INITIAL APPLICATION MATERIALS FOR NEW SCOTLAND TO LEEDS TO PLEASANT VALLEY COMPONENT

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1. INTRODUCTION

1.1 OVERVIEW

The New Scotland to Leeds to Pleasant Valley ("New Scotland-Leeds-Pleasant Valley") component of the Project consists of a new 345 kV single circuit overhead transmission line originating at the existing New Scotland substation in the Town of New Scotland, Albany County, approximately five (5) miles southwest of the City of Albany, and proceeding generally south, connecting to the existing Leeds Substation in the Town of Athens, Greene County. From Leeds Substation, the line proceeds generally south and connects to the existing Pleasant Valley Substation, located in the Town of Pleasant Valley, Dutchess County. The proposed line from New Scotland to Leeds is approximately 25 miles long; the proposed line from Leeds to Pleasant Valley is approximately 40 miles.

While the routing and siting of the New Scotland-Leeds-Pleasant Valley component of the Project will be determined in coordination with stakeholders and through an alternatives analysis during the subsequent Part B application process, the proposed route for New Scotland-Leeds-Pleasant Valley, which parallels existing transmission lines for over 85% of its length, is illustrated in Figure 2-1 below and is shown in detail in Exhibit 2. NAT estimates that New Scotland-Leeds-Pleasant Valley can be placed in service as early as 2017.

1.2 ORGANIZATION INFORMATION WITH RESPECT TO ARTICLE VII REQUIREMENTS

This Application contains the items required for an Initial (Part A) Application filing (or "Part A Application"), as defined by the Commission's Procedural Order.[1] The elements of this application are organized as specified in the Article VII Part A Template published by the Commission on September 19, 2013.[2]

1.3 SIS/SRIS STUDIES

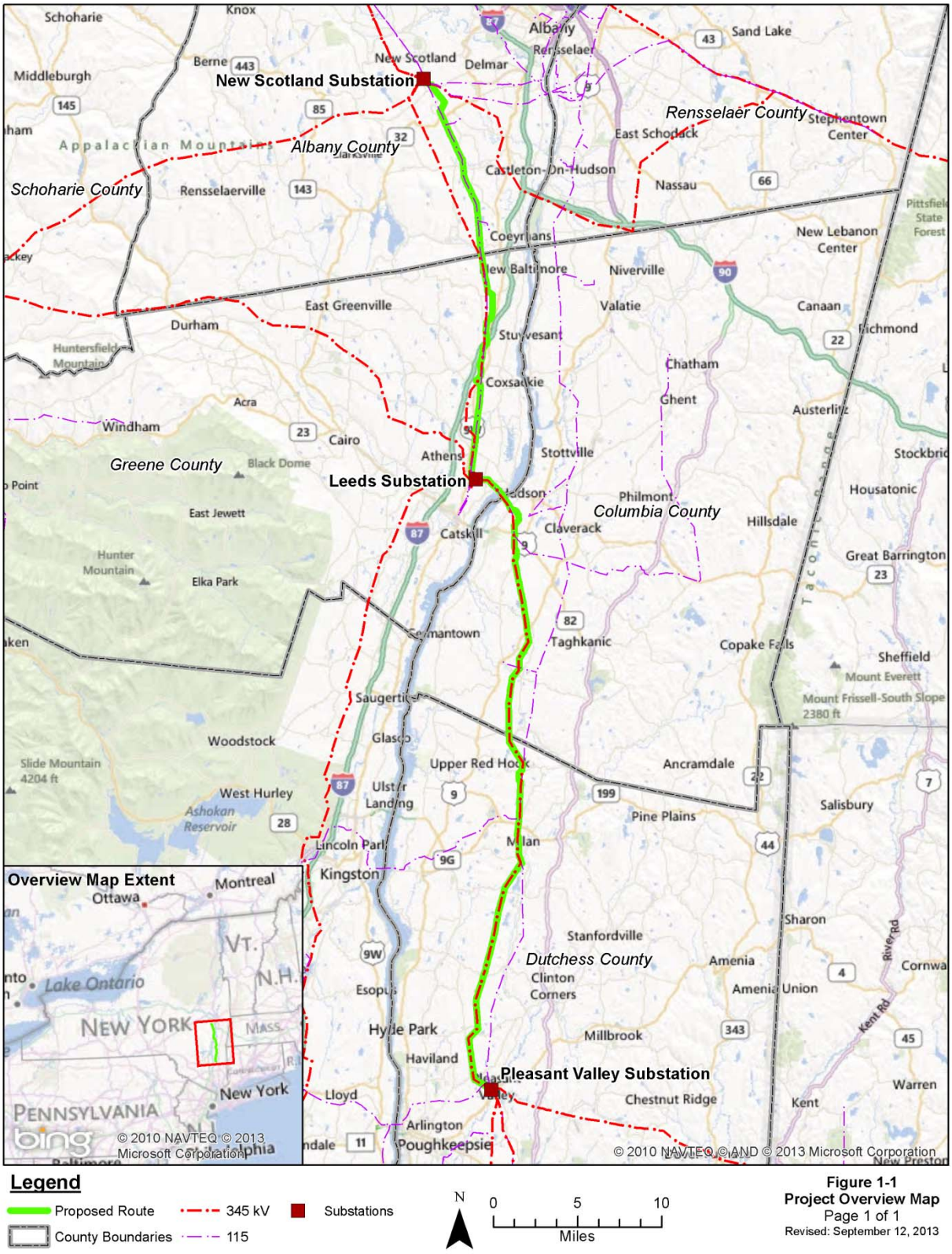
The New Scotland-Leeds-Pleasant Valley line was recently identified as a complimentary component of NAT's proposed Project in achieving incremental transfer capability between the upstate New York and Southeast New York (UPNY-SENY) regions and Central-East regions and is currently in the Feasibility Study phase with the New York Independent System Operator ("NYISO"). New Scotland-Leeds-Pleasant Valley is expected to move to the System Reliability Impact Study ("SRIS") phase in November 2013. Since the SRIS study

[1] New York State Public Service Commission, Case 12-T-0502, Proceeding on Motion of the Commission to Examine Alternating Current Transmission Upgrades, *Order Establishing Procedures for Joint Review Under Article VII of the Public Service Law and Approving Rule Changes*, April 22, 2013.

[2] Public Service Commission Case No. 12-T-0502, Proceeding on Motion of the Commission to Examine Alternating Current Transmission Upgrades, *Order Adopting Additional Procedures and Rule Changes for Review of Multiple Projects Under Article VII of the Public Service Law*, Appendix A, September 19, 2013.

scope has not yet been accepted and work is not yet underway pursuant to a Study Agreement with the NYISO, NAT is submitting, contemporaneously with this submission, a motion requesting a waiver from the SRIS study requirement set forth in the Procedural Order. That motion for waiver request is provided in Appendix C to the Initial (Part A) Application materials, which are common to both the New Scotland-Leeds-Pleasant Valley component and the Edic-Fraser component.

FIGURE 2-1. NEW SCOTLAND-LEEDS-PLEASANT VALLEY OVERVIEW MAP



2. DESCRIPTION OF THE NEW SCOTLAND-LEEDS-PLEASANT VALLEY COMPONENT (§85-2.8)

2.1 DESCRIPTION OF THE FACILITY (§ 85-2.8(a))

This section provides (1) a description of the New Scotland-Leeds-Pleasant Valley 345 kV overhead AC transmission component of the proposed Project, (2) a statement of the location of the proposed location for the New Scotland-Leeds-Pleasant Valley component, (3) a statement of the need for the proposed New Scotland-Leeds-Pleasant Valley component, (4) a statement regarding the compatibility of the New Scotland-Leeds-Pleasant Valley proposed facilities, (5) a statement regarding the operating effects of the proposed New Scotland-Leeds-Pleasant Valley component and (6) the anticipated schedule for project development as required by 16 NYCRR § 85-2.8, as modified by the Procedural Order.

2.2 FACILITIES DESCRIPTION

The New Scotland-Leeds-Pleasant Valley component is comprised of the addition of a new 345 kV overhead transmission line along with modifications to the existing New Scotland Substation, Leeds Substation, and Pleasant Valley Substation. These items are described in detail in the following subsections. Design drawings for select Project components are included in Exhibit 5 of this submittal.

2.2.1 INTERCONNECTION AND SUBSTATION MODIFICATIONS

New Scotland-Leeds-Pleasant Valley will connect the Niagara Mohawk Power Corporation d/b/a National Grid-owned New Scotland 345 kV Substation, located in Albany County, to the National Grid-owned Leeds 345 kV Substation, located in Greene County to the Consolidated Edison, Inc.-owned Pleasant Valley 345 kV Substation located in Dutchess County.

The New Scotland-Leeds-Pleasant Valley component will consist of approximately 65 miles of 2-1590 ACSR ”Falcon” bundled conductor with Normal and Emergency Ratings of 1788/2074 MVA, respectively.

The Point of Interconnection (POI) at the New Scotland Substation requires that a new breaker and a half configuration be installed. The POIs at the Leeds Substation requires the expansion of the current station to accommodate two new bays. The POI at the Pleasant Valley Substation requires the expansion of the current station to accommodate a new bay. It is expected that the proposed equipment installations will not require an expansion of the existing footprints of the interconnection stations.

2.2.2 TRANSMISSION LINE

NAT has performed preliminary review of design options for the New Scotland-Leeds-Pleasant Valley 345 kV transmission line and has determined that a "Delta" monopole configuration would be appropriate for New Scotland-Leeds-Pleasant Valley. The foundations will typically be a combination of steel and concrete reinforced foundations for the tangent monopoles, the angle and deadend structures. NAT proposes an approach to structure design that allows for easy modifications to the structures and foundations that allows for deployment in most any type of soil conditions and provides for very efficient installation methods.

NAT intends to perform a Transmission Line Structure and Foundation Type Selection Study to validate the initial assumptions. The results of this study will be incorporated into the final line design and updated in NAT's Part B Application.

NAT proposes New Scotland-Leeds-Pleasant Valley to be constructed as a monopole configuration, but recognizes the Commission may see benefits in designing and constructing the Project to include a double-circuit capable tower, with only one circuit initially installed. NAT would be willing to do so if directed by the Commission.

2.2.2.1 DESIGN VOLTAGE AND VOLTAGE OF INITIAL OPERATION

New Scotland-Leeds-Pleasant Valley is designed to operate at a nominal system voltage of 345 kV, alternating current ("AC"). The voltage of initial operation will be 345 kV.

2.2.2.2 TYPE, SIZE, NUMBER, AND MATERIALS OF CONDUCTORS

The proposed conductor type for New Scotland-Leeds-Pleasant Valley is 1590 kcmil 54/19 ACSR "Falcon" conductor. New Scotland-Leeds-Pleasant Valley is designed for a two conductor bundle per phase for the entire circuit. Special consideration will be given to the conductor design for the long span crossings of rivers, streams, ponds or other geographic features.

The aerial shield wire on New Scotland-Leeds-Pleasant Valley will be a DNO-8696 or equivalent Optical Ground Wire ("OPGW") that will provide line shielding as well as a communication path between the substation communication facilities.

2.2.2.3 INSULATOR DESIGN

Insulator design for New Scotland-Leeds-Pleasant Valley will be suspension type, polymer insulator with ball and wye-clevis connections. In all suspension applications, regardless of structure type, insulators will consist of either a single polymer insulator in an I-String configuration or two polymer insulators configured in a V-string formation. Dead-end and angle structures will utilize two polymer insulators configured in a parallel formation placed in a strain condition with associated dead-ending hardware. Where required, vertical polymer jumper post insulators will be utilized to provide proper clearance to grounded portions of the structures and to restrict jumper loop movement due to wind loading.

2.2.2.4 LENGTH OF TRANSMISSION LINE

The length of the proposed route totals approximately 65 miles in length. The Scoping and Schedule section details further routing analysis to take place prior to the filing of Part B of the application.

2.3 LOCATION OF PROPOSED SITE OR RIGHT-OF-WAY (§85-2.8(b))

The Pleasant Valley Project component, which parallels existing transmission lines for over 85% of its length, is illustrated in Figure 2-1 above and is shown in detail in the map sets included in Exhibit 2.

The proposed right-of-way (ROW) is generally expected to be 100 to 160 feet wide and originates at the existing New Scotland substation in the Town of New Scotland, Albany County, approximately five (5) miles southwest of the City of Albany, and proceeding generally south, connecting to the existing Leeds Substation in the Town of Athens, Columbia County. From Leeds Substation, the line proceeds generally south, crosses the Hudson River, and connects to the existing Pleasant Valley Substation, located in the Town of Pleasant Valley, Dutchess County. The proposed alignment from New Scotland to Leeds is approximately 25 miles long; the proposed alignment from Leeds to Pleasant Valley is approximately 40 miles. The exact width of the ROW will be determined after the electromagnetic field (EMF) studies are completed and detailed structure design and placement have been performed. Given that the route largely parallels existing transmission lines, this may provide an opportunity to reduce the ROW width necessary.

In developing the proposed ROW route, NAT's objective was to parallel existing ROWs to the maximum extent practicable, while minimizing impacts on wetlands and streams and proximity to schools, churches, airports and residences.

2.4 NEED FOR PROPOSED NEW SCOTLAND-LEEDS-PLEASANT VALLEY FACILITIES (§85-2.8(d))

The New Scotland-Leeds-Pleasant Valley transmission line will serve to increase transmission capability between upstate New York and downstate New York, and thereby address one of the key recommendations of the New York Energy Highway Blueprint (or the "Blueprint"). The new 345 kV line will relieve well-established energy transfer limitations on the NY electric transmission system and ensure efficient transmission of clean renewable energy from upstate NY to consumers in downstate NY. NAT's proposed Project (which includes the New Scotland-Leeds-Pleasant Valley transmission line as one component) will provide an incremental transmission capability of at least 1,000 MW on the UPNY-SENY interface as well as a significant increase in the energy transfer capability on the Central-East interface. The proposed 345 kV transmission upgrades, including the proposed New Scotland-Leeds-Pleasant Valley facilities, will lead to significant congestion relief for downstate energy consumers, enhance efficient working of the NY electricity market by connecting lower-cost sources of energy with loads and improve system reliability state-wide.

2.5 COMPATIBILITY OF PROPOSED FACILITY WITH GOALS AND BENEFITS TO RATEPAYERS IDENTIFIED IN THE BLUEPRINT (PROCEDURAL ORDER, APPENDIX B AT 3)

The proposed New Scotland-Leeds-Pleasant Valley component is consistent with the goals set forth in the Blueprint and would bring significant benefits to ratepayers. This subsection details the compatibility of the proposed Project with the goals and benefits to ratepayers identified in the Blueprint.

2.5.1 CONGESTION RELIEF

> NAT's New Scotland – Leeds – Pleasant Valley line will provide tremendous congestion relief benefit across the Leeds – Pleasant Valley and Central East transmission paths, identified by the NYISO as the most constrained in NYCA as part of the Congestion Assessment and Resource Integration Study ("CARIS"). An assessment of congestions costs in the future years completed as part of 2013 CARIS Phase 1 Study, shows that the Central East transmission path will continue to be congested with the Demand$ Congestion increasing for each of the study years through 2022. Together, the Leeds Pleasant Valley and the Central East continue to be most congested transmission paths in NYCA in the future years as indicated by the latest 2013 CARIS. From 2008 through 2012, these two paths have shown a cumulative Demand$ Congestion[3] of $2.75 billion and $1.35 billion.[4]

[3] "Demand$ Congestion is the measure of the congestion component of Locational Based Marginal Price (LBMP) and its impact on NYCA load. It represents the cost of congestion to consumers." 2013 CARIS Phase 1 draft report, p. 14

[4] Ibid, p. 47.

The NYISO CARIS identified that a 345 kV transmission line between New Scotland and Pleasant Valley 345 kV substations will completely eliminate Demand$ Congestion along the highly congested Leeds Pleasant valley transmission path.[5] NAT's New Scotland – Leeds – Pleasant Valley will provide very similar results as the New Scotland – Pleasant Valley 345 kV line solution studied by the NYISO during 2013 CARIS. The NAT proposed line should completely eliminate congestion along the New Scotland – Pleasant Valley transmission path as well provide a significant reduction in the Demand$ Congestion along the Central East transmission path. Elimination of congestion along the New Scotland – Pleasant Valley transmission corridor will allow downstate loads to better access the upstate generation and economic imports of cheaper energy from outside the NYCA.

NAT's New Scotland – Leeds – Pleasant Valley 345 kV line will also provide incremental savings across additional cost metrics which will lead to direct cost savings for electric energy consumers on NYCA. These metrics include Load Payments, Export Payments, Transmission Congestion Cost Payments, and Losses Costs[6].

New Scotland-Pleasant Valley will provide greater benefits in conjunction with the Edic-Fraser transmission line. The cumulative impact of the Project, along with portfolios in combination with elements of other proposals (such as TOTS) should be evaluated in the comparative evaluation on the common record.

2.5.2 ENHANCED SYSTEM RELIABILITY

NAT's proposed Project is comprised of the New Scotland-Leeds-Pleasant Valley transmission line and the Edic-Fraser transmission line described separately in this Initial (Part A) Application. NAT's Project will integrate directly into the backbone 345 kV transmission system in New York State and significantly enhance the goal of long-term electric system reliability, a high-priority goal identified in the Blueprint. The NAT Project will provide significant increases in the power transfer capability of at least three major interfaces in New York, namely UPNY-SENY, Central-East, and Total-East. UPNY-SENY and Central-East have been identified by the NYISO as the most congested interfaces in New York State. The NAT proposed Project will add a combination of new transmission lines totaling over 1,000 MW of transmission capacity under normal operating conditions. NAT's Project will provide the following additional reliability benefits to New York's electric transmission system:

[5] Ibid, p. 59.

[6] 2013 CARIS Phase 1 draft report, p. 64

(1) Mitigate any reliability based shortcoming which may prevent increased energy transfers to downstate New York loads due changes on transmission topology or generation profile in the state.

(2) An incremental transfer capability of at least 1 gigaWatt ("GW") on the UPNY-SENY interface and a significant increase in transfer capability of Central-East and Total-East interfaces. This increase in transfer limit of critical interfaces will lead to more reliable and flexible operation of the New York State electric transmission system during normal and contingency conditions. Electric system operators will be able to reliably operate the New York State electric system during extreme events such as unusual weather conditions, fuel shortages, or multiple generation and transmission outages. Increase in transmission capability will also provide economic benefit by reducing service curtailments and other possible high-cost outcomes during extreme system conditions.

(3) Increased transmission capacity, provided by NAT's Project, across major interfaces will reduce the need for local reserve margins in pockets of New York transmission system, thereby providing enhanced reliability in cases where energy imports are constrained and energy reserve margins are depleting due to changing system conditions.

(4) Increased transmission capacity will also provide electric transmission planners the ability to plan for generation retirements well in advance of such events and without opting for expensive contingency plans like Reliability Must Run ("RMR") contracts and other ancillary service payments.

The increased reliability of the New York electric system will provide economic development benefits by improving operations of existing commercial and industrial customers as well attracting new customers to New York.

2.5.3 FLEXIBILITY

NAT is proposing a 345 kV AC transmission Project to accomplish the goals of the Blueprint. NAT's Project will provide a robust transmission link between upstate New York, where clean and renewable energy has most potential, to downstate New York, where the largest demand for this energy resource lies. Since all the proposed lines will operate at 345 kV, the Project will seamlessly integrate with the backbone 345 kV transmission network in New York State. Below are some of the benefits that NAT's Project will deliver to enhance the flexibility of the New York Control Area (NYCA) electric transmission system:

1. In addition to significant congestion relief, NAT's proposed Project of AC transmission lines will boost flexibility for New York State to plan for the entry and exit of generation and transmission.

2. The AC option will allow easier interconnection of renewable and conventional generation anywhere along the length of the proposed lines as well as more flexible dispatch of existing upstate generation.
3. NAT's proposed expansion of the AC transmission system in New York will allow New York State to better address future generation retirements.
4. Expansion of the AC transmission system will allow better flexibility to remove other older elements from operations for reconductoring or reconditioning.
5. Expansion of the AC system will also allow for the better management of the statewide electric grid during contingency conditions when other elements of the transmission grid may be out of service. Response time to emergencies is also expected to be lower in the case of AC transmission systems.
6. NAT's Project is proposed to be built on independent structures, providing New York electric grid operators maximum flexibility to operate these lines for maintenance during scheduled and unscheduled outage periods. The support structures used will be monopole steel structures, and if directed by the Commission, the lines will be designed and constructed for future double circuit capability. This will provide the opportunity to further increase transmission capacity between upstate and downstate New York at low cost with only minimal additional public or environmental impact.

During construction, NAT proposes to build its Project in a phased manner. To provide maximum flexibility for system-wide benefit, NAT will work with the NYISO and where possible, components of the NAT Project (including the New Scotland-Leeds-Pleasant Valley component) will be energized as they complete construction. This phased approach to construction and energization will enable the NAT Project to provide increased capacity and energy deliverability earlier in the program life-cycle, compared to energizing all the components of the Project after the entire Project has been constructed.

2.5.4 EFFICIENCY

The proposed NAT Project will lead to significant production cost savings by replacing more expensive energy produced by generators located in downstate New York with cheaper, renewable, and more abundant sources of energy in upstate New York.

The NAT Project will enable reduced operation of less efficient, higher heat rate generation in the State in favor of higher efficiency generating units. This will also lead to significant savings in the payments made by New York State customers for the electric energy they use due to the increased access to more efficient and cheaper sources of energy in upstate NY. NAT's proposed transmission lines will also decrease the impedance on the critical New York transmission paths due to the addition of new transmission lines. This expected to reduce the overall system losses by over 66 MW, thereby reducing fuel consumption and associated air

emissions, particularly oxides of nitrogen (NOX), particulate matter, and carbon dioxide (CO2).

2.5.5 REDUCED ENVIRONMENTAL IMPACT: GHG AND REGIONAL AIR POLLUTION AND EMISSION REDUCTIONS

One goal of the AC transmission upgrade initiative under the Blueprint is to reduce environmental impacts by relieving congestion and allowing a more efficient portfolio of generating resources, including renewables from upstate New York, to serve downstate areas. These principles are explained in the Blueprint as follows:

> "Congestion can have adverse environmental and economic consequences when older plants in urban areas run more frequently than they otherwise would if power from other sources of energy could reach these areas. The Energy Highway Blueprint addresses the challenges of a congested transmission system by calling for the upgrade of existing lines and the building of new lines following existing rights-of-way."[7]

> "These targeted upgrades of the AC transmission system can strengthen the statewide power grid and provide significant reductions in nitrogen oxide (NOX) and particulate matter emissions in the downstate region. The reduction of those emissions are particularly important because the downstate region is designated nonattainment for the federal air quality standard for ozone, and NOX emissions contribute to those elevated ozone levels."[8]

These goals are also reflected in the Procedural Order, where the Commission stated the following with regards to the expected environmental benefits of the AC transmission upgrades:

> "As we identified in undertaking this effort, upgrading this section of the transmission system has the potential to bring a number of benefits to New York's ratepayers. These include the near-term benefits of enhanced system reliability, flexibility, and efficiency, reduced environmental and health impacts through reduced downstate emissions…"[9]

[7] New York Energy Highway Task Force, *New York Energy Highway Blueprint*, p. 38, October 22, 2012, http://www.nyenergyhighway.com/PDFs/BluePrint/EHBPPT/ (accessed August 20, 2013).

[8] Ibid., pp. 41-42.

[9] New York State Public Service Commission, Case 12-T-0502, Proceeding on Motion of the Commission to Examine Alternating Current Transmission Upgrades, *Order Establishing Procedures for Joint Review Under Article VII of the Public Service Law and Approving Rule Changes*, pp. 1-2, April 22, 2013.

The following subsections describe the greenhouse gas (GHG) and regional air pollution emission reductions expected to occur as a result of implementation of NAT's Project of AC transmission upgrades.

2.5.5.1 GHG EMISSION REDUCTION

As described in the Blueprint and Procedural Order, it is expected that the congestion relief provided by NAT's Project of transmission upgrades will allow for reduced operation of older power plants in urban (e.g., downstate) areas, and reduced downstate emissions. The result would be lower overall emissions of GHG to the atmosphere.

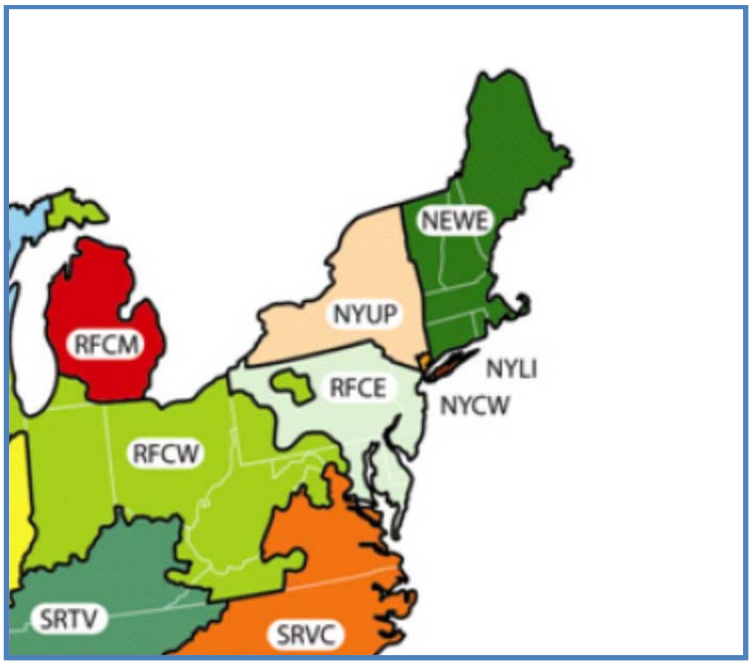
These reductions in greenhouse gases would be expected due to the lower GHG emission rates associated with upstate generating resources, when compared with those in downstate areas. To illustrate this point, Table 2-1 and Figure 2-1 below compare the carbon dioxide ("CO2", the primary greenhouse gas) emission rates between upstate and downstate areas, based on information available from the U.S. EPA's Emissions & Generation Resource Integrated Database (eGRID).

TABLE 2-1. CO2 EMISSION RATE COMPARISON FOR NEW YORK REGIONS

eGrid Sub-Region	Upstate/Downstate	CO2 Emission Rate (pounds/MW-hour)
NPUP Upstate NY	Upstate	721
NPCW NYC/Westchester	Downstate	815
NPLI Long Island	Downstate	1,537

Source: U.S. EPA, Emissions & Generation Resource Integrated Database (eGRID), http://cfpub.epa.gov/egridweb/ghg.cfm, accessed September 16, 2013.

FIGURE 2-1. EPA EGRID MAP – NORTHEAST UNITES STATES



Source: U.S. EPA, Emissions & Generation Resource Integrated Database (eGRID), http://cfpub.epa.gov/egridweb/ghg.cfm, accessed September 16, 2013.

As shown in Table 2-1, based on the U.S. EPA eGRID data, CO2 emission rates in upstate New York are significantly lower than those in downstate areas, ranging from approximately 12% lower to 53% lower, depending on the downstate sub-region evaluated. Consequently, it is anticipated that the Project will achieve significant GHG emission reductions by relieving congestion between upstate and downstate areas. The degree of anticipated reductions for the proposed Project will be estimated in the Part B application based on power flow, dispatch, and emissions predictions contained in the final SRIS study results.

2.5.5.2 REGIONAL AIR POLLUTION AND EMISSION REDUCTION: HEALTH BENEFITS

As described in the Blueprint, health benefits are expected to result from decreased emissions of NOX and particulate matter and decreased formation of ground-level ozone caused by NOX emissions reductions. The potential health benefits of such emissions reductions are listed in Table 2-2, based on information from U.S. EPA.

TABLE 2-2. POTENTIAL HEALTH BENEFITS OF EMISSION REDUCTIONS

Pollutant	Potential Health Benefits: Anticipated Reduced Incidence of Symptoms Due to Lower Ambient Pollutant Concentrations
NOX [1]	Airway inflammation in healthy people, increased respiratory symptoms in people with asthma, increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma.
Particulate Matter [2]	Premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing
Ozone [3]	Chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground level ozone also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue.

Notes:

(1) U.S. EPA, Nitrogen Dioxide Health, http://www.epa.gov/airquality/nitrogenoxides/health.html, accessed September 16, 2013.

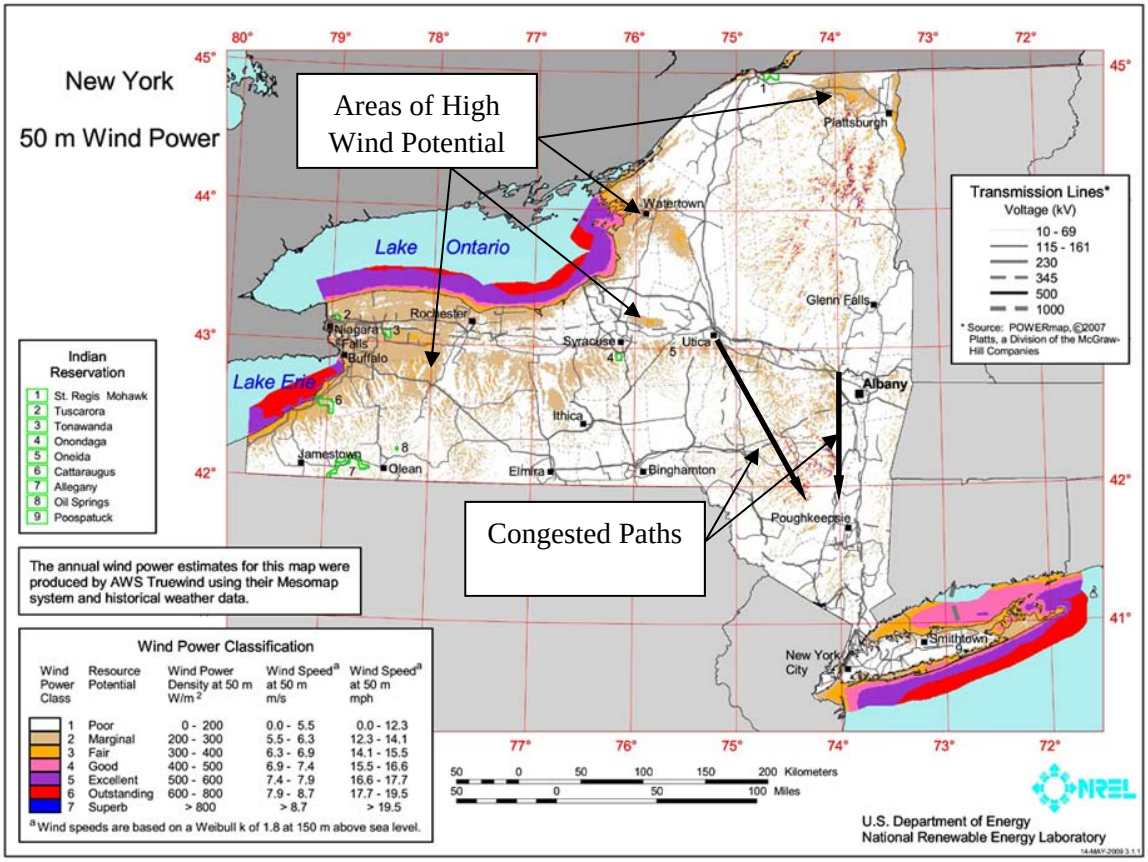
(2) U.S. EPA, Particulate Matter (PM) Health, http://www.epa.gov/airquality/particlepollution/health.html, accessed September 16, 2013.

(3) U.S. EPA, Ground Level Ozone, http://www.epa.gov/glo/index.html, accessed September 16, 2013.

As shown in Table 2-2, a variety of respiratory health benefits would be expected to result from reductions in ambient concentrations of NOX, particulate matter, and ozone. Projects that result in lower ambient concentrations of these pollutants (e.g., the AC transmission upgrades) would therefore be expected to contribute to the health benefits listed above. The degree of NOX and particulate matter emissions reductions associated with the proposed Project will be estimated in the Part B application based on power flow, dispatch, and emissions predictions contained in the final SRIS study results.

2.5.6 INCREASED DIVERSITY IN SUPPLY

The congestion on the existing transmission system identified in the Blueprint does not just translate into higher costs for current ratepayers, it also limits the dispatch of new resources within New York State, particularly wind energy. The map below identifies the wind energy potential in New York, and it can be seen that the areas of highest land-based wind potential match very closely with the areas of existing generation excess. Therefore the congestion relief from the Project and its components can also help diversify the generation supply in New York State through the delivery of more wind energy, once new wind generation is efficiently interconnected to the grid.



2.5.7 LONG-TERM BENEFITS

The Project is expected to bring significant long-term benefits, including, but not limited to, job growth; development of efficient new generating resources at lower cost in upstate areas; and mitigation of reliability problems that may arise with expected generator retirements. Per the Procedural Order, those benefits are detailed in the subsections below.

2.5.7.1 JOB GROWTH

The Project and its related congestion relief and incremental transmission capacity can lead to job growth in several different ways. There are direct and indirect construction impacts from the Project. There could also be direct and indirect construction impacts from generation capacity which would benefit from the Project, including existing generation capacity employment that could be preserved and future employment associated with construction and operation of new

generation. Finally, there is the opportunity for increased employment indirectly due to the lower costs to businesses in New York State through congestion relief, and the associated economic development impact. NAT has only attempted to quantify the job growth impacts related to the construction activities for the project.

While an economic impact study for New-Scotland-Leeds-Pleasant Valley has not yet been completed, an Economic Impact Study for the Edic-Fraser Project component was completed by Appleseed, included as Attachment A to the Scoping Statement and Schedule for the Edic-Fraser Component, submitted herewith. Assuming that job growth is approximately proportional to total capital investment associated with the transmission line (refer to Exhibit 9 information for each Project component for estimated capital costs), the anticipated job growth associated with New-Scotland-Leeds-Pleasant Valley would be approximately 510 person-years of employment.

2.5.7.2 DEVELOPMENT OF EFFICIENT NEW GENERATING RESOURCES AT LOWER COST IN UPSTATE AREAS

It is widely recognized that most costs are higher in the New York Metropolitan Statistical Area, recognized in various cost indexes. The NYISO recognizes this effect in the Cost of New Entry (CONE), which indicates the estimated cost of new construction for new generation resources. The NYISO defined CONE in New York City and Long Island is $247 per kW per year and $197 per kW per year and the CONE for upstate areas of NY State is $111 per kW per year.[10] However, transmission capacity limits the ability to site new lower-cost generation resources in upstate areas. New transmission capacity can enable this generation, which would create a cost savings. Ratepayers in all zones of New York State would benefit from the addition of new, relatively low cost capacity. However, calculating this cost savings is complex.

A simple back-of-the-envelope calculation would be that if a new generation resource could be constructed in upstate areas at a lower cost, the savings would be at least $86 per kW per year, or $86 million per year for a 1,000 MW generator. NAT's proposed Project will foster such savings by facilitating development of lower cost generation in Upstate NY, the benefits of which can be passed on to load customers across all load zones in NY.

[10] 2012 NYISO State of the Market Report

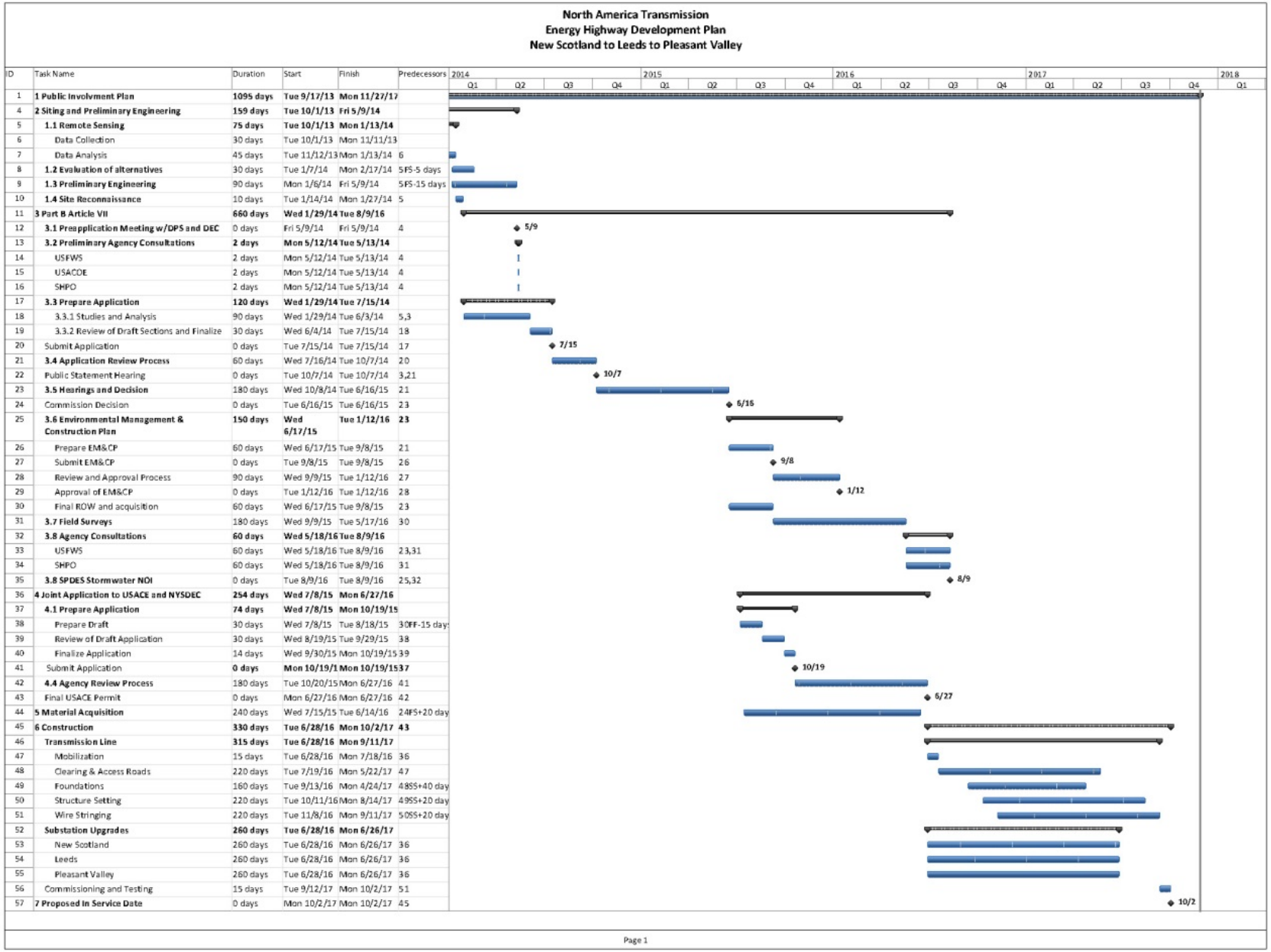
2.5.7.3 MITIGATION OF RELIABILITY PROBLEMS THAT MAY ARISE WITH EXPECTED GENERATOR RETIREMENTS

Electricity generation capacity and electricity demand in New York State is out of balance. Approximately 2/3 of the electricity demand is in Zones G-K but approximately ½ of the electricity supply is in Zones A-F. While the current transmission system has been designed to account for this relative imbalance, there is still significant congestion in the state due to this relative imbalance. This imbalance would be made much worse with potential generation retirements in Zones G-K. NAT's proposed Project will reinforce the NY State transmission system by providing a strong transmission link between downstate NY load centers and upstate NY. The thermal and voltage transfer capability across major NYCA interfaces, that NAT's Project will increase, will mitigate reliability related problems that may develop due to potential generator retirements. A stronger NY transmission system will also facilitate generator retirements without compromising reliability due to its ability to supply energy from geographically diverse generators into load pockets where generators may retire over the future years. A strong transmission system may also foster additional imports of energy from neighboring areas which will be able to replace energy produced by retiring generators and mitigate reliability shortcomings that may develop due to such retirements.

2.6 DEVELOPMENT SCHEDULE (PROCEDURAL ORDER, APPENDIX B AT 3)

Planned development activities include the Article VII process, public outreach, federal permitting, and construction. The anticipated development schedule is shown in **Figure 2-2** below.

Figure 2-2. Development Schedule



ID	Task Name	Duration	Start	Finish	Predecessors
1	**1 Public Involvment Plan**	**1095 days**	**Tue 9/17/13**	**Mon 11/27/17**	
4	**2 Siting and Preliminary Engineering**	**159 days**	**Tue 10/1/13**	**Fri 5/9/14**	
5	**1.1 Remote Sensing**	**75 days**	**Tue 10/1/13**	**Mon 1/13/14**	
6	Data Collection	30 days	Tue 10/1/13	Mon 11/11/13	
7	Data Analysis	45 days	Tue 11/12/13	Mon 1/13/14	6
8	**1.2 Evaluation of alternatives**	30 days	Tue 1/7/14	Mon 2/17/14	5FS-5 days
9	**1.3 Preliminary Engineering**	90 days	Mon 1/6/14	Fri 5/9/14	5FS-15 days
10	**1.4 Site Reconnaissance**	10 days	Tue 1/14/14	Mon 1/27/14	5
11	**3 Part B Article VII**	**660 days**	**Wed 1/29/14**	**Tue 8/9/16**	
12	**3.1 Preapplication Meeting w/DPS and DEC**	0 days	Fri 5/9/14	Fri 5/9/14	4
13	**3.2 Preliminary Agency Consultations**	**2 days**	**Mon 5/12/14**	**Tue 5/13/14**	
14	USFWS	2 days	Mon 5/12/14	Tue 5/13/14	4
15	USACOE	2 days	Mon 5/12/14	Tue 5/13/14	4
16	SHPO	2 days	Mon 5/12/14	Tue 5/13/14	4
17	**3.3 Prepare Application**	**120 days**	**Wed 1/29/14**	**Tue 7/15/14**	
18	3.3.1 Studies and Analysis	90 days	Wed 1/29/14	Tue 6/3/14	5,3
19	3.3.2 Review of Draft Sections and Finalize	30 days	Wed 6/4/14	Tue 7/15/14	18
20	Submit Application	0 days	Tue 7/15/14	Tue 7/15/14	17
21	**3.4 Application Review Process**	60 days	Wed 7/16/14	Tue 10/7/14	20
22	Public Statement Hearing	0 days	Tue 10/7/14	Tue 10/7/14	3,21
23	**3.5 Hearings and Decision**	180 days	Wed 10/8/14	Tue 6/16/15	21
24	Commission Decision	0 days	Tue 6/16/15	Tue 6/16/15	23
25	**3.6 Environmental Management & Construction Plan**	**150 days**	**Wed 6/17/15**	**Tue 1/12/16**	**23**
26	Prepare EM&CP	60 days	Wed 6/17/15	Tue 9/8/15	21
27	Submit EM&CP	0 days	Tue 9/8/15	Tue 9/8/15	26
28	Review and Approval Process	90 days	Wed 9/9/15	Tue 1/12/16	27
29	Approval of EM&CP	0 days	Tue 1/12/16	Tue 1/12/16	28
30	Final ROW and acquisition	60 days	Wed 6/17/15	Tue 9/8/15	23
31	**3.7 Field Surveys**	180 days	Wed 9/9/15	Tue 5/17/16	30
32	**3.8 Agency Consultations**	**60 days**	**Wed 5/18/16**	**Tue 8/9/16**	
33	USFWS	60 days	Wed 5/18/16	Tue 8/9/16	23,31
34	SHPO	60 days	Wed 5/18/16	Tue 8/9/16	31
35	**3.8 SPDES Stormwater NOI**	0 days	Tue 8/9/16	Tue 8/9/16	25,32
36	**4 Joint Application to USACE and NYSDEC**	**254 days**	**Wed 7/8/15**	**Mon 6/27/16**	
37	**4.1 Prepare Application**	**74 days**	**Wed 7/8/15**	**Mon 10/19/15**	
38	Prepare Draft	30 days	Wed 7/8/15	Tue 8/18/15	30FF-15 days
39	Review of Draft Application	30 days	Wed 8/19/15	Tue 9/29/15	38
40	Finalize Application	14 days	Wed 9/30/15	Mon 10/19/15	39
41	Submit Application	**0 days**	**Mon 10/19/1**	**Mon 10/19/15**	**37**
42	**4.4 Agency Review Process**	180 days	Tue 10/20/15	Mon 6/27/16	41
43	Final USACE Permit	0 days	Mon 6/27/16	Mon 6/27/16	42
44	**5 Material Acquisition**	240 days	Wed 7/15/15	Tue 6/14/16	24FS+20 days
45	**6 Construction**	**330 days**	**Tue 6/28/16**	**Mon 10/2/17**	**43**
46	**Transmission Line**	**315 days**	**Tue 6/28/16**	**Mon 9/11/17**	
47	Mobilization	15 days	Tue 6/28/16	Mon 7/18/16	36
48	Clearing & Access Roads	220 days	Tue 7/19/16	Mon 5/22/17	47
49	Foundations	160 days	Tue 9/13/16	Mon 4/24/17	48SS+40 days
50	Structure Setting	220 days	Tue 10/11/16	Mon 8/14/17	49SS+20 days
51	Wire Stringing	220 days	Tue 11/8/16	Mon 9/11/17	50SS+20 days
52	**Substation Upgrades**	**260 days**	**Tue 6/28/16**	**Mon 6/26/17**	
53	New Scotland	260 days	Tue 6/28/16	Mon 6/26/17	36
54	Leeds	260 days	Tue 6/28/16	Mon 6/26/17	36
55	Pleasant Valley	260 days	Tue 6/28/16	Mon 6/26/17	36
56	Commissioning and Testing	15 days	Tue 9/12/17	Mon 10/2/17	51
57	**7 Proposed In Service Date**	0 days	Mon 10/2/17	Mon 10/2/17	45