

Landscape Analysis for Competing Proposals in the PSC AC Transmission Lines Comparative Proceeding (Case No. 13-E-0488) Prepared by Richard Smardon, MLA, PhD, CEP, Visual Consultant

The following is a description of the existing and proposed utility corridors at issue in the PSC comparative proceeding for proposed AC transmission lines in the Hudson Valley Region, followed by a description of key resources affected by the various corridors and alternative proposals. A description of the methodology used is included first. A summary of impacts and alternatives, ranked by impact level (Rank HIGH for worst impact, MEDIUM for next worst impact, to Rank LOW for least impact) based on specific resources affected and proposed transmission construction technology is provided. An overall ranking of alternative proposals is also provided. The appendix includes detailed field inventory data and photos (Appendices I and II) plus Scenic Areas of Statewide Significance (“SASS”) area and subunit descriptions (Appendix III).

Methodology included review of all documents on the PSC web site for each of the four proposals with special attention to cultural and historic and visual resource study documents and maps. The investigator also utilized Google Earth to follow existing utility right-of-way (“ROW”) where it was indicated that such ROW’s were to be utilized by any of the proposed routes. This was followed by detailed field inventory on June 15 (east side of river) and June 16 (west side of river) driving roads (see Appendix 1) near existing and proposed utility ROW, plus photographing (176 photos listed and included in Appendix II) key scenic resources and viewpoints. Ranking was done for specific power line corridors affecting specific landscape resources. An overall ranking of all alternatives was also done.

Hudson Valley Utility Right-of-Way Existing and Proposed Corridor Descriptions and Landscape Impacts

The following sections describe the existing and proposed utility corridors in the Hudson Valley at issue in this proceeding and the landscapes that they pass through. The alternatives that propose to use each corridor are also described, and areas of concern are indicated.

Knickerbocker to Churchtown to Pleasant Valley 115 kV Corridor

This existing 115 kV corridor runs north-south between a proposed new substation near Knickerbocker Road in Rennselaer County, through an existing substation in Churchtown near Orchard Road in Claverack, to the existing substation in the Town of Pleasant Valley in Dutchess County.

From the proposed Knickerbocker substation, the corridor runs almost directly south through Columbia County, making a detour around Columbiaville, Stockport

and Stottville, passing to the east of the City of Hudson and crossing Route 23B, Stone Hill Road and Routes 23/9H to the existing Churchtown station. Turning southwest, the route crosses Bells Pond Road, Route 82, Estok Road, Schneider Road, Church Road, Lockwood Road, Scuderhook Road, and Deer Haven Road. Further south the ROW is mostly wooded, crossing County Route 8, White Oak Road, Snyderville Road and Jackson Corners Road. The corridor joins with the Leeds to Pleasant Valley 345 kV corridor (see below) just before crossing Turkey Hill Road, and is wooded on both sides. The larger ROW crosses Becker Hill Road, Battenfeld Road, Rte. 199, Salisbury Turnpike and Round Lake Road with a continuous wooded edge. South of Round Lake Road, the corridor splits off and the route goes to the southeast and crosses Pond Rd. and turns south and runs parallel to Milan Hollow Rd. and crosses Deer Hill Road. At this point the ROW is very close to Silver Lake and crosses Serenity Hill Road, then Bulls Head Rd. and the Little Wappinger Creek. The ROW continues on as a wooded edge corridor and crosses Maple Lane, Nine Partners Road and Clinton Corners/Schultzville Road before turning to the southwest. The ROW continues as a wooded edge corridor and crosses Breezy Hill Road, Hollow Rd, Clinton Hollow Road and the Little Wappinger Creek again. The wooded edge corridor is interspersed with a few openings as it passes West Halsted Rd., Clinton Ave., Ward Road and Ring Road in the Town of Pleasant Valley. The pattern is more open with fields and houses as the ROW crosses Netherwood Road and passes Kron Drive and housing subdivisions on the east side. The ROW crosses Salt Point Turnpike and Wigsten Road with development interspersed with wooded areas on both side, crosses West Road and then ends at the Pleasant Valley substation.

See Photos:

Knickerbocker to Pleasant Valley 115 kV corridor:

4528-4535 Knickerbocker site

4441-4444 Churchtown substation site

4432-4436 Milan large ROW (multiple lines and structures)

4427-4431 Clinton/Milan

4423-4426 Pleasant Valley Substation

Relevant to NextEra New Scotland-Knickerbocker connection (see below):

4477-4482 Schodack Hudson River Crossing (west side)

4536-4543 Schodack Hudson River crossing (east side)

Relevant to Transco Leeds to Churchtown connection for LD-PV segment (see below):

4493-4501 west side Hudson River crossing (LD-PV and LD-CT combined ROW)

4445-4448 east side Hudson River crossing (LD-PV and LD-CT combined ROW)



Knickerbocker/Muitzekill Road – Knockerbocker substation area

Shared ROW Town of Milan, Becker Hill Road





Hollow Road



Pleasant Valley Substation



Schodack Hudson River Crossing

This corridor is proposed to be used by three applicants for several alternatives:

- 1) NextEra proposes to use this corridor for four (4) of its alternatives: (a) Knickerbocker Route, (b) Marcy Northern Route, (c) Marcy Southern Route 1 and (d) Marcy Southern Route 2. The 62-mile long Knickerbocker Route alternative proposes to replace existing lattice structures between East Greenbush (north of the proposed Knickerbocker station) and Pleasant Valley with monopoles of up to 105', and each of the remaining three NextEra alternatives listed above include this same proposal. The Marcy Southern Route 2 adds a connection between New Scotland and the proposed Knickerbocker substation, proposing to replace 175' poles with 2 sets of 97' poles in this section, with two Hudson River crossings at Schodack: one using the existing aerial crossing and the second by HDD. NextEra also proposes a new substation at North Churchtown along this corridor.
- 2) NAT proposes to use this Route in its 115 kV Alternative, which includes a connection between New Scotland and the proposed Knickerbocker substation running parallel to existing CSX railroad line, with a new Hudson River crossing at Schodack. NAT proposes to replace existing lattice structures with wider, 80' H-frame structures in this corridor.
- 3) Transco proposes to use this corridor, or part of it, in several alternatives. Three alternatives, (a) KB-PV, (b) ED-NS/KB-PV, and (c) OF/ED-NS/KB-PV, are proposed to use the entire corridor, replacing existing 80' lattice

structures with 90-95' monopoles in the northern section between Knickerbocker and Churchtown, and replacing two lines of existing 80' lattice structures with 90' 115/345 kV double circuit monopoles between Churchtown and Pleasant Valley. Transco also proposes a new Knickerbocker substation and a rebuilt and expanded 115kV Churchtown switching station. In addition, two other Transco alternatives use the southern segment between Churchtown and Pleasant Valley: (a) NS-LD(R)/LD-PV and (b) ED-NS/NS-LD(R)/LD-PV. The LD-PV segment used in these alternatives connects the Leeds substation with Churchtown, and crosses the Hudson River south of Athens and Hudson at Greenport, using an existing aerial crossing, then continues from Churchtown to Pleasant Valley.

Key scenic resources affected by the 115kV route include several Columbia North Scenic Areas of Significance. The northern part of the route, from Knickerbocker to Churchtown, is in wide-open agricultural areas, and will impact the CGH- 14 Stuyvesant Farms Subunit, and will impact Route 9J, a NYS Scenic Road. The entire route will also impact a number of historic properties and districts. The NAT alternative, which crosses the Hudson River at Schodack, will affect the CGN-4 Island subunit at the Hudson River crossing and the CGN-13 Schodack Landing subunit. Schodack Island State Park will also be impacted. Key scenic resources affected by the Transco LD-PV segment which includes a Hudson River crossing just south of Athens and Hudson at Greenport include: Olana subunit of the Catskill/Olana Scenic Area of Statewide significance and the Olana State Historic Park, plus a number of historic properties and historic districts. The route also has a number of water crossings, including the Little Wappinger Creek and Claverack Creek, and numerous road crossings. Especially affected would be open agricultural landscapes with viewsheds, green areas with easements. Another affected scenic resource is the Silver Lake area.

The concern with the proposals in this corridor would be the visual impact of new structures within the ROW plus stream and road crossings. The proposed monopole structures are higher, which could particularly result in increased impacts in the Knickerbocker to Churchtown area where there are large open field landscapes where they will be highly visible depending on what color and finish (reflective or not) that they will have. There would be at least 12 road crossings. The additional clearing needed to replace structures, especially the wider 80' high structures proposed by NAT, may bring additional negative visual impacts as screening vegetation is removed.

Leeds/Athens to Pleasant Valley 345 kV Corridor

The initial section of the Leeds/Athens to Pleasant Valley 345 kV corridor runs parallel and adjacent, on the south side, to the existing 115 kV line that runs between Leeds and Churchtown and crosses the Hudson River (which Transco proposes to use in two of its alternatives (NS-LD(R)/LD-PV and ED-NS/NS-LD(R)/LD-PV) (see above)). Then, it splits away and runs south to Pleasant Valley to

the west of the Knickerbocker to Churchtown to Pleasant Valley 115 kV corridor (described above), coming together with and sharing a very large 590'-wide ROW with that line (and others) in the Town of Milan, Dutchess County, then splitting away to the west again and ending at the Pleasant Valley substation.

From Leeds substation (located near the Athens generating plant), the ROW travels southeast across open agricultural fields crossing Howard Hall Road then turning southeast before crossing Route 385 and the Hudson River. On the east shore, the corridor passes over Mt. Merino Rd and then crosses Route 23B/9G, then heads due south, crossing Route 23, and then splits away from the Leeds to Churchtown ROW and crosses Route 31 (Blue Hill Road) and Church Road. Heading almost due south, the ROW crosses Cold Spring Road, Route 10, Route 9, Maple Lane, Old Manorton, and Route 8 (Blue Hill Road). As it nears Elizaville, the ROW crosses the Roeliff Jansen Kill, Pleasant Vale Road and Kerleys Corners Road, then crosses into the Town of Milan and turns southeast and crosses Spring Lake Road and Oak Farm Road and joins the Knickerbocker to Pleasant Valley 115kV corridor in the large ROW in Milan. The combined ROW crosses Turkey Hill Road, Becker Hill Road and Battenfeld Road, then crosses Route 199 near Milan Hill Road and continues south across the Salisbury Turnpike and Round Lake Road. The Leeds/Athens to Pleasant Valley 345 kV corridor then splits away from the Knickerbocker to Pleasant Valley 115kV corridor and heads southwest, crossing Kansas Road, passing just to the west of the Omega Institute for Holistic Studies, and crossing Fiddlers Bridge Road, Schoolhouse Road, Rhynders Road, Meadowbrook Road, Hollow Road, Fallkill Road and Ruskey Lane. The corridor then crosses from the Town of Clinton into the Town of Pleasant Valley, and crosses Marshall Road, Netherwood Road, Melville Road, and the Salt Point Turnpike before turning further east and crossing Van Wagner Road and ending at the Pleasant Valley Substation.

See photos:

4483-4492 Leeds Substation/Athens area

4493-4501 west side Hudson River crossing (LD-PV and LD-CT combined ROW)

4445-4448 east side Hudson River crossing (LD-PV and LD-CT combined ROW)

4445-4450 LD-PV and LD-CT combined ROW

4451-4459 Blue Hill, Cold Spring Roads

4437-4440 Oak Farm Road/Kerleys Corners area

4432-4436 Town of Milan large shared ROW

44420-4422 Van Wagner Road, Pleasant Valley

4423-4426 Pleasant Valley substation

Relevant to Transco and NAT proposals (see below):

4460-4476 New Scotland to Leeds photos



Hudson River crossing at Mt. Merino, south of Hudson (LD-PV and LD-CT lines)



Blue Hill Road



Cold Spring Road



Kerleys Corners Rd



Van Wagner Road

This Leeds to Pleasant Valley corridor is proposed to be used by Boundless and Transco. Both applicants propose to reconnector the existing 345 kV line. The Hudson River crossing just south of Athens and Hudson at Greenport will use the existing power line support structures. The reconnectoring project is one part of Boundless's overall project, and used in two Transco alternatives: (a) LD-PV(R) and (b) ED-NS/NS-LD-PV(R). The second Transco alternative also proposes a connection with an additional project running from the New Scotland substation located to the northwest, to reconnector two existing overhead lines from the New Scotland substation for 25.9 miles within the existing ROW, connecting to the Leeds substation within the Town of Athens.

NAT proposes an alternative that runs along this New Scotland to Leeds to Pleasant Valley corridor. Its preferred alternative, New Scotland-Leeds-Pleasant Valley, proposes a new 345 kV line, running generally parallel to this corridor, in new right-of-way. In areas where the new ROW is adjacent, it is proposed to be 80' wide, with new, 125' monopoles, and in areas where the new ROW is not directly adjacent, it is proposed to be 110' wide, with 100' monopoles. The NAT proposal includes a new aerial Hudson River crossing near the existing crossings south of Athens and Hudson at Greenport.

Key Scenic Resources affected by this route include:

Olana subunit of the Catskill/Olana Scenic Area of Statewide Significance, Olana State Historic Park, a number of historic properties and historic districts, a number of water crossings, including the Roeliff Jansen Kill, and road crossings.

Additional Scenic resources affected by the New Scotland to Leeds corridor include:

Rye River Environmental Education center, the **Onesquethaw Valley Historic District** (directly impacted by Transco NS-LD). Plus crossing Onesquethaw, Hannacrois and Cocksackie Creeks, and seven road crossings.

The primary concern here is the increased clearing of ROW in vegetated areas – opening up views and in already cleared areas for reconductoring and adding new support structures. The more critical visual issue is that the open agricultural landscape in the northern part of this corridor creates a high degree of visibility especially along Blue Hill Road and Cold Spring Road (see photos, above).

Boundless Leeds to Hurley Avenue Corridor

Boundless proposes to reductor existing ROW from Leeds to the Hurley Avenue Substation. This route of the existing utility ROW begins at the Leeds substation and heads east across the NYS Thruway, then crosses Green Lake Road in Leeds then turns sharply south crossing Main street and the Catskill Creek, then turning SW and crossing Route 23 and Vedder Road. Then the route turns more south along wooded hillside paralleling Vedder Mountain Road on the east, then crossing Easy Street, Cauterskill Rd, Grove School Road, and Route 23A. Continuing south in wooded cover it runs parallel to Mossy Hill Rd., crossing Kaaterskill Creek and High Falls Rd. It proceeds south in heavily wooded cover and crosses Dave Elliot Road, then Old Route 32 and NYS Route 32, Mt Airy Road, and Hommelville Rd. After proceeding south a little farther it takes an easterly turn Near Beaver Kill and crosses Saugerties-Woodstock Road. Proceeding south in mostly wooded cover, it crosses Echo Hill Road, Plattekill Creek and Glasco Turnpike. The corridor passes German Street and turns southeast before crossing Main Street in Ruby, then proceeds south crossing Hallihans Hill Road, then makes a slight bend before crossing Sawkill Rd and running parallel to Route 209 and crossing Wood Road. Then the corridor makes a westerly turn near Catskill Park, then turns south, Crossing Route 28 and Onteora Trail. The corridor then crosses open agricultural fields, Route 209 and Esopus Creek before reaching the Hurley Avenue substation, which is within 5 miles of the EL-1 Big Rock and Hemlock Point SASS. Other scenic resources in this area include the Hurley Historic District near Millbrook Ave (1 mile away) and the John A. Coleman Catholic High school building, which is 1,350 ft. from the substation site.

See photos:

4483-4492 Leeds Substation/Athens area



Leeds substation area

Key scenic resources affected by this Boundless Route: Hurley Historic District and Catskill Forest Park Preserve. Additional water resources impacted include the Kaaterskill Creek and Esopus Creek.

The concern here is the increased clearing of ROW in vegetated areas –opening up views and in already cleared areas for reconductoring and adding new support structures.

Boundless Roseton to East Fishkill Corridor

A new transmission line is proposed between the Roseton substation, on the west bank of the Hudson River, and the east bank of the Hudson River, which is expected to be an underground line, installed in the Hudson River using horizontal directional drilling (HDD), and continuing from the east bank of the River to the East Fishkill Substation, installed by trenching in an existing NYPA ROW. The existing utility ROW crosses the Hudson River from the Roseton power plant substation then on the east side, angles to the northeast, then passes over wooded hills and crosses Route 9D at the Chelsea Substation. Then the ROW goes eastward and crosses Ketchamtown Road and Route 9 with wooded cover to the north and subdivision to the south. The ROW then crosses All Angels Road with subdivisions to the north and south, then crosses Route 82 where it intersects with a large north south utility

corridor at the East Fishkill Substation located just south of the intersections of Route 82 with Old Hopewell Road and Lake Walton Road.

See Photos:

4371-4386 Hudson River to East Fishkill

4518-4520 Roseton Hudson River crossing



Hudson River at Roseton



NYPA ROW Route 9D

Scenic Resources Affected by this Boundless Route:

The following subunits within the **Hudson Highlands Scenic Area of Statewide Significance** are crossed by the ROW:

HH-27 Dutchess Junction Subunit

HH-26 Hudson Highlands State Park Subunit

In addition, it crosses Sprout Creek.

The concern here is the increased clearing of ROW in vegetated areas necessary to conduct trenching, potentially opening views even further in already cleared areas.

NAT I-87 Alternative

The NAT I-87 Alternative runs from the New Scotland substation and parallels CSX RR ROW for 8 miles south through the Town of Bethlehem then turns to the I-87 Corridor for 55 miles through Towns of Coeymans, New Baltimore, and Coxsackie, with a connection to the Leeds Substation. Then it returns to the Thruway and proceeds through the Towns of Catskill, Saugerties, Ulster, Kingston, Rosendale, Esopus and New Paltz and then leaves the Thruway corridor and travels east 14 miles along Route 299 through the Town of Lloyd and crosses the Hudson river to Hyde Park, then to the Pleasant Valley substation. At Hyde Park, this route is proposed to pass directly to the south of the Home of Franklin Delano Roosevelt National Historic Site and through lands of the Eleanor Roosevelt National Historic Site, Val Kill, as well as the lands at Farm Lane that runs between them, which were originally protected by Scenic Hudson. This route follows existing RR or I-87 ROW for 76% of its length and has a new 80' ROW for the remainder of its length. In areas not adjacent to existing transmission ROW (most of the route) it is proposed that 125-ft. monopoles be used for typical spans at 800' intervals. In areas of existing ROW (small sections near substations) there is proposed placement of 125' monopoles roughly parallel to existing structures.

See photos:

4368-4370, 4521-4525 Thruway photos

4387-4393, 4502-4516 Walkway over the Hudson photos

4394-4419 FDR Home, Scenic Hudson Farm Lane, ValKill site photos



Thruway at West Baltimore Rest Stop



FDR Cove Trail



Farm Lane



Entry to ValKill

Key scenic resources that may be affected by NAT I-87 Alternative include:

CO-4 Catskill Creek subunit as part of the **Catskill-Olana Scenic Area of Statewide Significance**

EL-1 Big Rock and Hemlock Point subunit of the **Esopus/Lloyd Scenic Area of State wide Significance**

County Route 61, NYS Route 23A and NYS route 385 all NYS scenic roads

The Catskill Park Forest reserve

HH-27 Dutchess Junction Subunit and **HH-26 Hudson Highlands State Park Subunit** of the **Hudson Highlands Scenic Area of Statewide Significance.**

FDR and Val Kill National Historic sites

The concern regarding this alternative is opening up new utility corridors and especially the proximity to the Franklin Roosevelt and Eleanor Roosevelt National Parks and connecting Farm Lane property, plus the SASS's and historic areas listed above. Potential impacts to these important, nationally recognized historic resources are especially critical.

NextEra –Thruway Alternative

This is a 178-mile transmission line largely paralleling the NYS thruway from Edic (Town of Marcy) to Pleasant Valley. At Athens it leaves the Thruway to connect to the Leeds substation then goes back to the Thruway for 38.2 miles then leaves the Thruway and goes southeast through the Town of Lloyd, crossing Route 299 and

Routes 44/55 and going across the Hudson River to Pleasant Valley through the City of Poughkeepsie. The Hudson River crossing is proposed to use either HDD under the River or the Walkway Over the Hudson or the Mid-Hudson Bridge at Poughkeepsie. The last 5 miles to Pleasant Valley are offered to be underground.

See photos:

4368-4370, 4521-4525 Thruway photos

4483-4501 Leeds to Athens area

4502-4517 Lloyd to river, Walkway over the Hudson, west side of River

4387-4393 Walkway Over the Hudson, east side of River

4387 to 4393 FDR Home, Farm Lane, Valkill



East side of Walkway over the Hudson, looking east along Dutchess Rail Trail



East side of Walkway over the Hudson, looking west

Key scenic resources that may be affected by NextEra west routes include:

EL-1 Big Rock and Hemlock Point subunit of the **Esopus/Lloyd Scenic Area of State wide Significance**

For the Walkway Over the Hudson alternative, the approach to the western end of the **Walkway Over the Hudson** may affect the **Illinois Mountain Scenic Hudson Property**, the **Hudson Valley Rail Trail**, the **Franny Reese Preserve**, and the **Highland Waterfront Park**.

Transco- Hurley Ave. Alternative

This option will require installation of equipment on Hurley Avenue in the Town of Ulster that will require an expansion of the station footprint.

Possible scenic resources affected include the **Hurley Historic District** near Millbrook Ave (1 mile away) and the John A. Coleman Catholic High school building, which is 1,350 ft. from the substation site.

Summary of Impacts and Ranking

Visually sensitive and highly dense historical landscapes in the Hudson Valley include the Hudson River crossing areas and the Knickerbocker to Churchtown corridor, which are affected by many of the alternatives. Criteria for ranking include proximity to significant publically accessible scenic and historic landscape features. Alternatives affecting Hudson River Crossing SASS areas include:

- North American to Leeds to Pleasant Valley at Greenport (new overhead) (HIGH)
- NAT I-87 Alternative at Lloyd to Hyde Park (new overhead) (HIGH)
- NAT 115 kV Alternative north of Schodack Island State Park (new overhead)(MEDIUM)
- NextEra Thruway at Lloyd/New Paltz to Poughkeepsie(buried or existing Walkway) (MEDIUM; LOW)
- Boundless Roseton to East Fishkill (buried) (MEDIUM)
- NextEra Marcy Southern 2 north of Schodack Island State Park (existing overhead and HDD) (LOW)
- Transco - Leeds to Pleasant Valley (LD-PV) at Athens (existing overhead)(LOW)
- Transco Leeds to Pleasant Valley 345kV Reconductoring at Athens (existing overhead)(LOW).

The general concern is for any new ROW surface clearing on either west or eastern Hudson River shore area, even for burial of power lines during construction or after, plus addition of reflective power lines to existing structures. Most concern is for the visual impact of new structures for alternatives that propose new aerial crossings.

There are a number of alternatives affecting the scenic and historic resources within the Knickerbocker to Churchtown corridor, and specifically the CGN-14 Stuyvesant Farms subunit of the Columbia North SASS. Ranking criteria include proximity to scenic and historic landscape resources plus length of ROW within the SASS area.

- NAT 115 kV Alternative (HIGH)
- NextEra Marcy Northern (MEDIUM)
- NextEra Marcy Southern 1 (MEDIUM)
- NextEra Marcy Southern 2 (MEDIUM)
- NextEra Knickerbocker Route (MEDIUM)
- Transco KB-CT (Knickerbocker to Churchtown) segment of several alternatives (LOW)

This particular area has a high density of historic structures and districts plus open, scenic agriculturally influenced landscape, which will be sensitive to these options involving new utility support structures and additional vegetation clearing.

Only the Transco-New Scotland to Leeds Reconductoring segment (NS-LD(R)) bisects the Onesquethaw Valley Historic District. The NAT New Scotland to Leeds to

Pleasant Valley preferred alternative proposes new transmission line in new, parallel ROW that runs near this Historic District.

Any of the PSC AC alternatives that **create any new utility ROW** will be causing some landscape impacts from clearing vegetation, opening up visibility to new power lines and adding structures into the landscape. Ranking criteria is the length of new or expanded utility ROW in proximity to scenic landscape resources. These alternatives include:

- NAT New Scotland to Leads to Pleasant Valley (additional parallel ROW) (**HIGH**)
- NAT I-87 Alternative (near substations)(**HIGH**)
- NextEra Thruway Alternative (near substations) (**MEDIUM**)

Any new ROW clearing will create contrast with the surrounding landscape and allow visibility to the new power line and support structures in open landscapes.

There may be landscape impacts due to some alternatives that propose to **replace existing power line support structures with new** H-Frame or single pole structures. This is more critical in areas that are SASS areas or have a high density of historic landscape features. Ranking criterion is the length of corridor with new support structures in proximity to scenic landscape resources. These alternatives include:

- NextEra Knickerbocker Route (105 ft. monopoles) (**MEDIUM**)
- Transco alternatives (double circuit monopole structure replacement) (**MEDIUM**).
- North American 115 KV alternative (80 ft. H-Frame) (**LOW**)

The issue here is that higher monopole support structures will appear as a more consolidated less blocky structure, but will be more visible in landscapes with less forest cover for landscapes adjacent to the utility ROW. Replacement structures that are lower, but wider, will also result in impacts from additional ROW clearing.

There are proposals for **expansion of substations** at Hurley Avenue and Churchtown, and **new substations** at Knickerbocker, North Churchtown, embedded in many of the alternatives. The Hurley Avenue Alternative seems to be most sensitive and near historic properties, districts and SASS areas. Ranking criterion is the new or expanded substation footprint in proximity to scenic and historic landscape resources. Specific ranked alternatives that include:

- North Churchtown (new substation in open landscape) (**HIGH**)
- Alternatives that propose a new substation at Knickerbocker (new substation introduced to landscape)(**HIGH**)
- Boundless Leeds to Hurley Avenue (**MEDIUM**) and
- Transco – Hurley Avenue and ED-NS/HA alternatives (**LOW**)

Overall Ranking of Alternatives:

A comparative analysis of overall visual impact on sensitive scenic and historic resources within the Hudson Valley ranks the alternatives proposed by each applicant as follows, taking into account sensitive areas and proposed technologies together:

Alternative Name	Rank
Boundless	LOW
Transco LD-PV(R)	LOW
Transco ED-NS/NS-LD-PV(R)	LOW
NAT 115 kV	MEDIUM
Transco OF/ED-PV	MEDIUM
Transco ED-NS/KB-PV	MEDIUM
Transco NS-LD(R)-LD-PV	MEDIUM
Transco ED-NS/NS-LD(R)/LD-PV	MEDIUM
Transco KB-PV	MEDIUM
NEETNY Marcy Southern 1	MEDIUM
NEETNY Knickerbocker	MEDIUM
NEETNY Marcy Northern	MEDIUM
NEETNY Marcy Southern 2	HIGH
NEETNY Thruway	HIGH
NAT Preferred Alternative	HIGH
NAT Thruway	HIGHEST

The NAT Thruway Alternative has the overall worst visual impact. This alternative is closely followed by the NEETNY Thruway alternative and NAT's Preferred Alternative as both requires new ROW in visually sensitive areas. The projects that, on a comparative basis, would represent the least visual impact are those that exclusively involve reconductoring and/or undergrounding – Boundless

and Transco's LD-PV(R) and ED-NS_NS-LD-PV(R) proposals. These projects would still involve temporary visual impact during construction, whether the reconductoring is done aerially or from the ground. Transco also proposes that about 10% of structures would need to be replaced, which could represent increased visual impact. Boundless states that additional equipment would have to be placed on some towers, but there is no analysis of the visual impact of that equipment or whether it would add to the height or visual profile of the transmission towers. While there would be some visual impact, certainly temporary and perhaps permanent, from these reconductoring proposals, it would be on balance the least of the alternatives on the table.

Appendix I: Routing for field inventory

The following Route sequence is based on tracing routes on the JIMAPCO New York State Road Atlas and then modified in the field

Route map east side for Monday June 15th

Hudson River to East Fishkill

Take 9 south to 9D to River Road then Chelsea Road to Chelsea Yaught Club south of river crossing then took Baxtertown Rd to Main Street to Route 52 to Mountfront Rd to East Fishkill substation.

Hudson River Poughkeepsie and Hyde Park Crossings

Then took Rte. 9 north to Poughkeepsie and pedestrian Hudson River Walkway
Then north on Route 9 to the Franklin Roosevelt National Park and hiked cove trail to the river-Also visited Farm Lane across the street from the national park. Farm Lane trails also is across the road (Violet Avenue/creek road) from Eleanor Roosevelt NP.

From this point took East Dutchess Lane to Salt to West Rd to Pleasant Valley Station -

Pleasant Valley to Churchtown

From PV substation take route 72 and 73 north
Smith Rd (41) to Clinton Avenue to Browning Road
Take Centre (Rte. 18) to Silver Lake Road to Pond Rd.
Then take Round Lake Rd (Rte. 52) west to unnamed Rd north to Rock City Rd.
To Battenfield Rd to Becker Hill Rd north
To Odak Farm Rd (55/19) to Snyderville Rd and Kerlany Corners Rd
To Tagnkanic Rd. To Livingston Rd west
To Willow brook Rd and Church Rd
To Schoolhouse Rd, Millbrook Rd, and proposed North Churchtown Station

Hudson River Crossing south to Four Corners

Then took 23B west to Mt. Merino Rd and river crossing from Athens
Then proceed south on Route 23 to Route 31/Blue hill Road
To Cold Spring Road to Route 9 to Route 8/Highway 44
And then back to Poughkeepsie

**Route map sequence from west side for Tuesday June 16th
New Scotland to Coeymans & River Crossing**

From New Scotland substation – take new Scotland South Rd to Unionville Feura Busch Road (308) to Main Street
To Old Quarry Road (102) to South St (54)
To Albany Road to Bridge Street
Continue on Bridge St. to Pictuary Rd. to 9W
Then take 9W south through Coeymans to Ravena
Mains Street Route 143 to Coeymans Landing Park
Then 144 north to Port of Coeymans and Henry Hudson Park
Then proceeded south on 9W through New Baltimore, Coxackle to Athens

Leeds to Athens

Took 23B west to Leeds and then
To Green Lake Road to Leeds Substation on Leeds Athens Road to Athens Park
Then proceeded south on North Washington Street/Route 385 river crossing

I-87 corridor south

Continue on 9W-23A to Kings Road through Catskill, and Saugerties
Then took I-87 south to Kingston for lunch and then back on I-87 south to New Paltz

Lloyd to river crossing

Took Route 299 to Redtop Road to Bellevue Road to River Road and Highland Landing Park
Proceeded south on River Road underneath Hudson River walkway and Mid-Hudson Bridge.

Roseton to River Crossing

Then south on 9W through Marlborough to unnamed road to river and Roseton and southern most river crossing.

I-87 Corridor North

Proceeded north on I-87 at Newburgh to 23E to Rip Van Winkle Bridge

Churchtown to Knickerbocker

Then back to 9H North to Route 9 to Knickerbocker Road

Knickerbocker to Hudson River Crossing

To Schodack Island State Park Landing just south of river crossing
Then Route 9J back to Albany

Appendix II: Photo log for field inventory

I-87 West Baltimore Rest Stop

Shots 1-3 (4368, 4369, 4370) West Baltimore rest area looking south
Note power line crossings a Situate and Coxackle while traveling south on I-87

Hudson River to East Fishkill

Photos 4-9 (4371, 4372, 4373, 4374, 4375, 4376) looking north at river front at Chelsea Yaught club a proposed crossing
Photo10 (4377) at 9D north at NYPA utility line
Photo 11-13 (4378,4379, 4380) looking SW and NE at power line and substation
Photo 14(4381) at Helen Rd subdivision looking at substation

Photo 15 (4382) at foot of power drive looking SW at substation
Photo 16-19(4383, 4384, 4385, 4386) at Mountfront Rd power lines plus substation

Hudson River Poughkeepsie and Hyde Park Crossings

Photo 20-26 (4387, 4388, 4389, 4390, 4391, 4392, 4393) pedestrian bridge at Poughkeepsie

Photos 27-43 (4394, 4395, 4396, 4397, 4398, 4399, 4400, 4401, 4402, 4403, 4404, 4405, 4406, 4407, 4408, 4409, 4410) Franklin Roosevelt Park and Cove trail at southern edge

Photos 44-51 (4411, 4412, 4413, 4414, 4415, 4416, 4417 4418), Farm lane Trails (Scenic Hudson) property

Photo 52 Van kiln property (4419)

Pleasant Valley to Churchtown

Photos 53-55 (4420,4421, 4422) Van Wagar Rd before salt springs Rd looking SE toward Substation

Photos 56-59 (4423, 4424, 4425, 4426) Pleasant Valley substation

Photo 60 (4427) Clinton Avenue south of Browning

Photos 61-62 (4428 & 4429) from Hallow Road north of Centre Rd

Photos 64-65(4430 & 4431) North /south of Pond Rd in Milan

Photo 66 (4432) Round lake Rd (north)

Photos 67-68 (4433, 4434) Battenfield Rd Milan

Photo 69 (4435) North Becker Hill Rd Milan

Photo 70 (4436) north from Becker Hill Rd Milan

Photo 71 (4437) Odak Farm Rd. NW

Photo72 (4438) Odak Farm Rd NW

Photo 73 (4439) Kerlany Corners Rd

Photo74 (4440) Willow brook Rd (corner of church road

Photo75 (4441) of Millbrook Rd (substation)

Photos76-77 (4442,4443, 4444) taken further up the road

Hudson River Crossing south to Four Corners

Photos 78-81 (4445, 4446, 4447, 4448) of Mt. Merino Rd crossing of Hudson

Photos west on Route 23 (4449, 4450)

Photos 84-85 (4451,4452), north and south on Rte. 31/Blue hill Road after the split just south of Route 23 plus multiple views (left side) of blue hill Road heading south

Photos 86-87(4453, 4454) of Cold Spring Road NW and SE

Photos 88-89(4455,4456) NW/SE Route 9

Photos 90-92(4457, 4458, 4459) NS from Route 8/Hwy 44

Second day east side

New Scotland to Coeymans & River Crossing

Photos 93-94 (4460, 4461) off Route 308 Scotland South Road

Photos 95(4462) looking NE off New Scotland Road

Photo 96(4463) looking NW off New Scotland Road

Photos 97, 98, 99, 100,101(4464,4465, 4466, 4467, 4468) looking north at New Scotland substation

Photo 102 (4469) looking south on 308 Feura bush road
Photo103 (4470) looking SW on Feura bush Road
Photo104 (4471) looking NE on Feura Bush Road/Main Street
Photo 105 (4472) looking s/SE from Feura Bush Rd/Main Street down utility corridor
Photo 106 (4473) looking SE on Old Quarry Road
Photo107 (4474) looking NW on Old Quarry Road
Photo108 (4475) looking north on Pictuary Road
Photo109 (4476) looking south on Pictuary Road – we turned sharp right 9W same line crosses
Photos 110, 111(4477,4478) looking north from Coeymans Landing Park
Photo112 (4479) looking north from NE corner of park
Photo113 (4480) looking NE from 144 into Port of Coeymans
Photo114 (4481) sign for Bethlehem Boat Launch/ Henry Hudson Park
Photo 115 (4482) looking north from park/boat launch

Leeds to Athens

Photo116 (4483) looking NE on Route 23 B west of Leeds
Photo 117 (4484) looking SE on Route 23 B “ “
Note on Green lake Road from Leeds there are occasional views to the left
One line Green Lakes Rd near Sandy Plains & Gypsy Point Road
Along Leeds-Athens Road towards Athens – can see occasional glimpse to the left
Photo 118 (4485) looking east on Leeds Athens Road
Photo 119 (4486) looking north on Leeds Athens Road
Photo 120 (4487) southwest on Leeds Athens Road
Photos 121, 122, 123 (4488,4489, 4490) looking NE at Leeds substation from on Leeds Athens Road
Lines runs parallel to left of Leeds Athens Road
Photo 124 (4491) looking north at crossing of LA Road and Sourborough Rd
Photo 125 (4492) looking south at same position- occasional views on right side of LA Road
Photos 126/127 (4493, 4494) looking south and SE over Hudson River at Athens River Park
Photo128 (4495) historic Athens structure with view of the river
Photo 129 (4496) Village of Athens park sign
Photo 130 (4497) end of street fronting on River Park
Photo 131 another shot of park (4498)
Photo132 (4499) south on North Washington St showing west end of support structure
Photos133, 134 (4500, 4501) due east showing crossing on North Washington Street

I-87 corridor south

Took thruway from Saugerties to Kingston – power lines on the right from Saugerties north of Kingston – line of support structures on east side of thruway south of Kingston. There is a line crossing substation on route 299 just east of Thruway ramp in New Paltz

Lloyd to river crossing

Photo 135 (4502) windshield shot looking east on River Road in Lloyd
Photos 136, 137 (4503, 4504) looking north at Highland landing park
Photos 138, 139,140 (4505, 4506, 4507) looking south from Highland Landing Park
Photo141 (4508) Highland Landing Park Sign
Photo 142 (4509) close up of west end of walkway –going south toward Fanny Reese Park
Photo 143 (4510) under Mid-Hudson Bridge looking south
Photo 144 (4511) looking at NE at the mid-Hudson bridge
Photo 145 (4512) looking north at Walkway from Oak Road
Photo 146 (4513) looking at walkway under Mid-Hudson Bridge
Photo 147 (4514) shot of substation at west end of Walkway trail off Hallivand Road
Photo 148 (4515) looking east at beginning of walkway
Photo 149 (4516) shot of directional loop trail sign
Headed south on 9W - power lines cross 9W about 2 miles south of Marlboro
Photo150 (4517) looking SE corner of 9W and Conway just south of Marlboro

Roseton to River Crossing

Photo 151 (4518) looking NE in Roseton
Photo 152 (4519) looking NEE at bend on road in Roseton
Photo 153 (4520) looking south at same position at Newburg Beacon Bridge

I-87 Corridor North

Photo 154 (4521) shot from windshield on I-87 just north of Newburg
Photos155 156 (4522, 4523) windshield shots just south of New Paltz
Photos 157 158 (4524, 4525) shots of structures on I-87 just south of Kingston

Churchtown to Knickerbocker

Photo159 (4526) windshield shot on 23E toward Rip Van Winkle Bridge
Photo 160 (4527) of Martin Van Buren House NP on 9H going north
Photo 161 (4528) looking SE in McKnight in Schodack
Photo 162 (4529) looking south from same position
Photo 163 (4530) looking south near Knickerbocker & Muitzeskill Road
Photos 164 165 (4531, 4532) looking north and south from same position
Photo166 (4533) looking SW on Knickerbocker Road
Photos 167-168 (4534, 4535) looking south from same position
Occasional views on right of Knickerbocker Rd

Knickerbocker to Hudson River Crossing

Photo169 (4536) looking west just before the Berkshire Spur Bridge
Photos 170 171 (4537, 4538) looking east and west before entry road to Schodack Island State Park
Photos 172, 173 (4539, 4540) looking north at the edge of the park
Photo 174 (4541) close up of western /island shore areas
Photo175 (4542) shot of Schodack park sign
Photo 176 (4543) looking south from park
Note two crossings were seen traveling north on 9J.

Appendix III: Scenic Areas of Statewide Significance Descriptions

The following is the potential SASS areas given the utility corridor alignments proposed.

CGN-4 Islands Subunit- Columbia North Scenic Areas of Significance

The unit covers south of the thruway bridge over the river to north of Coxackle Creek. These are mostly flat islands, with alluvium and fill. They include Upper and Lower Schodack Islands and are used for limited recreation – hunting, wildlife viewing and passing boats. According to the DOS SASS report the island have an unspoiled natural appearance and have “ screened, relatively short and narrow views over the Hudson River and Schodack Creek to dramatic background elements of bluffs, hills and historic villages on the shore lands in adjacent subunits” (DOS 1993, p. 31).

CGN-13 Schodack Landing Subunit- Columbia North Scenic Areas of Significance

The northern boundary is Knickerbocker Road and eastern boundary is the coastal edge and southern boundaries include the railroad spur inland from the Hudson River and the CGN-15 Poolsburg Subunit. The area consists of heavily wooded bluffs and terraces paralleling the Hudson River. Vegetation is diverse consisting of lawns to individual trees to mature woodlands, orchards and meadows. The predominate land use is residential with clusters of historic houses along Route 9J. According to the DOS SASS report there are “full views of 90 to 180 degrees in width and 2 to 3 miles long of the Hudson River and Lower Schodack Island” (DOS 1993, p. 52) Views of the RR tracks and the NYS Thruway Bridge are also visible.

CGN-14 Stuyvesant Farms Subunit- Columbia North Scenic Areas of Significance

The landscape unit is eastward of the Hudson River bluffs and runs south for 3 miles from the Columbia-Rensselaer County Line and is roughly 1 mile in with. This landscape area has rolling hills and small ravines- interspersed with large open agricultural fields with meadows, orchards and woodlands. There are varied views with limited views of the Hudson River. According to the DOS SASS report there are “more substantial views 90 to 180 degrees over fields to woods and distant hills to the east, the Berkshires, and west to the Catskills. Views of farms and woodlands create a rich 3-dimensional tapestry. Historic farmsteads and estates service as focal points in the landscape of fields and woods” (DOS 1993, p. 53).

CO-6 Olana Subunit- Catskill/Olana Scenic Area of Statewide significance

This unit is one square mile and is the Olana State Historic Site. This site has a 475-foot high dramatic hill with the Olana Mansion at the top of the hill and the designed landscape on the side slope. There are distant Hudson River views from the top of the hill. According to the DOS SASS report “ meadows extending down the steep hill from the mansion were designed by Church to frame the dramatic views of the Hudson River and Catskill Mountains to the SW and west. The views extend over five miles down the Hudson and over twenty miles to the Catskill Mountains. . Originally, views were also available to the west, north and northwest, and the

restoration of the designed landscape may once gain be open to those views” (DOS 1993,p. 122).

CO-4 Catskill Creek Subunit- Catskill/Olana Scenic Area of Statewide Significance
This unit consists of the Catskill and Cauterskill Creek corridors west of the Village of Catskill. The eastern boundary is the Village of Catskill and the western boundary extends upstream for 2 miles to the route 23 bridge and up $\frac{3}{4}$ mile for the Cauterskill Creek to the confluence with Catskill Creek. The Creek meanders through a narrow floodplain with wooded banks and shear cliffs that rise 250 feet above the rocky stream beds. The unit is in a relatively undisturbed state. According to the DOS SASS report views are quite short and narrow throughout the steep, wooded banks and winding creek beds. “ The views of the winding creeks, flood plains and the steep banks have a pleasing natural composition. From the tops of the creek banks there are partial views of the Catskill mountains to the west” (DOS 1993, p. 118).

HH-27 Dutchess Junction Subunit - Hudson Highlands Scenic Areas of Significance
This landscape unit is on the east side of the Hudson River south of the City of Beacon. The easterly boundary follows Route 9D north from benchmark 14 to Grandview Ave. The northern boundary is the shore lands of Denning Point to the Conrail tracks. The unit is approximately 3.5 miles long and between $\frac{1}{4}$ to 1 mile wide within the City of beacon and the Town of Fishkill. It contains flat to gently sloping shore lands of the Hudson River to gently rolling hillsides below the steep mountains of the Scofield and Breakneck Ridges. The vegetative cover is a mix of wetlands, woodlands, meadows and orchards. There is one large cove created by Penning Point, which is a rich estuary along the river. The banks of the Hudson River are undisturbed and NYS Route 9D Bear Mountain-Beacon Highway runs along the eastern boundary. There are several parcels of the Hudson Highlands State Park within the landscape unit. There are also scattered residences, a trailer park and the Dutchess Junction Hamlet center (DOS 1993, p. 465)

There are unobstructed views of the Hudson River and Fishkill Creek. Interior views are limited by vegetation and topography. Views of the Hudson River are low, wooded coastal shore lands, gently sloping uplands, Denning Point and the Hudson Highlands –notably North and South Beacon mountains, Sugarloaf Mountain and Breakneck Ridge. Focal points include Denning Point, Bannerman’s Castle on Pellepel Island and distant views of Newburgh-Beacon Bridge, Sugarloaf and Storm King Mountains (DOS 1993, p. 446)

HH-26 Hudson Highlands State Park Subunit- Hudson Highlands Scenic Areas of Significance

This landscape unit is south and east of the City of Beacon and stretches south to the villages of Cold Spring and Nebo hill. The eastern boundary is the coastal area and follows the ridgeline to Clove creek and interstate 84. The western boundary follows 9D north from Breakneck Ridge to the City of Beacon boundary. The steep wooded mountains reach an upward elevation of 1600 ft. and contain the highest peaks in the Hudson Highlands. These peaks include Sugarloaf Mountain, Bull Hill (Mt.

Taurus) South Beacon Mt. North Beacon Mt. Bald hill and Lambs Hill. There is a distinctive ridgeline and in places the mountains plunge down to the shore of the Hudson River and Fishkill Creek. The slopes are covered with a deciduous and conifer mix (DOS 1993, p. 461).

Views from the ridgeline and summits are extensive and include both peaks and shoreline areas. "There are long views up and down the Hudson River and to the east and west, to the City of Beacon below, to Bannerman's Castle and across to Storm King, The City of Newburgh, the Town of Cornwall and the Catskills. Views from the Hudson River are of Breakneck Ridge, the sandy beach and woody promontory of Little Stony Point and steeply rising woodlands" (DOS 1993, p. 467).

Esopus/Lloyd Scenic Area of Statewide Significance EL-1 Big Rock and Hemlock Point Subunit

This sub unit is the Northern Boundary of the SASS, which reaches to Riverview Cemetery on NY9W to the Hudson River and then south to Prospect Hill and is 1 to 2 miles in width. The area is dominated by steep wooded bluffs averaging 200 to 250 feet in elevation and with rolling upland behind the bluffs. The vegetation in mature woodland, open meadows, secondary scrub growth and landscaped lawns. The Hudson River shoreline at the foot of the bluffs features the Esopus Meadows, which are a large freshwater tidal flat. There is scattered residential development and converted summer camps throughout the area and several historic homes along River Road at the top of the bluffs. Hemlock Point is a Native American burial site.

There are full and unobstructed views of the Hudson River and the eastern back of the Estates District SASS" and the views are up to 20 miles long to the Northwest and Southeast to the historic Esopus Meadows lighthouse. The views to the west from the bluffs include the Catskill Mountains, which are a dramatic backdrop to the rolling woodlands and farmlands". (DOS, p. 3).

References

Appendix D. Visual Resources Analysis for Alternatives 1 and 2 North America Transmission New Scotland-Leeds-Pleasant Valley April 2015

Attachment 2-North American Transmission Additional Information to be Included in the Part A Materials to be Filed by Applicants for New Scotland - Leeds - Pleasant Valley Component March 2015.

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