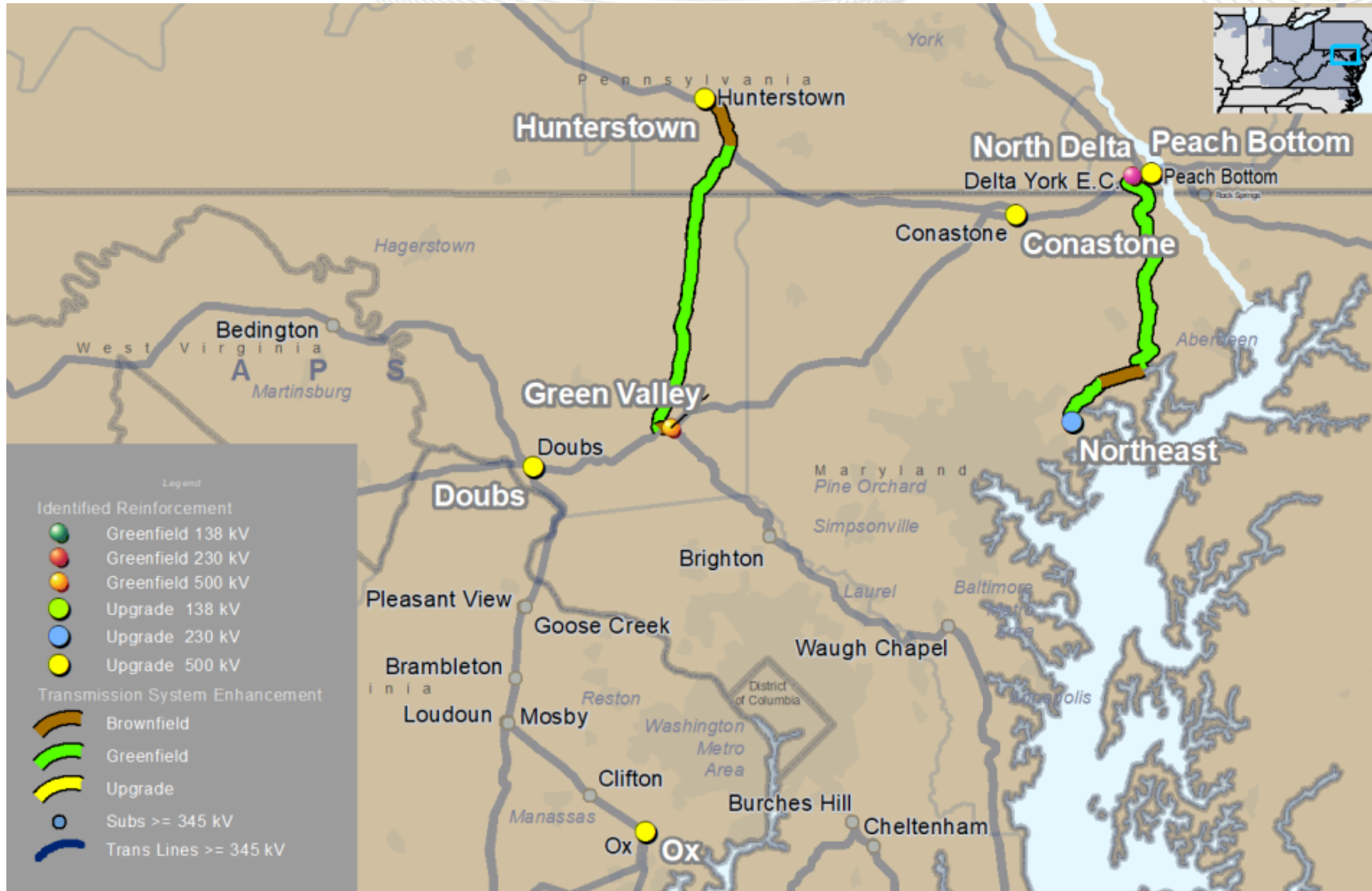


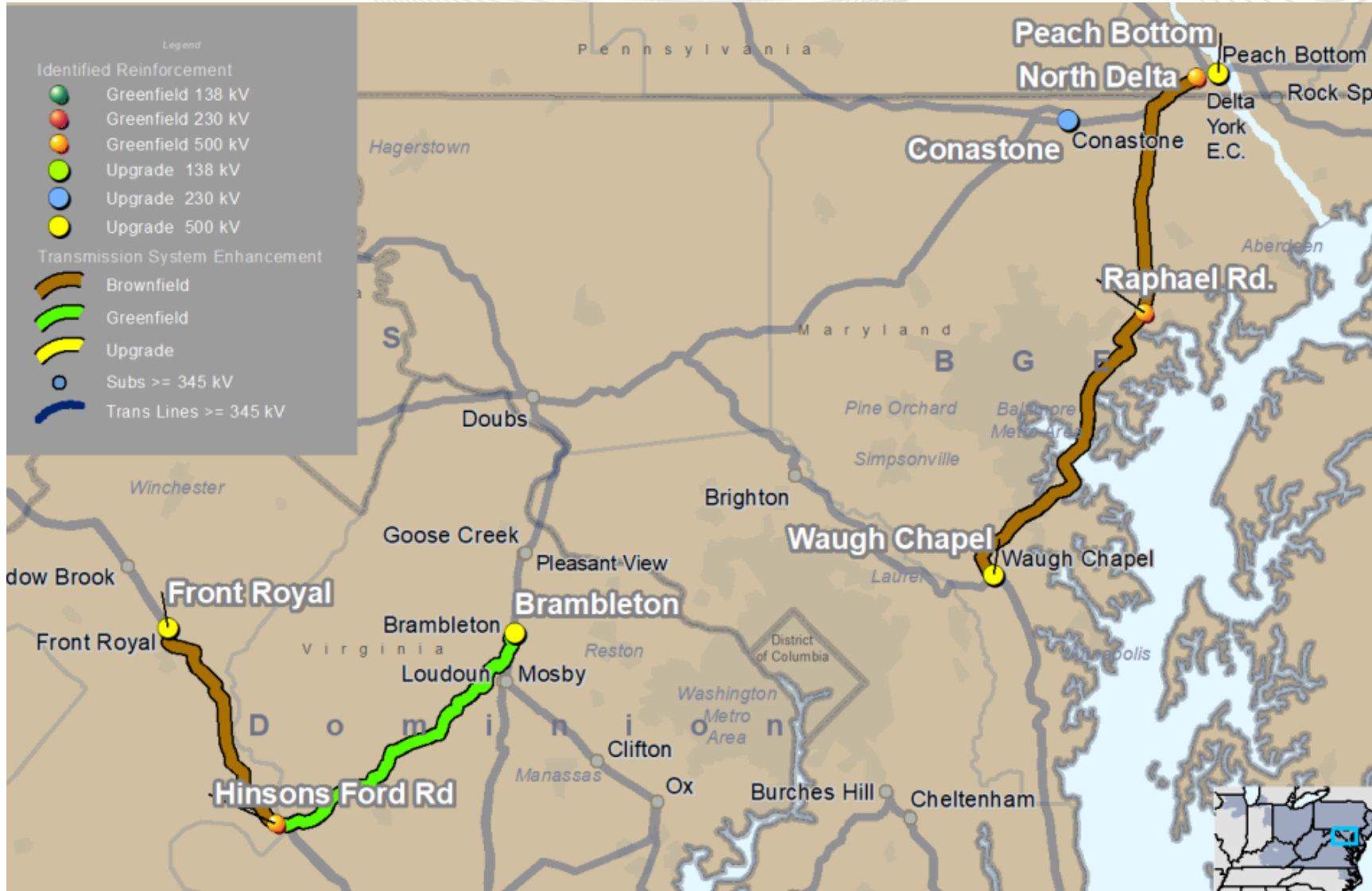




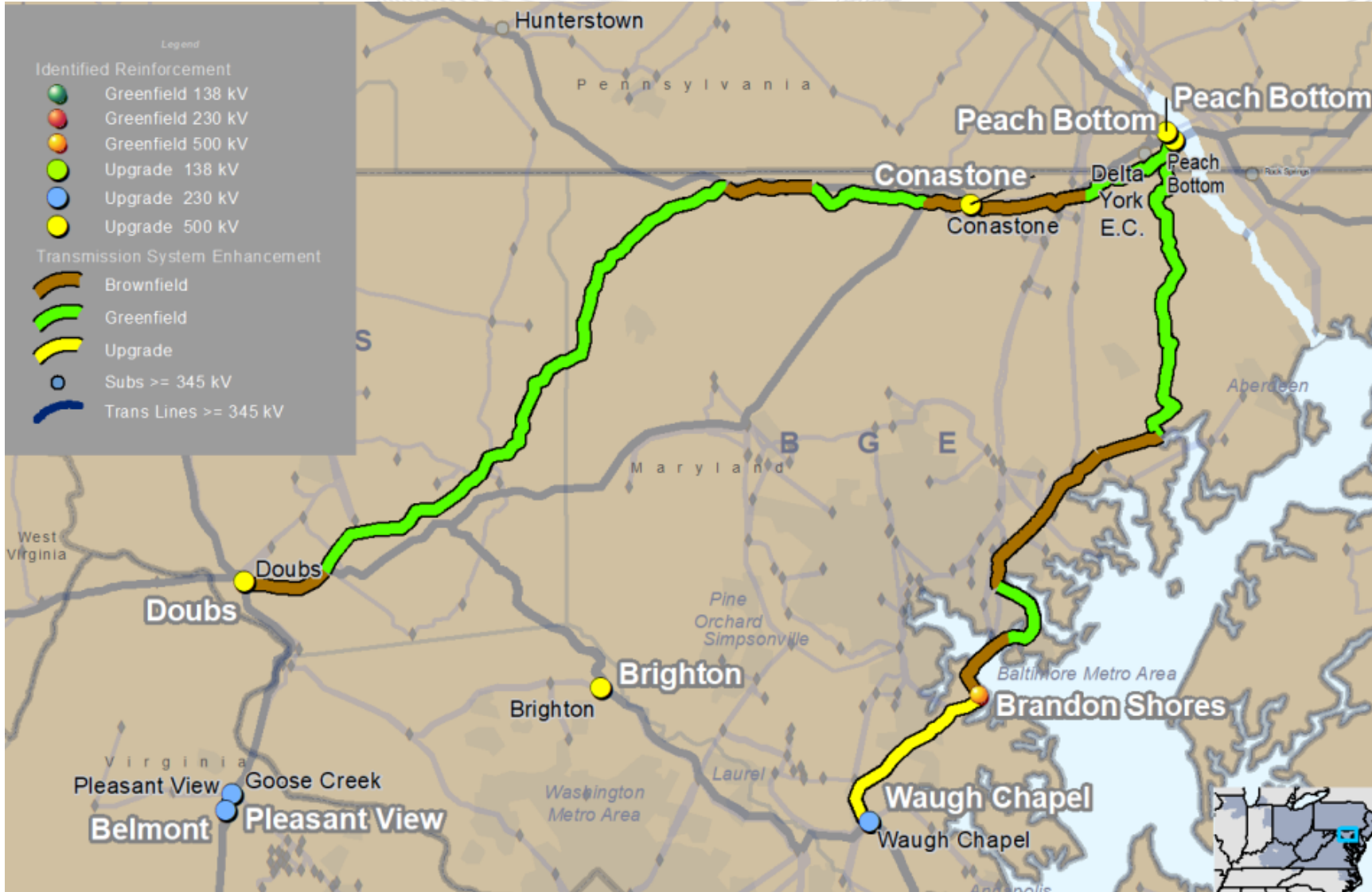






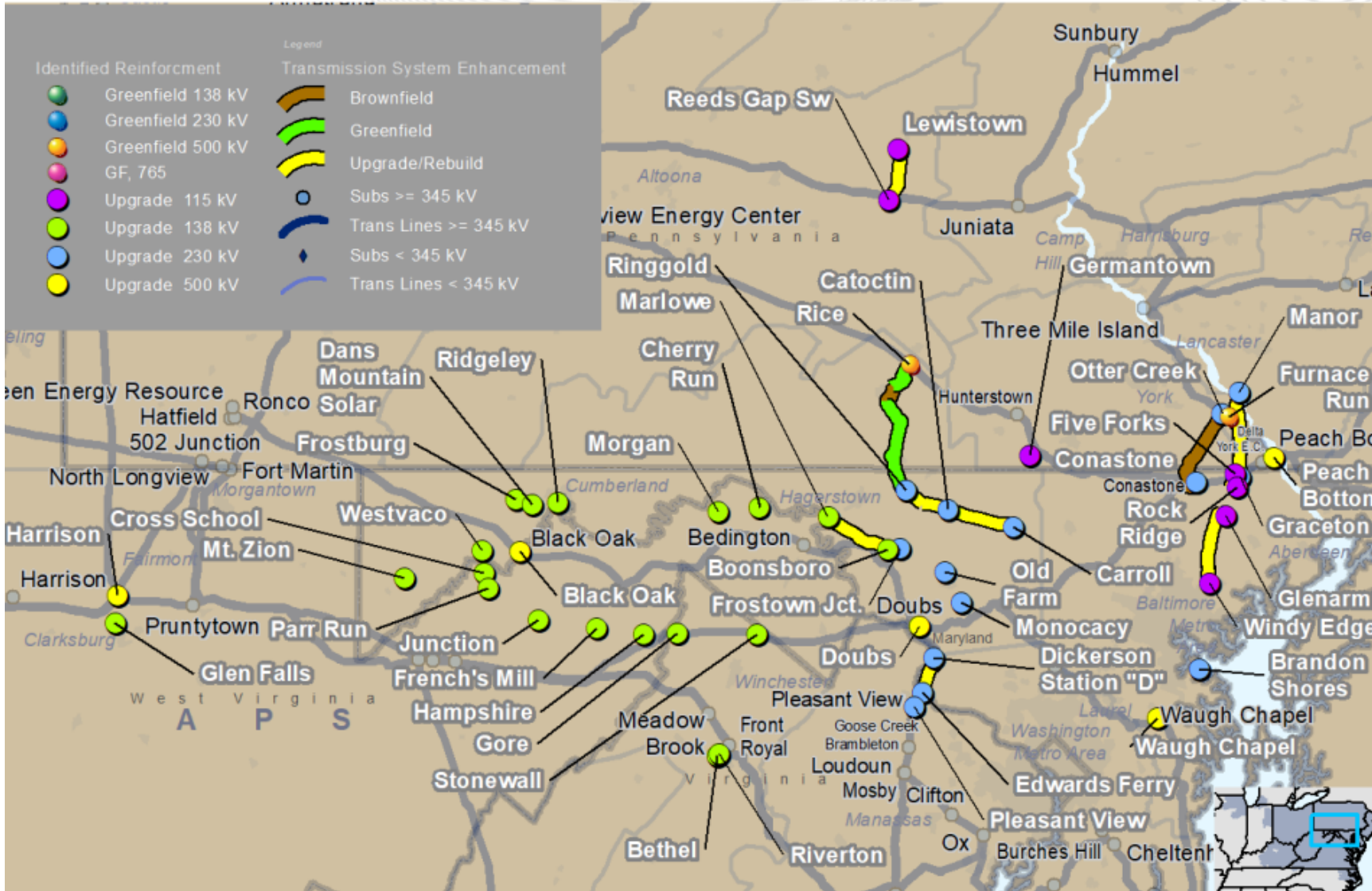


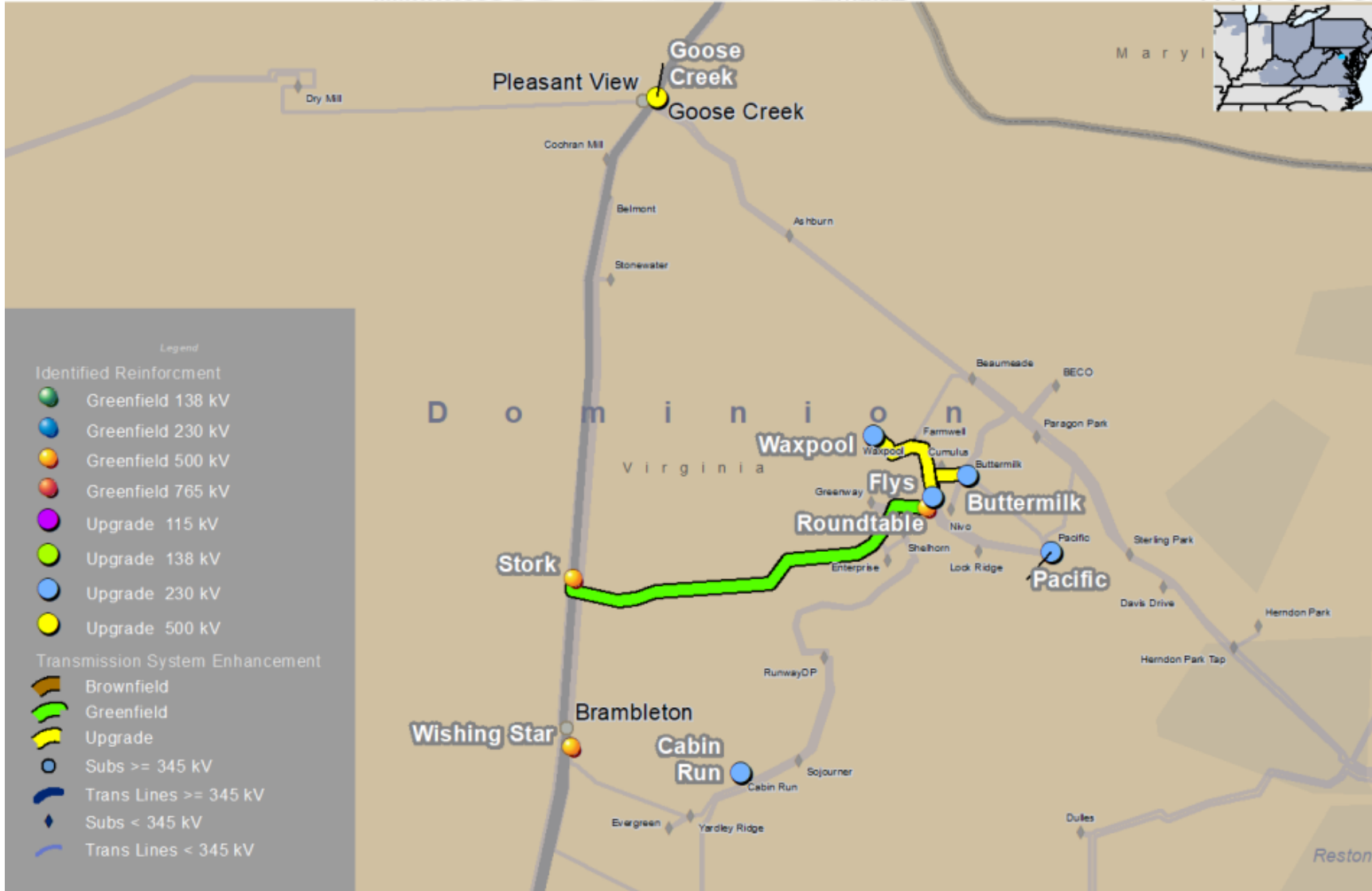


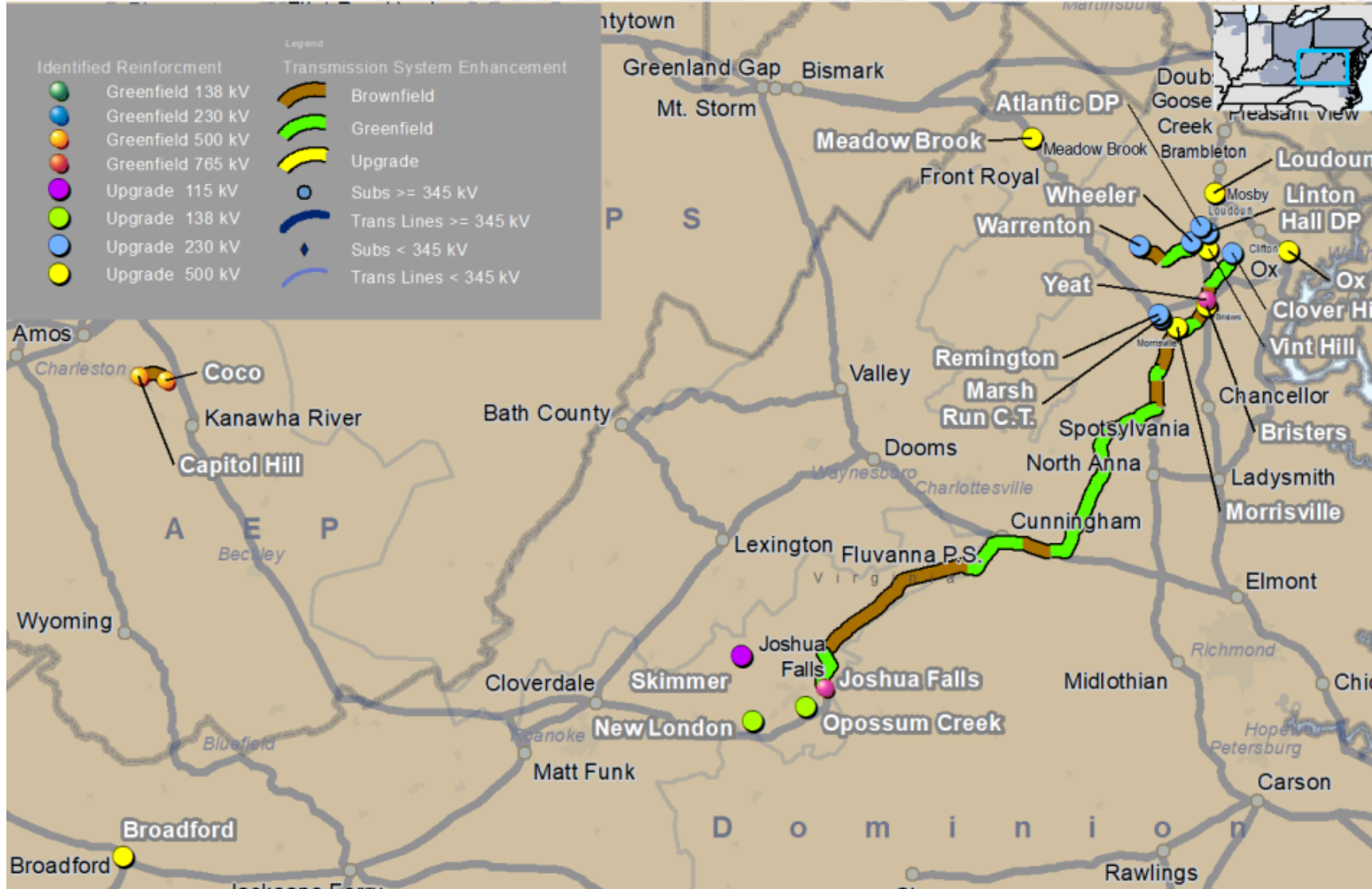


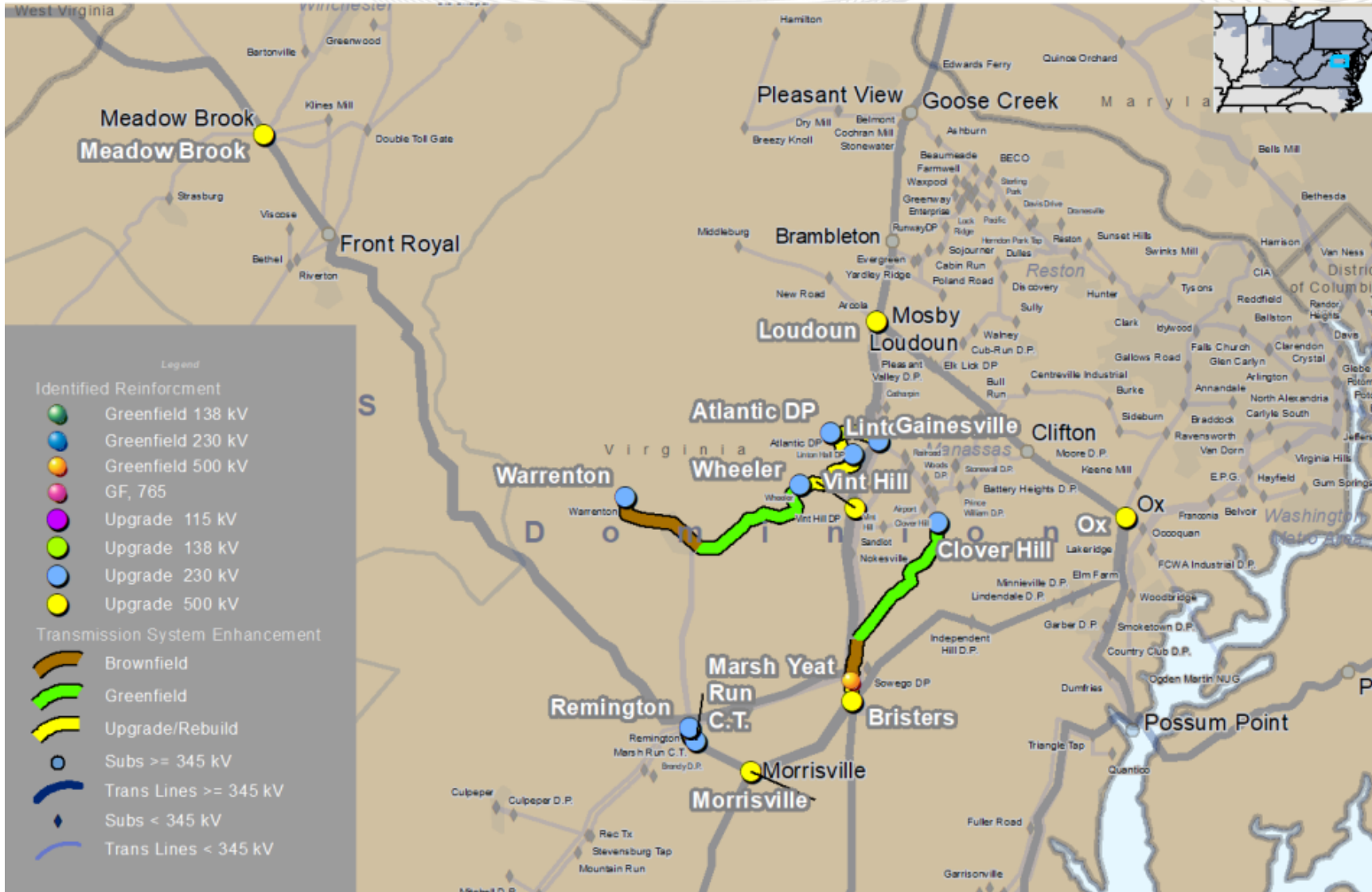












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Reliability Analysis Update



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Version No.	Date	Description
1	August 3 rd 2023	<ul style="list-style-type: none">• Original slides posted
2	August 25 th 2023	<ul style="list-style-type: none">• Slides 14-80 added. Maps for proposal in Window 3 added
3	August 30 th 2023	<ul style="list-style-type: none">• Corrections made to all Maps

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