Haymarket Project:
New 230kV Line and Substation

September 2014

Our Energy Challenge in Western Prince William County/Haymarket Area

- Commercial and industrial growth keeping pace with thriving area
  - Local, existing business expansion plans create the immediate need for a transmission solution, beginning in 2017
- Population has more than doubled since 2000
- During this same time, demand for electricity has roughly **tripled**

Haymarket Project
Improved Reliability and Capacity for the Future

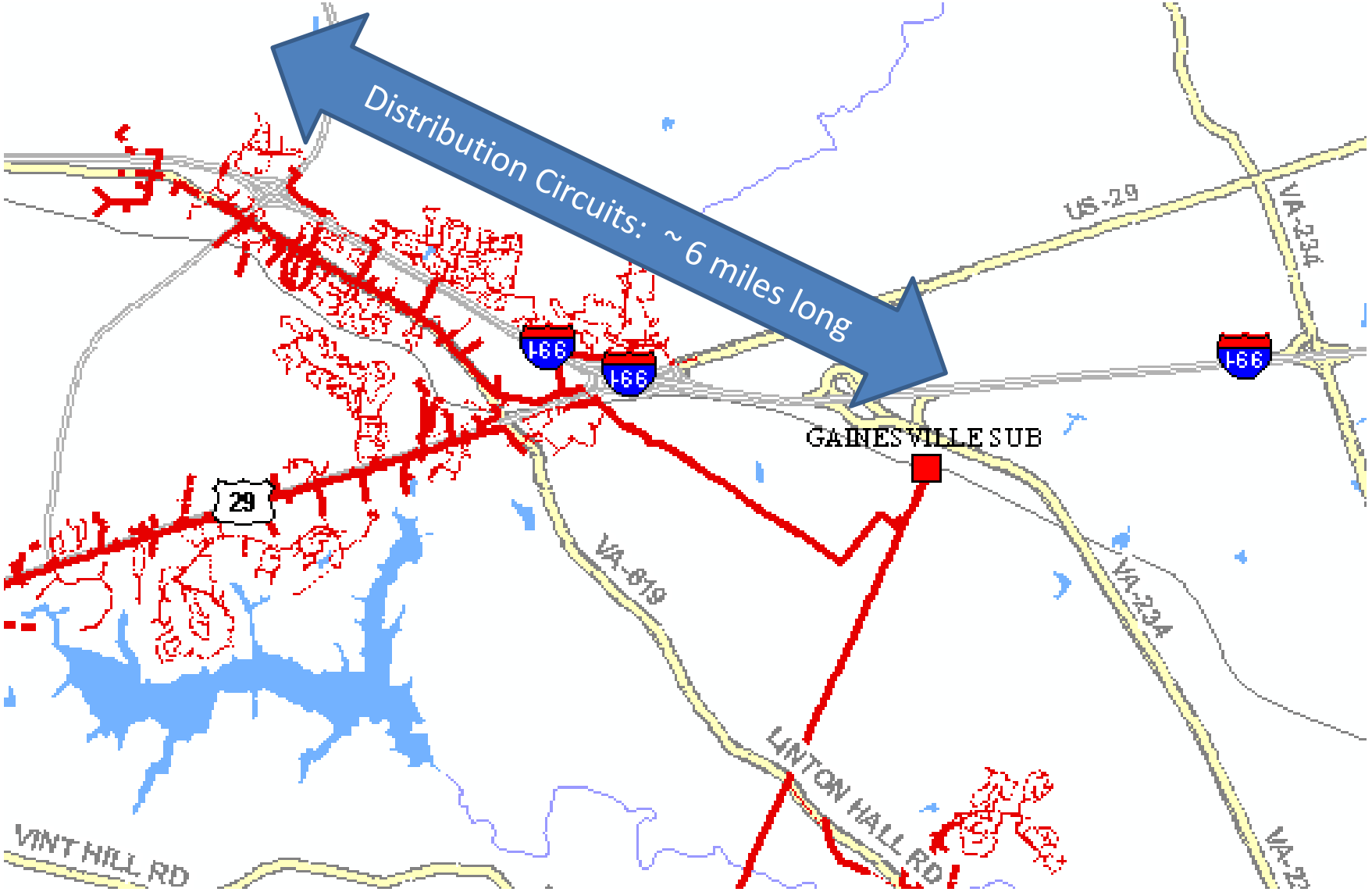
Two Phased Solution:

- Short term: Distribution reinforcements will provide "bridging power" until a new transmission line can be built and energized to serve Haymarket

- Long term: Transmission Solution
  - Locate new substation near load center
  - Extend new double-circuit 230 kV transmission line along ~6 miles of new right-of-way
  - New lines must be energized by 2017, when local loads are expected to exceed 100 MW
  - New facilities will help maintain local reliability and provide future capacity for NOVEC to also have a new, local source of power

- Estimated Total Cost: $65M

Western Prince William County/Haymarket: served by long distribution lines today



Phase 1: Distribution Reinforcements

Viewpoint 10 - Intersection of Washington Street and Coach Way - *Existing View*

Phase 1: Distribution Reinforcements - *AFTER*

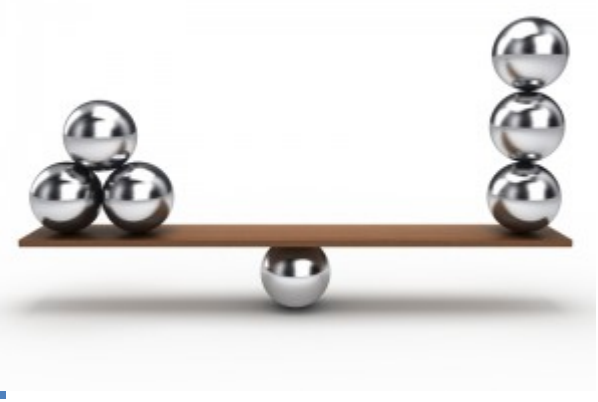
Viewpoint 10 - Intersection of Washington Street and Coach Way - *Proposed View*

Dominion's Responsibility: Electric Transmission Infrastructure Investments

Dominion is obligated to provide safe and reliable power to consumers, under current and future demands.
Forecasts show power demand to exceed infrastructure currently in place.
How do we solve for the predicted demand, meeting our obligation responsibly?

State Corporate Commission evaluates projects on:

- Need, Electrically viable
- Directness of Route
- Cost
- Environmental Impacts



Community evaluates projects on impact to:

- Home values/view shed
- Quality of life
- Environment
- Reliability

Dominion's application reflects varying considerations, balancing impacts in an appropriate and prudent manner. The proposed solution cannot remove impacts, but attempts to lessen them.

HAYMARKET

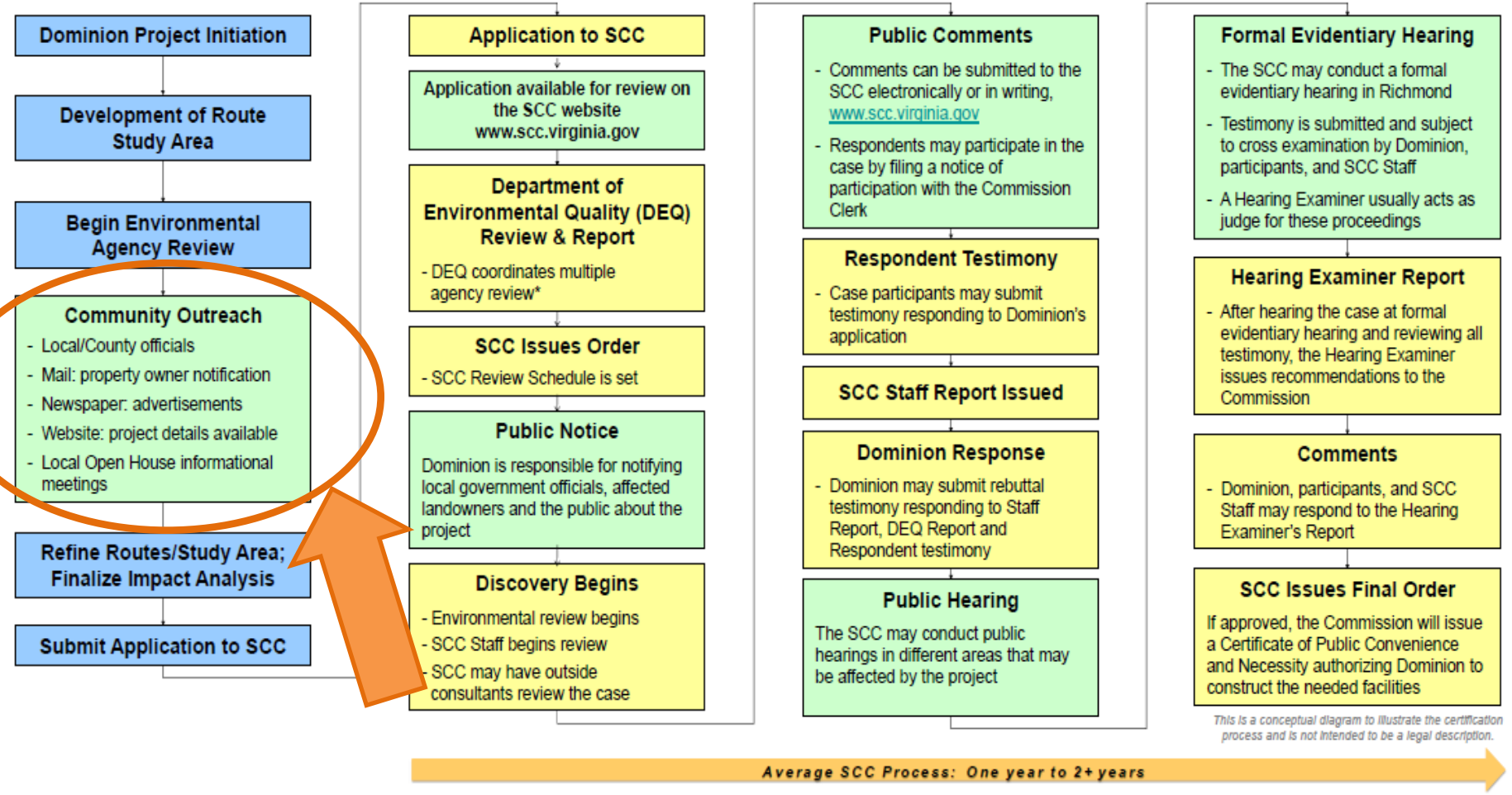
Target Schedule

June-July	• Brief local elected officials
June-Oct 2014	• **Community Outreach**
August 25	• Town Council Work Session, Haymarket Town Hall
September 8	• Planning Commission Meeting, Haymarket Town Hall
September 10	• Open House: Battlefield High School, 5:00 – 7:30 p.m.
Late Fall 2014	• Begin Distribution work to reinforce existing facilities
Late 2014	• Submit application to SCC
2015	• Substation plans submitted to Prince William County for local approval
Early 2016	• With necessary approvals, begin construction
Spring 2017	• Energize new transmission line and station

The Transmission Line Approval Process

Virginia's State Corporation Commission (SCC) has regulatory authority over all electric utilities and requires that all transmission facilities at or above 138 kV be certified by the SCC.

The SCC determines the need for a proposed line and the route. Among other elements considered, the SCC must determine that the selected route reasonably minimizes the impact on scenic assets, historic districts, and the environment.

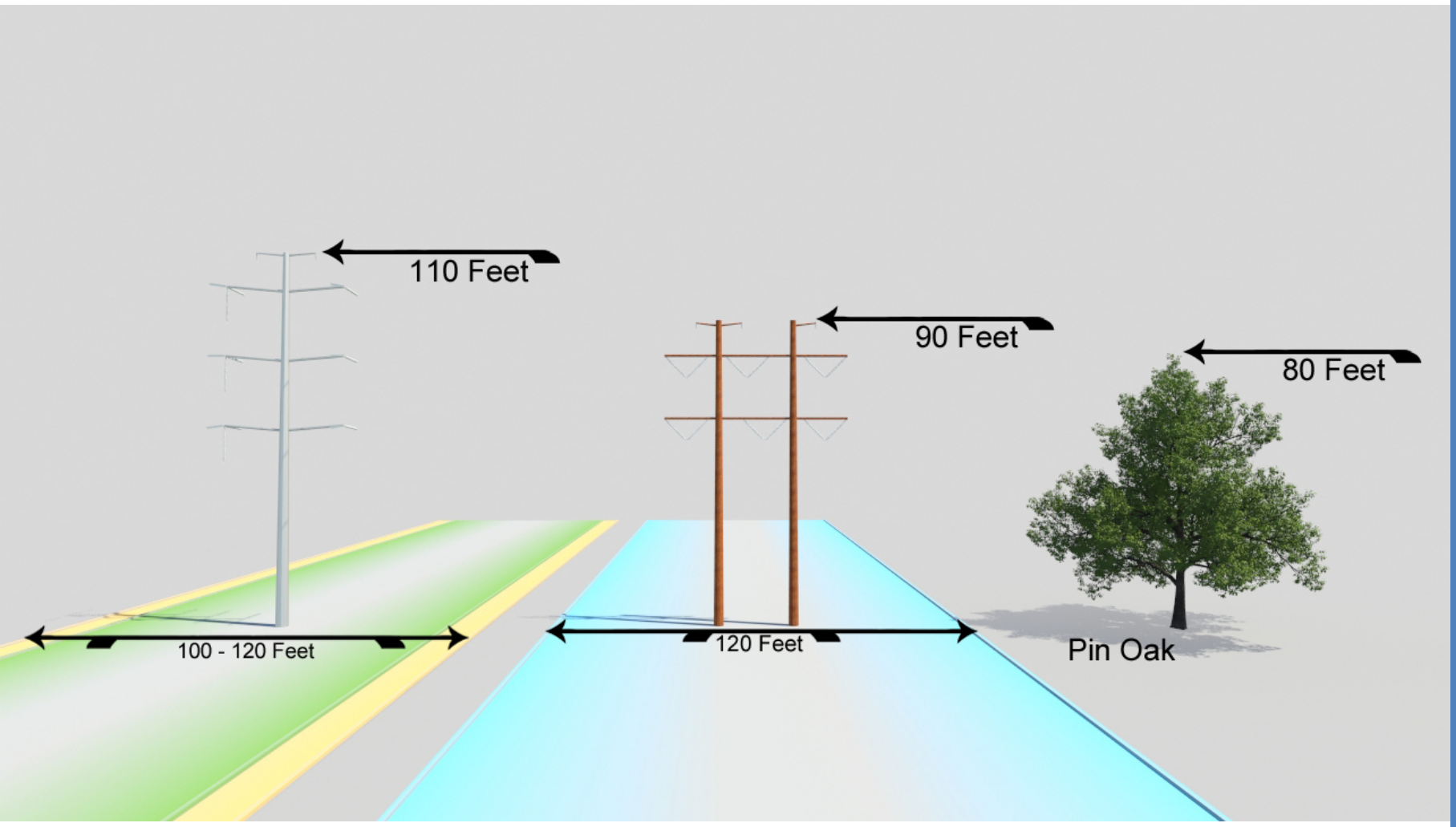


*DEQ coordinated agency review includes: Virginia Marine Resources Commission, Department of Conservation & Recreation, Department of Game & Inland Fisheries, Department of Historic Resources and others.

Public Feedback

- Routes
  - Alternatives
  - Overhead compared to Underground
- Quality of life concerns
  - Noise
  - Electric and Magnetic Fields (EMF)
  - Property values
- Construction impacts

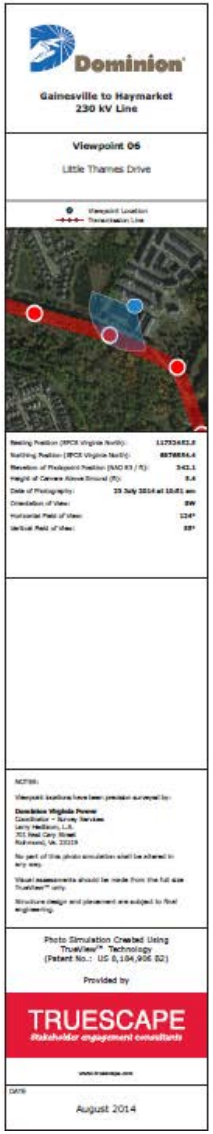
Possible Structure Type Options



Simulation Example - Preliminary Route Monopole

Viewpoint 06 - Little Thames Drive - *Existing View*

Viewpoint 06 - Little Thames Drive - *Proposed View*



Simulation Example - Preliminary Route
H Frame

Viewpoint 06 - Little Thames Drive - *Existing View*

Viewpoint 06 - Little Thames Drive - *Proposed View - Alternate Weathering Steel H-Frame. Lamp Post Removed*

Dominion

Gainesville to Haymarket
230 kV Line

Viewpoint 06

Little Thames Drive

Photo Simulation Created Using
TrueView™ Technology
(Patent No.: US 8,184,908 B2)

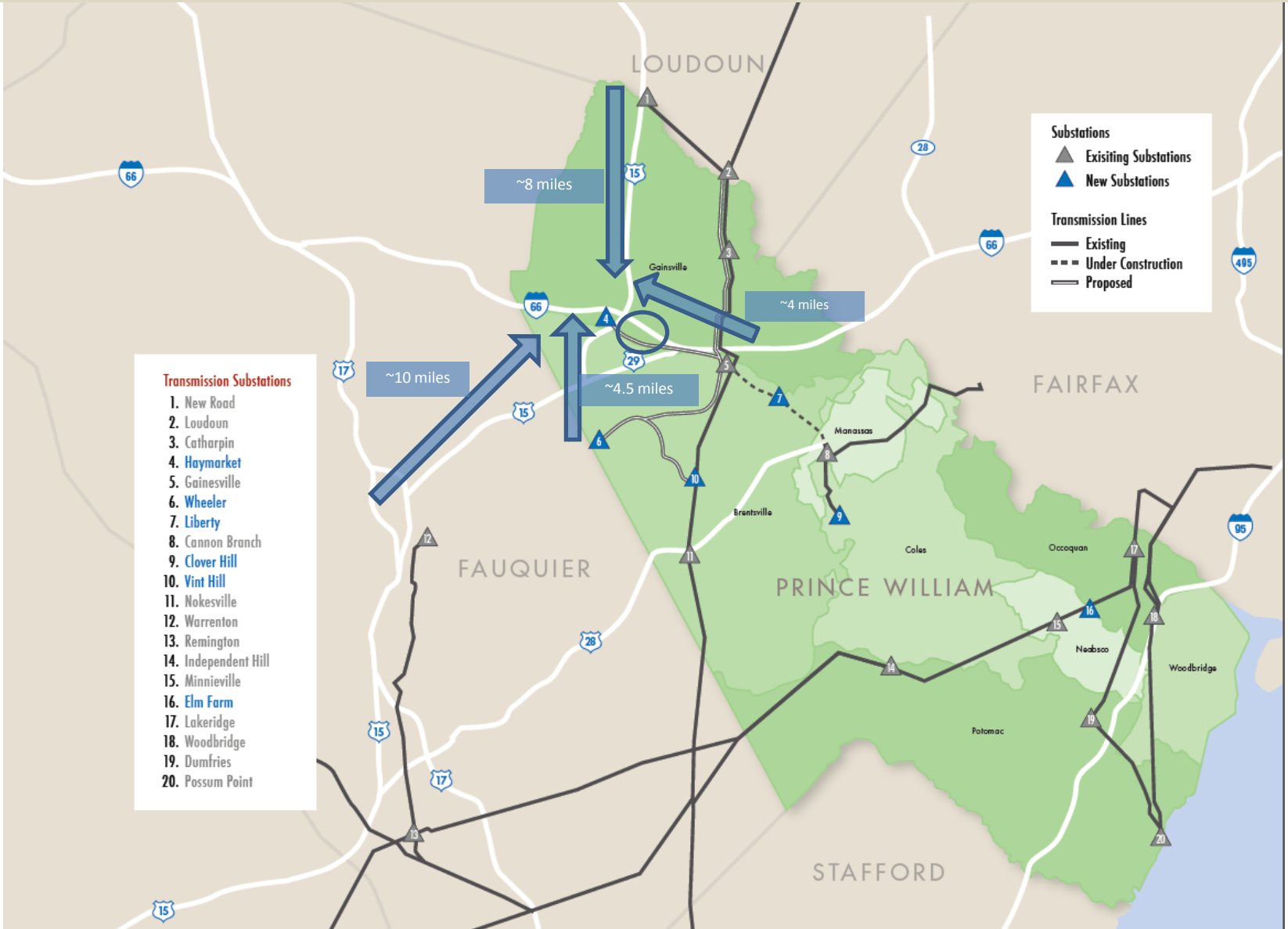
Provided by

TRUESCAPE
Stakeholder engagement consultants

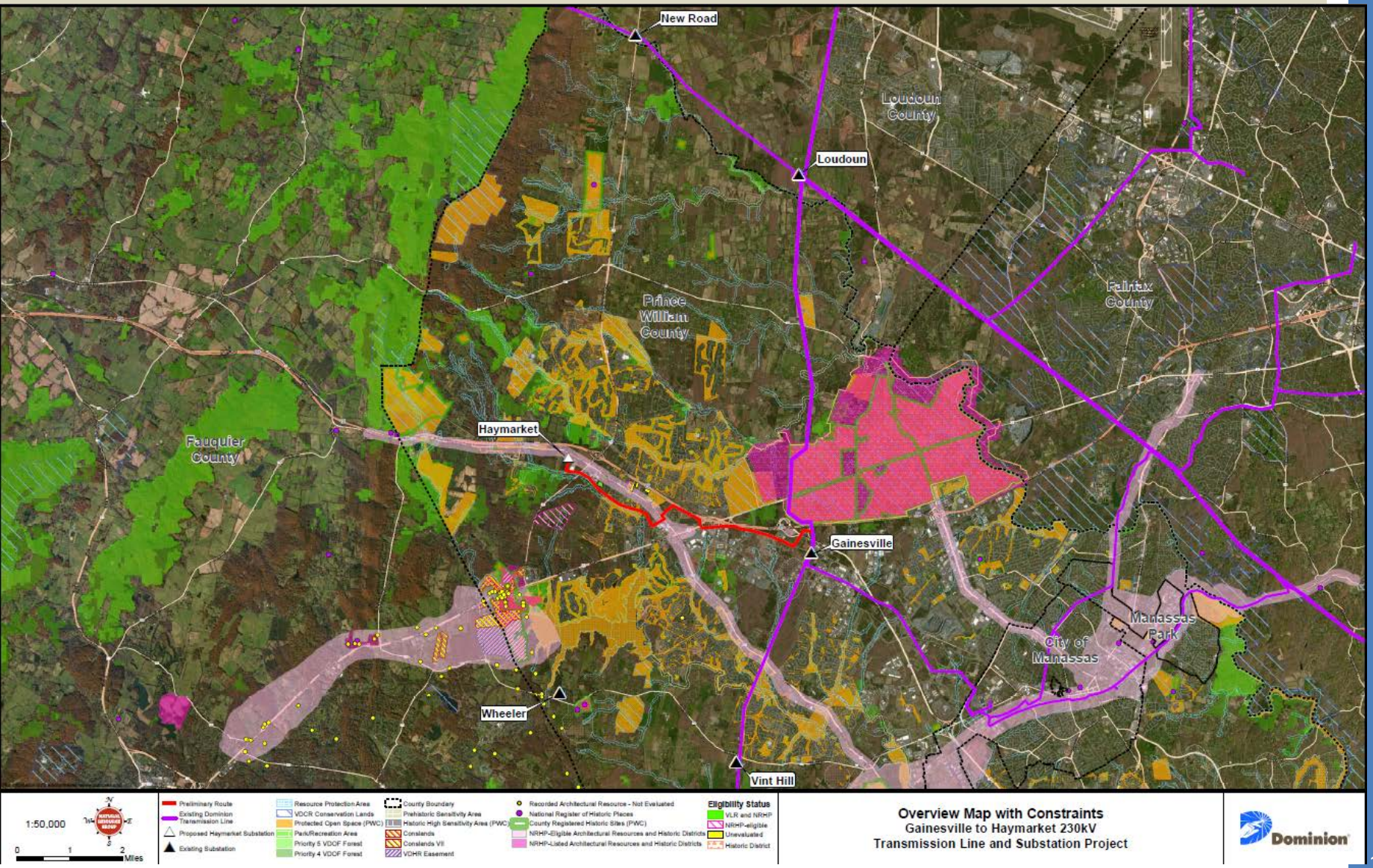
August 2014

HAYMARKET

Prince William County and Surrounding Counties
Transmission Lines and Substations
(Existing and Proposed)

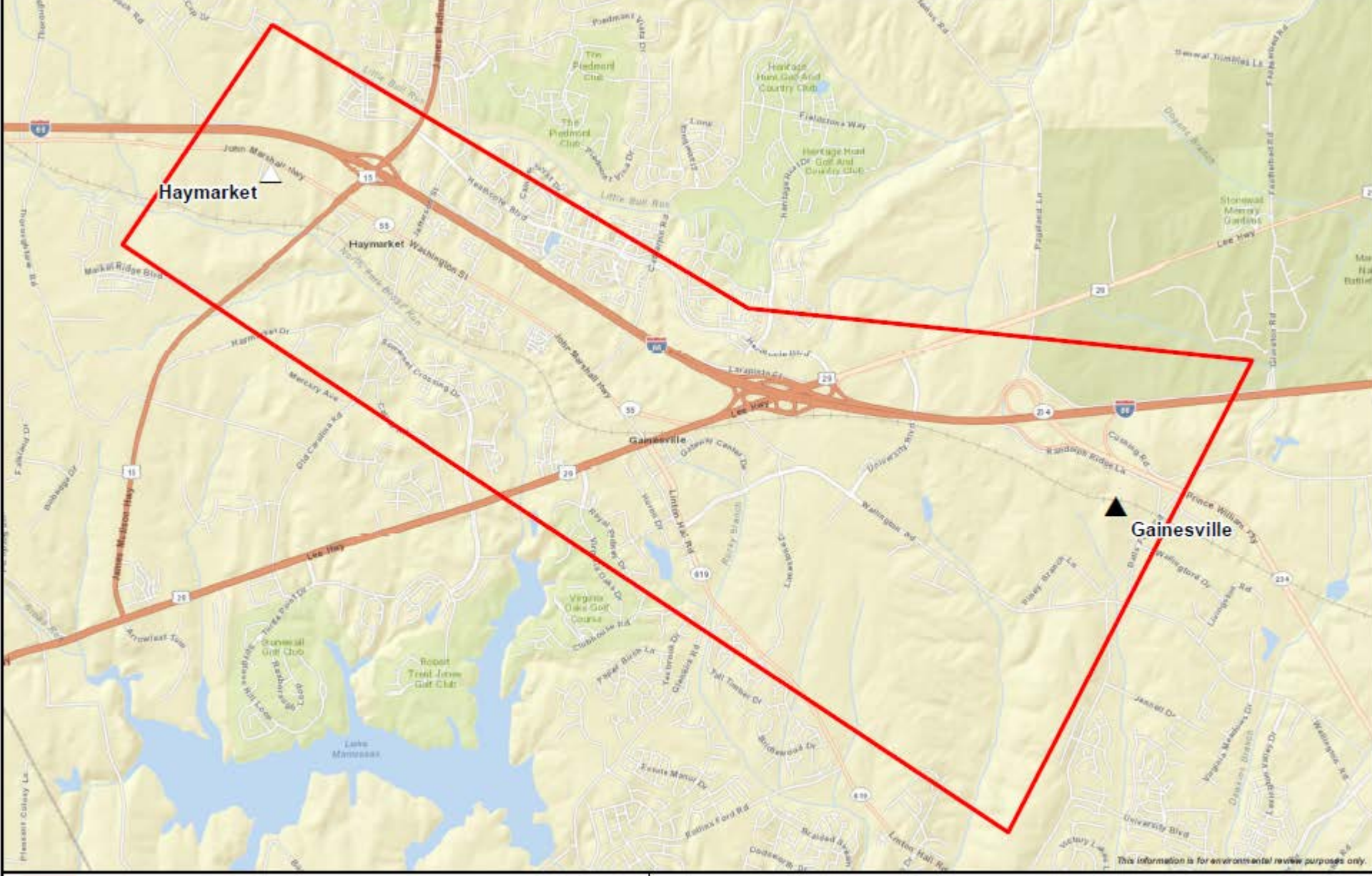


Study Area: Constraints



Overview Map with Constraints
Gainesville to Haymarket 230kV
Transmission Line and Substation Project

Dominion



Study Area
Railroad
Proposed Substation
Existing Substation

1:48,000
0 2,000 4,000
Feet

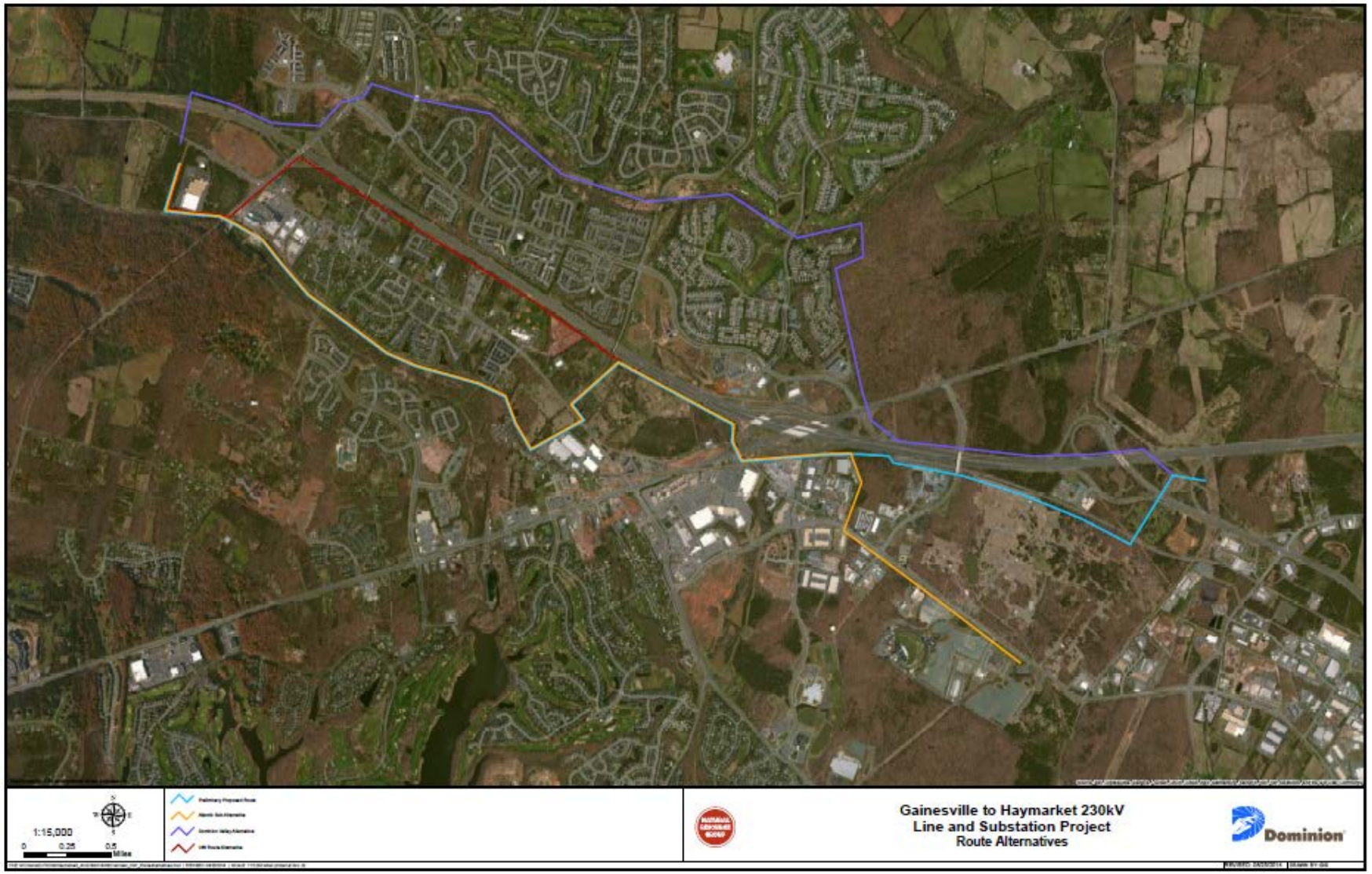
Gainesville to Haymarket Study Area

Dominion

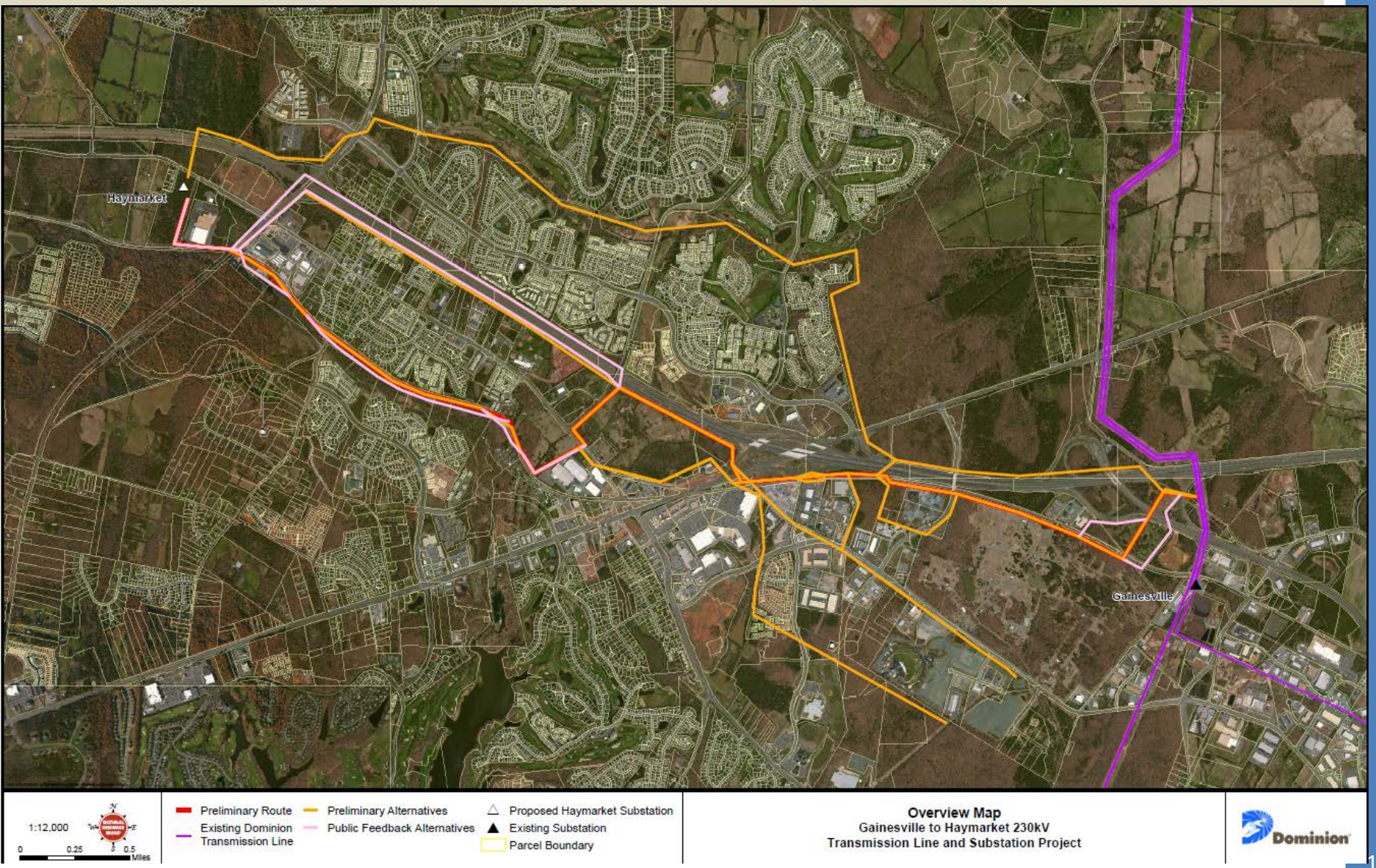
FILE: M:\Clients\D-F\DOM\Haymarket_ArcGIS\2014\06\Figures_DOM_HAY_Study_Area_8pt5x11_v2.mxd | REVISED: 06/06/2014 | SCALE: 1:48,000

DRAWN BY: JEBAKKEN

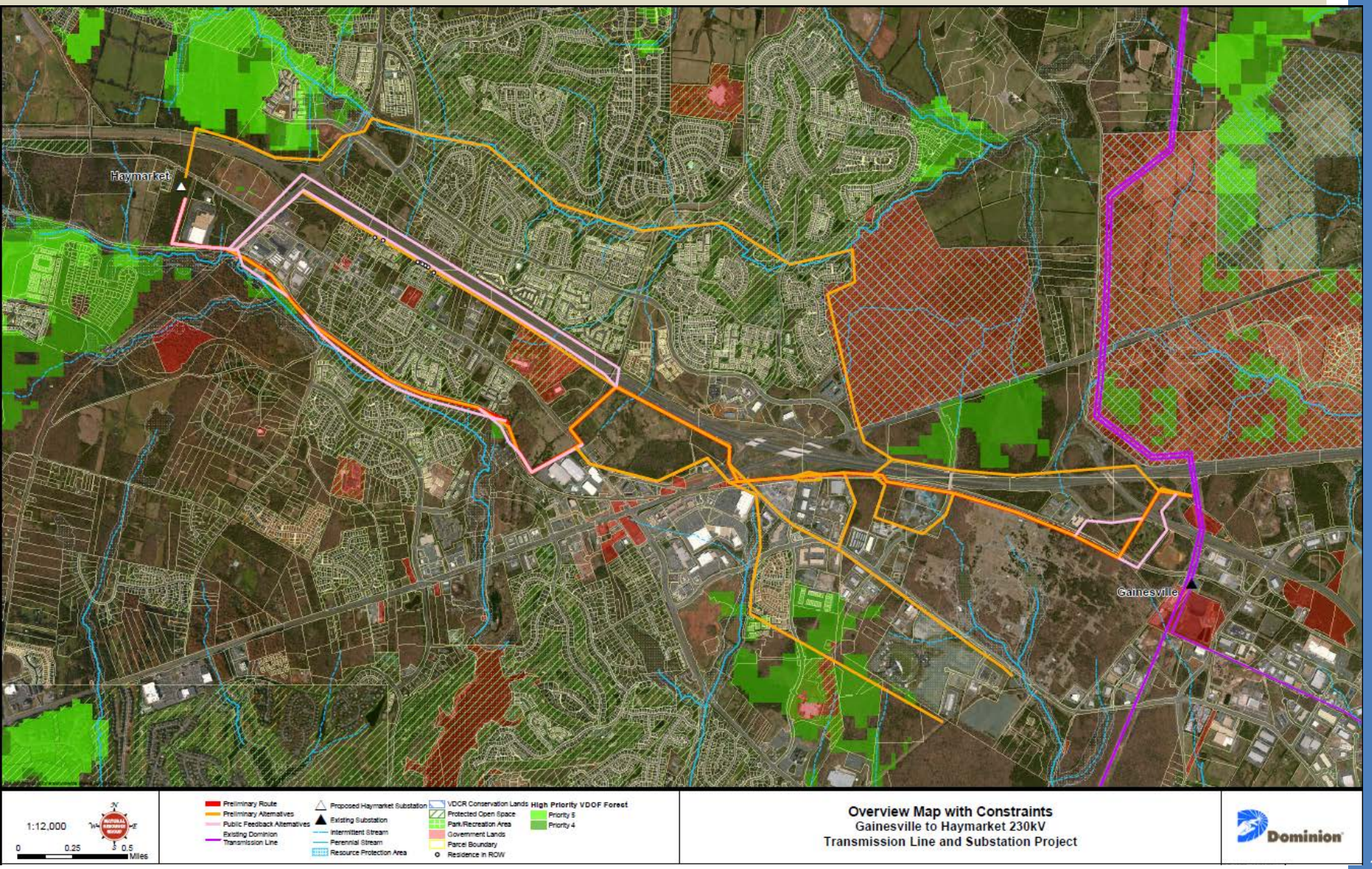
Preliminary Route Options Considered



Modified Route Options
Based on Community Feedback



Route Alternatives and Constraints: Updated Based on Community Feedback



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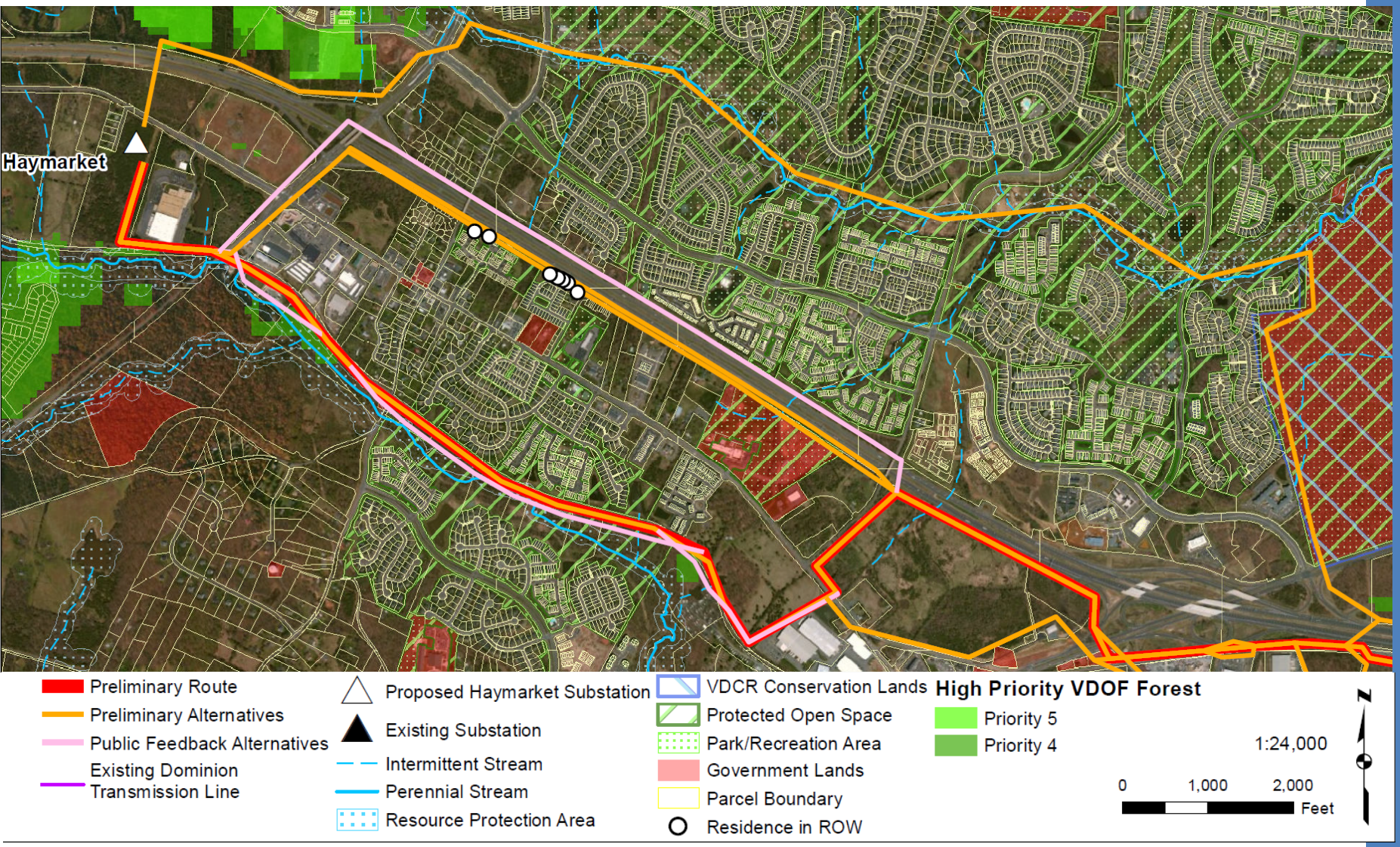

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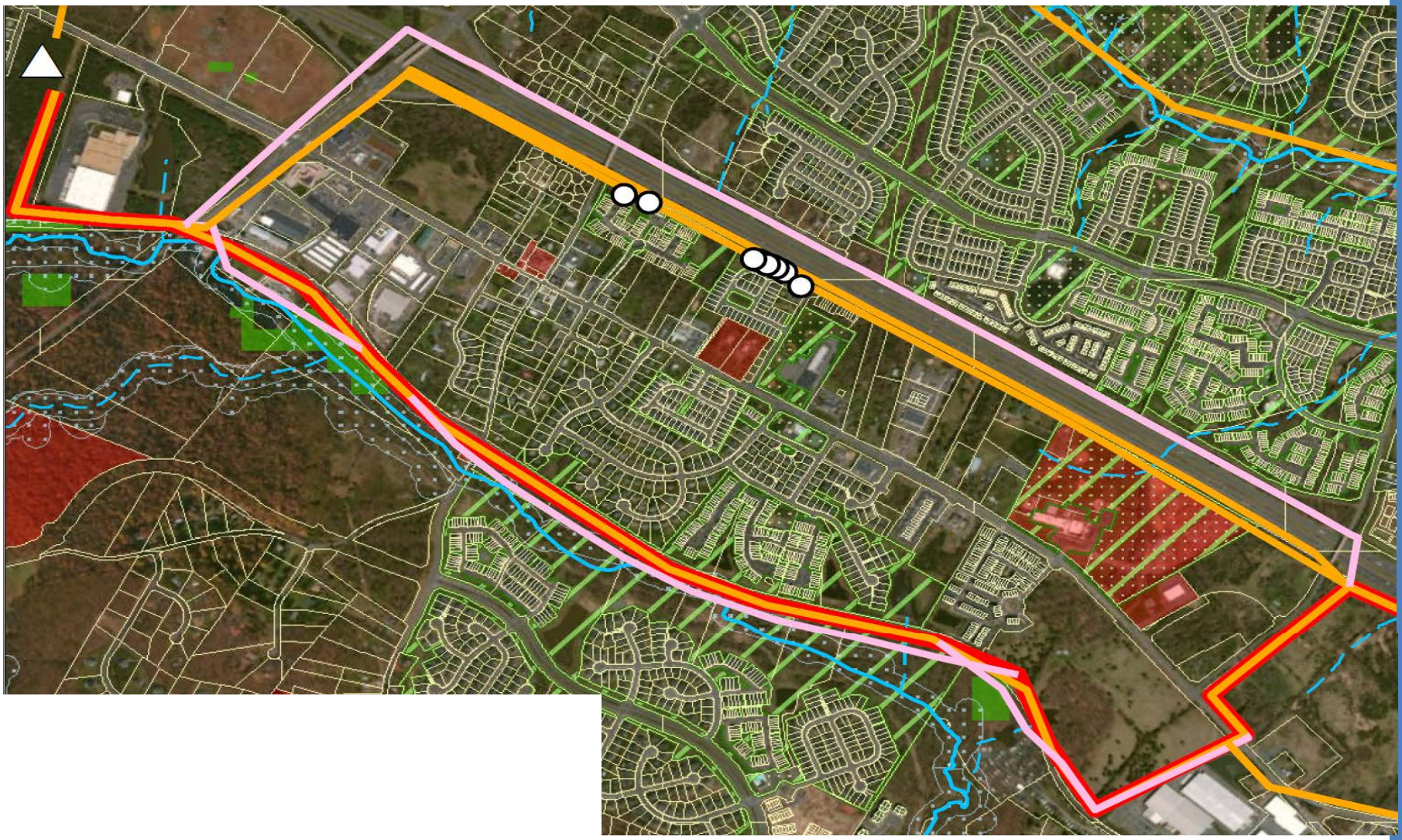


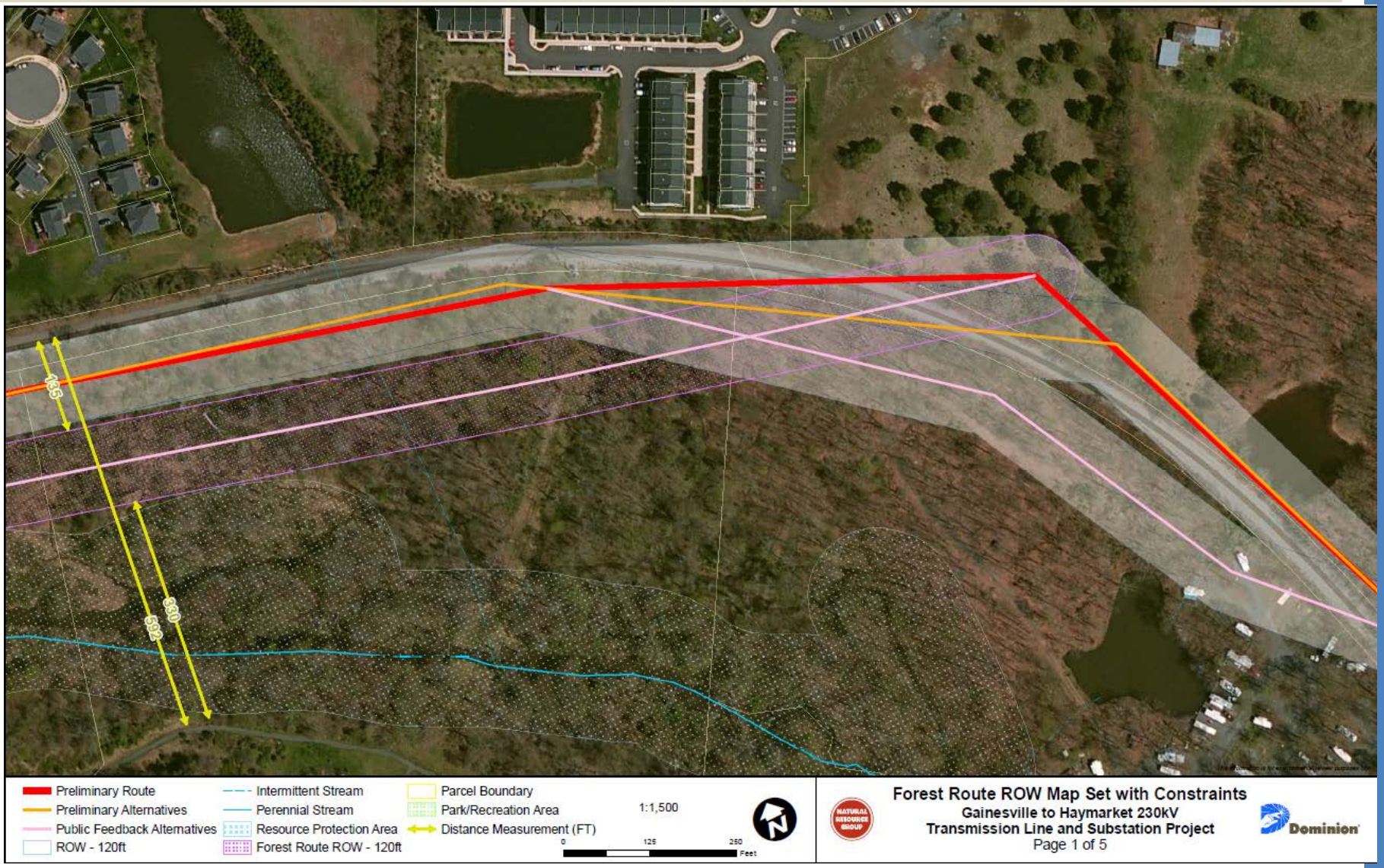
Gainesville to Haymarket 230kV Transmission Line Project
Major Preliminary Alternatives
Environmental Features Comparison Table

Environmental Features	Unit	Preliminary Route	Atlantic Sub Alternative	I-66 Alternative	Northern Alternative
Land Use Features / Constraints					
Local Government Lands	miles	0.0	0.0	0.4	0.0
State Land	miles	>0.1	>0.1	>0.1	0.9
Private Parcels Crossed (total)	number	29	36	60	23
State, County, Regional, or Municipal Parks Crossed	miles	0.0	0.0	0.3	1.9
	(number)	(0)	(0)	(2)	(3)
Virginia Birding and Wildlife Trail Crossed	number	1	1	1	1
Existing Subdivisions/Homeowners Associations Crossed	miles	1.9	2.4	1.5	1.7
	(number)	(4)	(6)	(7)	(4)
Planned Developments Crossed	miles	1.0	0.2	1.3	0.4
	(number)	(3)	(1)	(4)	(3)
Rural Crescent	miles	0.4	0.4	0.4	0.9
Houses within 500 feet	number	70	69	63	238
Houses within 200 feet	number	14	14	17	27
Houses within 100 feet	number	0	0	11	0
Multi-unit structures within 500 feet	number	28	28	37	34
Multi-unit structures within 200 feet	number	6	6	10	2
Multi-unit structures within 100 feet	number	0	0	4	0
Buildings within Right-of-Way (total)	number	9	7	24	0
Houses	number	0	0	9	0
Multi-unit Structures	number	0	0	2	0
Industrial/Commercial	number	4	4	5	0
Length Parallel to Scenic Byway/Road	miles	0.0	0.0	0.4	0.3
Environmental Constraints					
Wetlands Crossed in Right-of-Way (total)	miles	1.3	1.2	0.3	2.9
	(acres)	(14.4)	(13.6)	(4.4)	(40.0)
Waterbody Crossings (total)	number	5	6	3	22
VDOF High Forest Conservation Value 4	miles	0.2	0.2	0.0	0.0
	(acres)	6.0	6.0	(0.0)	(0.0)
VDOF High Forest Conservation Value 5	miles	0.0	0.0	0.0	<0.1
	(acres)	(0.0)	(0.0)	(0.0)	(0.3)
Resource Protection Areas Crossed	miles	0.5	0.5	0.1	2.1
	(number)	(1)	(1)	(1)	(1)
Prince William County Permanently Protected Open Space	miles	0.5	0.5	0.6	1.5
	(number)	(1)	(1)	(3)	(3)
VDCR Conservation Lands	miles	0.0	0.0	0.0	0.9
	(number)	(0)	(0)	(0)	(1)
Engineering Constraints					
Total Length	miles	6.0	5.5	5.7	6.1
Roads Crossings (total)	number	15	11	21	14
Collocation Opportunities (total)	miles	5.2	4.9	5.0	2.0
Length of Greenfield Route Required	miles	0.8	0.6	0.7	4.1
Electrically Viable	yes/no	Yes	No	Yes	Yes
Constructible	yes/no	Yes	Yes	No	Yes

*Values subject to change as final engineering and route adjustments are completed.

**Analysis as of Sept 8, 2014

Preliminary Route Compared with Modified Route based on Public Feedback



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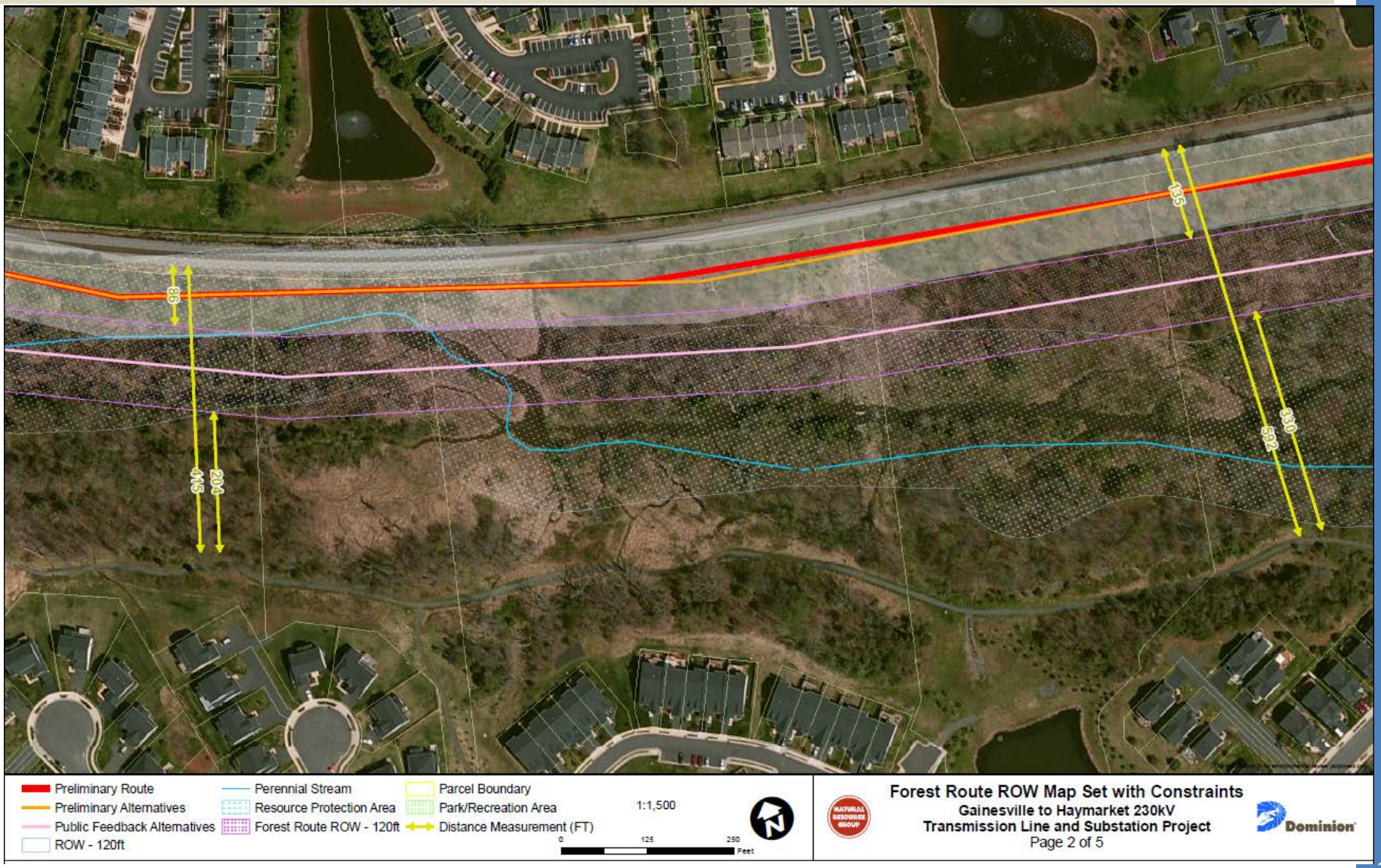

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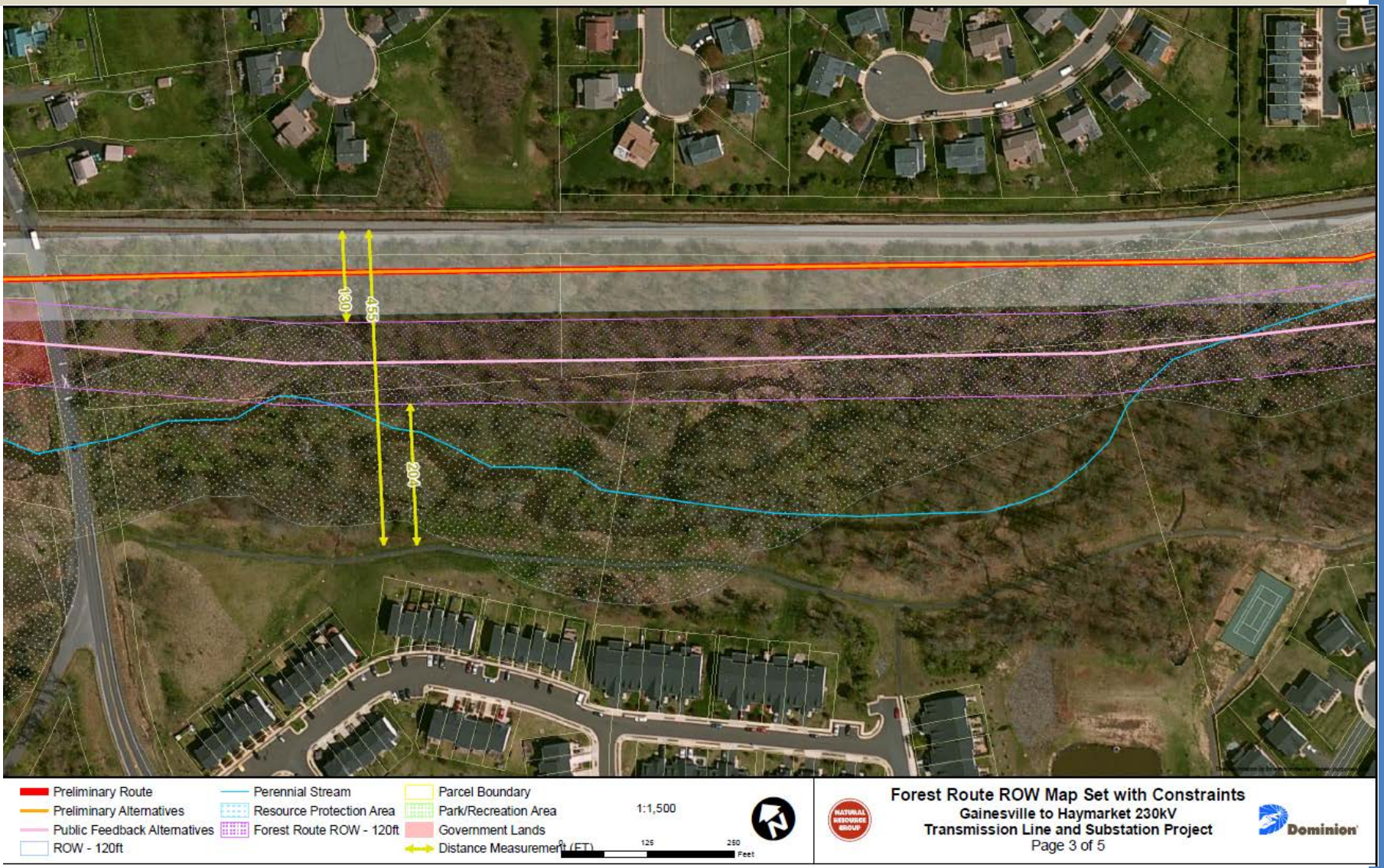

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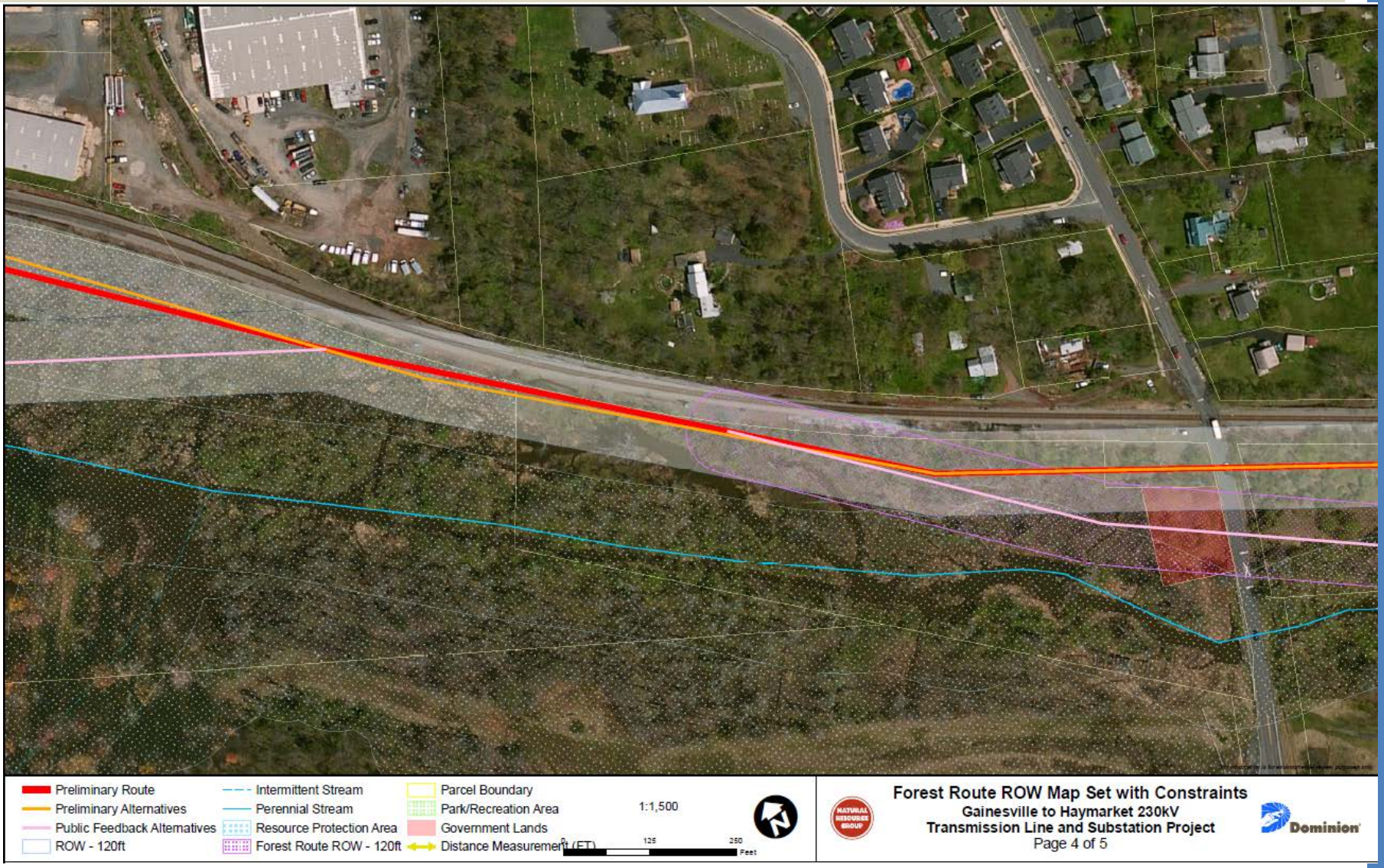

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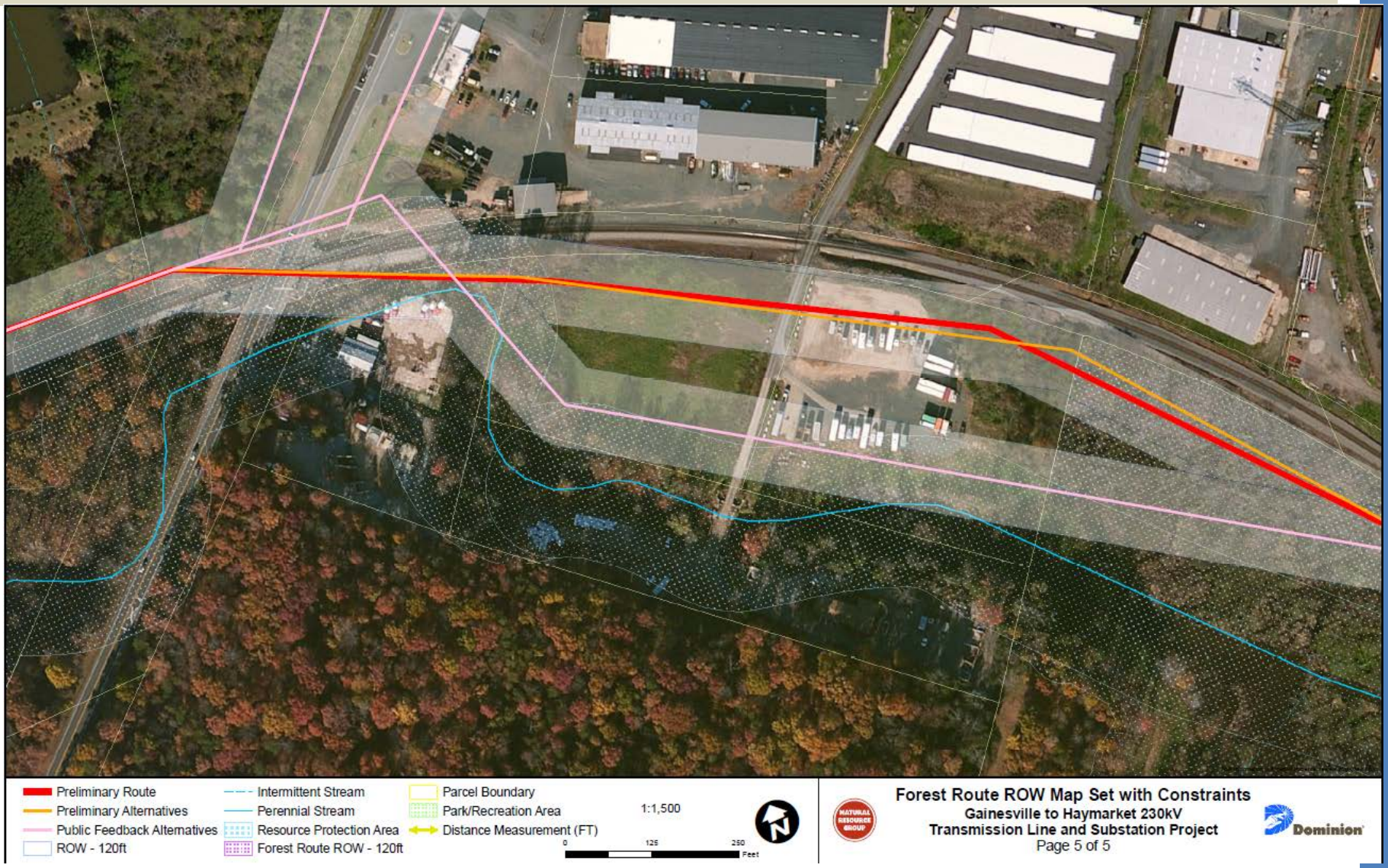

Route 66 Options

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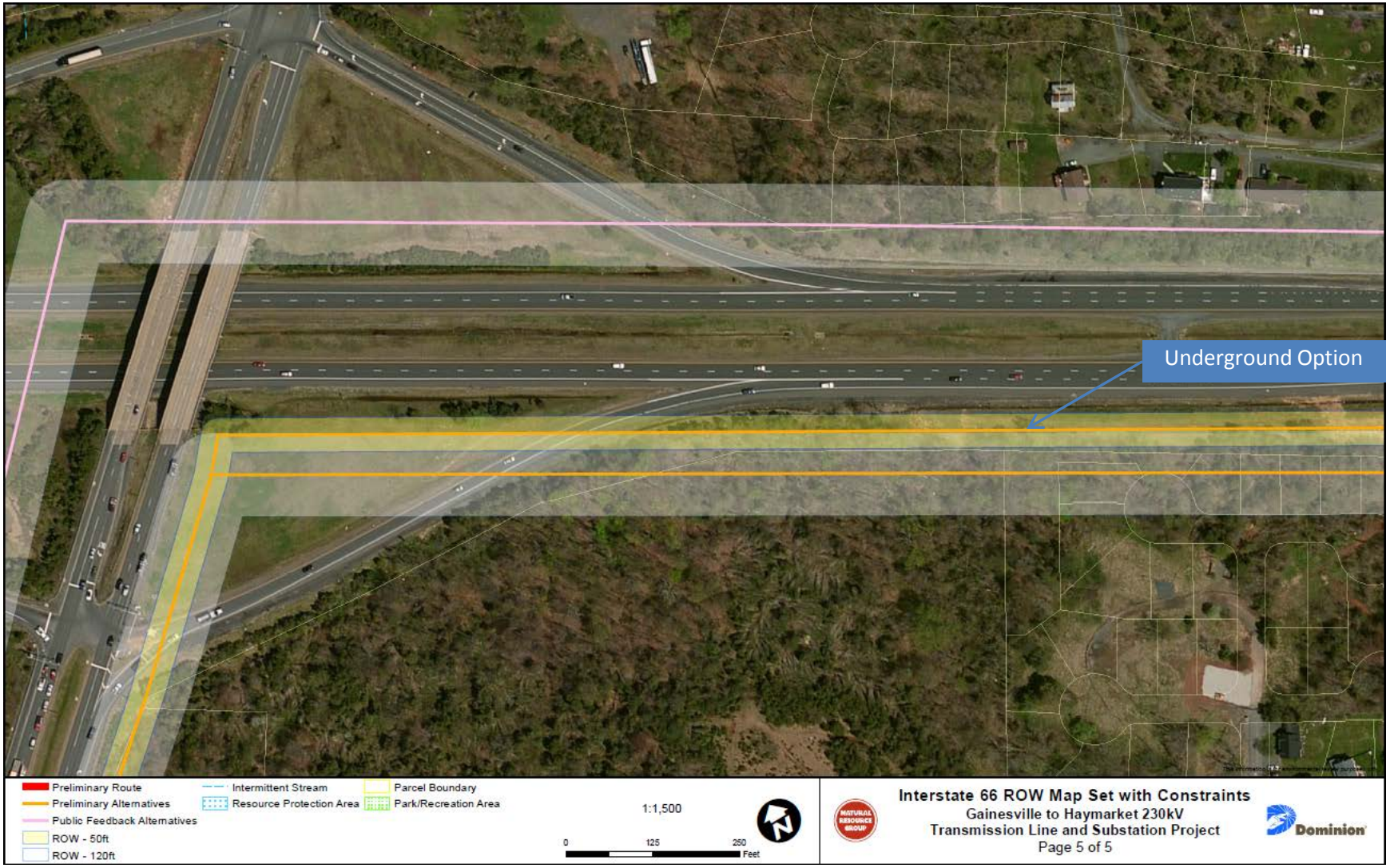

THANK YOU

Discussion / Questions