Public Policy Transmission Planning Process Manual Attachments

Attachment C

Data Submission for Public Policy Transmission Projects

Issued: ~~06/08/2020~~[date]

DRAFT – For Discussion Purposes Only

New York ISO

Issued: ~~June 8, 2020~~[date]

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(Completed proposal should be sent to PublicPolicyPlanningMailbox@nyiso.com)

(Instructions)

(Remove any lines or items within parentheses that do not apply)

[Insert information within bracketed areas and remove brackets]

[X]	HV AC Transmission Project	**[X]**	Substation Project (115 kV or greater)
[X]	HVDC Transmission Project	**[X]**	FACTS
[X]	Underground Transmission Project	**[X]**	Underwater/Sea Project

(Check all that apply)

[Insert Title of Project]

(Title should be short and formatted as follows:)

(Transmission project description format, delete if not applicable)

[xx kV] – [Substation to Substation];[xx miles]*(lineal length of project)***, [Type of project]** *(Overhead, Underground, HVDC, ROW for new Transmission Line, Rebuild, Thermal Up-Rate, Relocation, etc)*

(Substation project description format, delete if not applicable)

[xx kV] – [Substation Name];[Project Location]*(Name of closest city, Township, County, State, ZIP)***, [Type of project]** *(New Substation, Transformer Replacement or kV Change, Conversion to Ring Bus, Phase Shifter, FACTS, SVC, Reactive Compensation, etc.)*

Submitted in response to NYISO Solicitation for (insert Public Policy Transmission Need being addressed)

Date: [xx/xx/xx] *(date submitted to NYISO)*

Proposal Made By: [name of Developer/company]
[street address of company]
[city, state, zip]
Contact Person: [name, title]
[phone #] Office [phone #] Cell
[email address]

Technical Contacts

Project Manager: [name, office phone, cell phone, email]
(person responsible for schedule and budget tracking)

Project Engineer: [name, office phone, cell phone, email]
(person responsible for technical information)

Developer Qualifications Update – as necessary, including updated qualification information for contractors, subcontractors, consultants

Project Location

Project Zone(s): *(NYISO regional area location)*

Project County(ies):

Project State (if connecting outside NY):

(*Select from the following three sentences, delete the sentences that do not apply*)

This project will require that [Project Developer] file an Article VII application with the New York State Public Service Commission (PSC).

This project will require a 16 NYCRR Part 102 application with PSC.

No PSC filing is required for this project. Local Permits will be obtained.

NYISO Queue # [if any] Date Filed (or planned filing date):_____

Feasibility Study: [X] Completed Date Completed: _____
[X] Not Completed Expected Date: _____
[X] Not Applicable

System Impact Study (SIS or SRIS ~~or SIS~~):
[X] Completed Date Completed: _____
[X] Not Completed Expected Date: _____

~~Facility~~Facilities Study: [X] Completed Date Completed: _____

[X] Not Completed Expected Date: _____

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Milestone Schedule

Insert a milestone schedule, preferably in a Gantt chart format or, as a minimum, in the sample format shown below. Items to be considered (as applicable and available) for milestone schedule include: In-service date of the proposed project and specific components of the proposed project, outage availability, permitting requirements, construction duration, deadline for major equipment order, engineering and ROW procurement schedule, existing facility outage availability, cultural resources, or wetland issues. Add commentary under the milestone schedule discussion about the scheduling requirements which need to be completed in order to meet the energization requirement. For example, in the case of wetlands, will the wetlands require winter-only construction? For a reconductoring or rebuild project, can the existing line be taken out of service or will the work need to be done on short outages or live line work? For requirements to sequence the project, what components of the project must be put in-service prior to the construction and/or in-service of other components.

Activity	Start Date	Finish Date
Siting Activities	**01/1/2015**	**01/01/XXXX**
Engineering	**01/01/2015**	**06/31/XXXX**
Licensing and Permitting	**01/01/2015**	**01/01/XXXX**
Real Estate Acquisition	**01/01/2015**	**01/01/XXXX**
Procure Major Equipment and Materials	**01/01/2015**	**01/01/XXXX**
Construction	**01/10/2016**	**10/01/XXXX**
In-Service Date	**11/01/2016**	**------**

Outage Requirements

Description of the anticipated necessary outage requirements for this project and how customers would be supplied or service impacted.

Work Plan Required:

A description of the overall work plan from start to finish; List items that will be done by in-house staff and list services that will be performed by consultants or contractors.

Below is a list of probable project activities. Add other activities which you have considered and included.

- *Siting Activities (e.g. Locating line routing and substation site location options)*
- *Environmental Impact Studies(relative to siting options)*
- *Permitting and Regulatory Activities(e.g. Certificate of Environmental Compatibility and Public Need)*
- *Interconnection Studies (e.g. feasibility, SIS, SRIS, Facilities Study)*
- *Public Outreach plan*
- *Electrical Studies(e.g. Equipment sizing, protection, ground mat design)*
- *Surveying (relative to line and station layouts)*
- *Real Estate Acquisition*
- *Geotechnical Contractor (soil borings, soil resistivity)*
- *Engineering*
- *Procurement of Major Equipment and Materials*
- *Site Work*
- *Below Grade (e.g., foundations, grounding, conduit)*
- *Above Grade (e.g., substation structures)*
- *Electrical Construction (e.g. control house, protection, and controls)*
- *Overhead/Underground/Underwater Electric Construction (e.g. current carrying line and substation equipment)*
- *River crossings and/or directional drilling locations*
- *Telco Construction (e.g. communications for protection and remote telemetry)*
- *Environmental Management & Construction Plan (for Article VII)*
- *Other*

Project Overview

From a high level, this section should discuss the needs and requirements for the project, ~~what is~~ the Public Policy Transmission Need that the project ~~will~~proposes to resolve, how the proposed project will address the need, what will be technically involved in the project such as type of project (OH,UG,UW), conductor type, construction(wood, steel, etc.), required outage schedules, line crossings and impacts, any live line work, substation modifications. Include a description of the expandability of the project for future needs and how it will impact the system's operability and performance.

NOTE: In describing the "project," only include new transmission facilities or upgrades to existing transmission facilities that are necessary to achieve the Public Policy Transmission Need. For the purposes of Attachment Y, an upgrade includes an improvement to, addition to, or replacement of a part of, an existing facility and shall not mean an entirely new transmission facility. Any preliminary identification of interconnection facilities (e.g., Network Upgrade Facilities) that are needed to interconnect the proposed transmission project to the New York State Transmission System (e.g., addition of breakers or bays in an existing substation) are not considered part of the project and should be separately identified. See below under One-Line Diagrams for additional information.

(*Edit these sentences below as appropriate*)

This project consists of [ ].

- The following facilities have been identified by the Developer as new transmission facilities: [ ].

- The following facilities have been identified by the Developer as an Upgrade to an existing transmission facility: [ ].

The driver of this project is [ ].

(Provide results in Attachment C.8 of any studies or analysis completed by the Developer that demonstrates that the project addresses the Public Policy Transmission Need.)

Voltage(s) [ ] kV

MW value with respect to the Public Policy Transmission Need: [ ] MW

Total MW benefit offered by proposed project: [ ] MW

The in-service date for both the line and substation work is [~~]~~], and if construction sequencing is necessary, the in-service date(s) of individual components of the proposed project [ ].

The conductor MVA ratings are:	Summer - Normal [ ], LTE [ ], STE [ ]
	Winter - Normal [ ], LTE [ ], STE [ ]
The circuit MVA ratings would be:	Summer - Normal [ ], LTE [ ], STE [ ]
	Winter - Normal [ ], LTE [ ], STE [ ]

List and describe the most limiting element(s) in the circuit(s).

Substations directly impacted:

Potential Interconnection Facilities: *(Consider any potential interconnection facilities (e.g., Network Upgrade Facilities for projects undergoing study under Attachment P or Attachment Facilities, System Upgrade Facilities, or System Deliverability Upgrades, as applicable, for project undergoing study under Attachment X).)*

Project Expandability: *(~~consider~~Consider future modifications to proposed facilities to increase equipment ratings, staging or phasing of future transmission development, or otherwise benefiting from the proposed facilities for future reliability or congestion relief purposes.)*

Operability and Performance Impacts: *(Consider additional flexibility in operating the system such as dispatch of generation, access to operating reserves or ancillary services, maintenance impacts.)*

One-Line Diagrams:

(Briefly discuss any changes to the existing one-line diagram as a result of this project. Provide a simplified system one line diagram, with breaker arrangement, depicting the ~~interconnection of all connecting~~new transmission ~~owner affected~~ facilities ~~(CTOAF), Developer affected~~and upgrades to existing transmission facilities ~~(DAF), and any known system upgrade~~ necessary to address the Public Policy Transmission Need and potential interconnection facilities ~~(SUF) for~~ that may be necessary to reliably interconnect the project~~.~~ to the existing New York State Transmission System consistent with the applicable interconnection standard.

Potential interconnection facilities for transmission solutions will generally include Network Upgrade Facilities (NUF) but could alternatively include Connecting Transmission Owner Attachment Facilities (CTOAF), Developer Attachment Facilities (DAF), System Upgrade Facilities, and/or System Deliverability Upgrades if the project is being studied under the Large Facility Interconnection Procedures under Attachment X. The one line diagram should depict the location of the Point(s) of Interconnection~~,~~ and the Point(s) of change of Ownership ~~(as defined in Attachment X of NYISO Tariff)~~, if applicable, and the metering point(s). Also provide a detailed one line diagram of the identified interconnecting substation facilities, including the ratings of all proposed major equipment, protective device and relays, revenue and other metering, station service and communication schemes for all ~~CTOAF and SUF~~potential interconnection facilities.

Attachment C.1A: Existing simplified System One-Line Diagram of Integrated Facilities

Attachment C.1B: Existing detailed Electrical One Line Diagram of each Interconnecting substation

Attachment C.1C: Proposed simplified System One-Line of Final Configuration

Attachment C.1D: Proposed detailed Electrical One Line Diagram of each Interconnecting substation

Data Requirements:

Refer to NYISO Manual 24 – Reliability Analysis Data Manual for appropriate modeling data requirements, available from the NYISO Web site at the following URL:

http://www.nyiso.com/public/markets_operations/documents/manuals_guides/index.jsp

Route and Site Information to be Provided

The Developer (check which one (or more) applies and will be provided):

[ ] possesses the rights of way necessary to implement the solution

[ ] will rely on existing rights of way owned by other parties (identify owner(s) and location(s))

[ ] has completed a transmission routing study which:

- Identifies a specific route routing plan with alternatives,
- Includes a schedule indicating the timing for obtaining siting and permitting,
- Provides specific attention to sensitive areas (e.g. wetlands, protected areas, etc.)
- Include a copy of the study in Attachment C.2A

[ ] has a specified plan or approach for determining the routing and acquiring property rights. Include details of the plan in Attachment C.2A.

Refer to Attachment C.2B to provide a map of the line route or corridor.

The land adjacent to the primary project corridor consists of approximately:

Commercial / Industrial / Urban	[ ] miles
Residential	[ ] miles
Open Field/Fallow Land	[ ] miles
Agricultural District/Crop Land	[ ] miles
Forested Land	[ ] miles
Wetland (NYSDEC/USACE)	[ ] miles

If Overhead:

- [ ] miles in existing transmission ROW
- [ ] miles requiring new ROW

If Underground:

- [ ] miles in roadway or shoulder
- [ ] miles in existing transmission ROW (other than roads)
- [ ] miles in new ROW (other than roads)
- [ ] miles underwater

[ ] miles of the line run parallel to Interstate Highways.
[ ] miles of the line run parallel to rural state, county, or town roads.
[ ] miles of the line run parallel to city or village streets.
[ ] miles of the line run parallel to adjacent utilities & utility corridors

Use Attachments C.2C and C.2D for presenting existing and proposed Site Plans and Plot Plan drawings. (The site Plan should depict the existing and new transmission lines and structures, rights of ways, property lines, regulated wetlands, culverts, ditches and other existing utilities in the area. A substation Plot Plan for the interconnecting substations should depict the fenced areas, major structures, equipment, control buildings, property lines and access roads. Provide a geographic map with the substation superimposed.)

Design Criteria

Design Standards shall meet the [interconnecting TO(s)] standard Transmission Line and Substation Design Criteria. If no [interconnecting TO(s)] or applicable local standard exists, then, the applicable industry standard or good utility practice will be used including the NYPP Tie Line Ratings Task Force 1995 Tie-Line Ratings Final Report. As a minimum, all new facilities should comply with the current National Electric Safety Code. (*List* all organizations' design standards which will be used and *any exceptions to Design Criteria which are being proposed.)*

Right-of-Way Requirements

(Information to be provided by Project Developer)

Multiple ROW width requirements may be necessary depending on the design and construction type and methods. Details of Right-of-Way calculations including typical cross sections should be included in Attachment C.6.

Transmission Drawings

The following drawings are generally developed for transmission projects. The state of development of the project will generally determine when the drawings are needed: *(delete any of the following that do not apply or which are not currently available*) title sheet, route map, plan and profile, phasing diagram, Structure details (steel, tube, etc.), foundation details (concrete, embedded, etc.), road crossing plans, hardware, plan of work drawings at the endpoints, assembly drawings including connections to substation dead-ends. See Attachment C.3 for the standard structure drawings that will be included or modified with this project.

Substation Drawings

The following drawings are generally applicable for substation projects and should be provided if available: (delete any of the following that do not apply) Relay One Lines, Site Plan, Plot Plan Grading Plan, Foundation Plan and Details, Grounding Plan and Details, Conduit Plan and Details, General Arrangement Plan and Elevation Views, Schematic Diagrams, Connection Diagrams.

Environmental Requirements

The following environmental requirements shall apply to this project:

(Information to be provided by Project Developer's Environmental Consultant)

Permitting Requirements

(Consider the permitting requirements that are applicable to the project and determine which permits are necessary. The Project Developer should identify and assess the siting requirements, as applicable, for this particular project and why/how they would be met by the applicant, including but not limited to:

Regulatory: Article VII, Part 102, Local permits, Other

Environmental: *(NYSDEC, Adirondack Park, USACE, etc.)*

Real Estate: (NYS Dept of *Agriculture and Markets, NYS Historic Preservation, Railroad, FAA, Municipalities, etc)*

Construction: (NYSDOT, *Road closure permits, temporary road crossing permits)*

Removal of Existing Transmission Line Facilities

(State the type(s), voltage(s), miles of line and number of structures and switches to be removed)

Risk Register

(List any potential risks to the proposed project and potential mitigations. Detailed Risk Register should be provided in Attachment C.7)

Estimated Project Cost Detail:

(Project Developer is expected to provide estimates ~~utilizing~~using the basic format and content shown below in the example estimate and add items as necessary to reflect proposed scope~~.~~ of the solution. Project Developer is encouraged to provide backup details and attach their own project estimating forms or tools to offer reference and background as to the Project Developer methodology and logic for cost estimating. At a minimum the form data below should be filled out completely and as accurately as possible with differentiation between the intended accuracy estimate and the contingency range estimates which you are using for your particular project depending on the type of construction and the unknowns for the type(s) of construction being proposed. All cost categories should be rounded to the nearest $1,000. If a contingency % adder is included in the estimate, a detailed description of the factors that went into the contingency percentage(s) must be provided. It is recommended that the estimate be performed to industry standards such as a Class 4 estimate or better as defined in the Association for the Advancement of Cost Engineering International Recommended Practice.)

Provide Attachments C.4.1 through C.4.4 for detailed Project Cost estimates and include:

- *All assumptions in developing the estimate.*
- *Facilities required to be added, removed, or replaced by proposed project but not owned by [Project Developer],if any, should be itemized, explained, and shown in the submitted total cost estimate.*
- *Estimates need to include distribution underbuild costs if applicable.*
- *State what ROW and site acquisition costs are included in the estimate such as new ROW or site purchases or easements, supplemental easement costs, and whether or not existing available easement or ROW already exists?*
- *All Developers must provide project cost details for each of the following categories (as applicable):*
    - ~~*Proposed project*~~
    - *Proposed project (separately including new transmission facilities and upgrades to existing transmission facilities)*
    - ~~*Potential*~~ *Interconnection Facilities ~~(both direct and assigned)~~*
    - *or NYISO-identified Interconnection Facilities (e.g., Network Upgrade Facilities if undergoing study under Attachment P or Attachment Facilities, System Upgrade Facilities ~~(if assigned and~~, System Deliverability Upgrades, as applicable, if undergoing study under Attachment X) if known~~)~~ from a NYISO-conducted interconnection study*
    - ~~*Other upgrades*~~
    - *Costs to construct a new local control center or modify an existing control center to the proposed project*

- Cost containment mechanisms that a Developer voluntarily includes as part of a proposed Public Policy Transmission Project. The Cost Cap must cover all the Included Capital Costs, as defined in OATT Section 31.4.5.1.8.1. The only allowed exceptions are the Excluded Capital Costs, as defined in Section 31.4.5.1.8.2 and Section 31.4.8.2.1 of OATT. Accordingly, a Developer must submit two versions of the tables below – one version for Included Capital Costs and one version for Excluded Capital Costs as provided in the tariff.
- **Example Estimated Transmission Line Project Cost Detail:**

Line kV	General Type of Construction	Line Miles	Ruling Span		Amps/MVA	Comment
[voltage]kV	[mono-pole,H-Frame,Steel, Lattice, etc.]		[length] [units]			
Pre-Construction Costs	Description	Quantity	Unit Cost		Sub Totals	Comment
Studies	[List all studies such as Environmental, EMF, Cost Benefit]		Cost or xx% of project cost			
Legal						
Engineering (internal)			Cost or xx% of project cost			
Engineering (Consultant)			Cost or xx% of project cost			
Project management						
Licensing and Permitting costs						
Land Survey Costs	[LiDAR, Boundary, Stake-out]					
Geotechnical Costs	[subsurface investigation, borings, etc.]					
[add additional items]						
Land Acquisition Cost Item	Description	Quantity	Unit Cost		Sub Totals	Comment
Utility Property		[Acres]	[$ Adder/acre]			
Non-utility Property		[Acres]	[$ Adder/acre]			
Commercial/Industrial		[Acres]	[$ Adder/acre]			
Residential		[Acres]	[$ Adder/acre]			
Fallow Land		[Acres]	[$ Adder/acre]			
Farm Crop Land		[Acres]	[$ Adder/acre]			
Forested Area		[Acres]	[$ Adder/acre]			
Wetlands		[Acres]	[$ Adder/acre]			
Crop Damages		[Acres]	[$ Adder/acre]			
[add additional items]						
Material Cost Item	Description	Quantity	Unit Cost		Sub Totals	Comment
			Material	Install		
Type of Conductor	[kcmil,ACSR/ACSS, etc.,1/2/4/5 Bundle]					

Shield Wire	[1 or 2], [size] EHS, OPGW					
Number of Deadends	[number] Wood, Steel, etc.					
Number of Running Angle	[number] Wood, Steel, etc.					
Number of Tangents	[number] Wood, Steel, etc					
Number of Foundations	[number] direct bury, [number] concrete (caisson and/or grillage)					
Insulators						
Misc. including hardware, guying, etc.						
List cable, trench, terminations, etc if underground or sea cable						
[add additional items]						
Construction Cost Item	Description	Quantity	Unit Cost		Sub Totals	Comment
Live Line Work	Live Line +/- Cost Adder	[miles]	[+/- Adder/mile]			
Matting	Matting for Wetland & Sensitive Areas	[miles]	[$/mile]			
Access Roads						
Work Pads						
Clearing						
Culverts, bridges, gates, etc						
Traffic control, snow removal, etc						
Environmental Controls and Restoration		[miles]	[$/mile]			
Environmental Mitigation Costs						
[add additional items]						
					[Total]	
Contingency (Unknown Issues)	Description	Quantity	Unit Cost		Sub Totals	Comment
[Contingency Item]	[Explanation of Contingency]	[%]				
Potential Risk Items Adders (Known Issues)	Description	Quantity	Unit Cost		Sub Totals	Comment
[add risk items as necessary]	[Description of risk item]					
					[Total]	
Taxes	Description	Quantity	Unit Cost		Sub Totals	Comment
	[Description of Taxes]	[%]				
Escalation	Description	Quantity	Unit Cost		Sub Totals	Comment
	[Description of Escalation]	[%]				
					[Total]	

- **Example Estimated Substation Project Cost Detail:**

Pre-Construction Costs	Description	Quantity	Unit Cost		Sub Totals	Comment
Studies	[Environmental, Grounding, Sound, Protection etc]		Cost or xx% of project cost			
Legal Fees						
Engineering (internal)			Cost or xx% of project cost			
Engineering (Consultant)			Cost or xx% of project Cost			
Project Management						
Licensing and Permitting Costs						
Land Survey Costs	[LiDAR, Topographical, Boundary, Stake-out]					
Geotechnical Costs	[subsurface investigation, borings, etc.]					
[add additional items]						
Land Acquisitions Cost Item	**Description**	**Quantity**	**Unit Cost**		**Sub Totals**	**Comment**
Utility Property		[Acres]	[$ Adder/acre]			
Non-utility Property		[Acres]	[$ Adder/acre]			
Commercial/Industrial		[Acres]	[$ Adder/acre]			
Residential		[Acres]	[$ Adder/acre]			
Fallow Land		[Acres]	[$ Adder/acre]			
Farm Crop Land		[Acres]	[$ Adder/acre]			
Forested Area		[Acres]	[$ Adder/acre]			
Wetlands		[Acres]	[$ Adder/acre]			
Crop Damages		[Acres]	[$ Adder/acre]			
[add additional items]		[Acres]	[$ Adder/acre]			
Equipment/Material Cost Item	**Description**	**Quantity**	**Unit Cost**		**Sub Totals**	**Comment**
			Material	Install		
Transformer	[Nameplate Ratings]					
Breaker	[Nameplate Ratings]					
Switches	[Nameplate Ratings]					

Capacitors, Reactors, etc	[Nameplate Ratings]					
Instrument Transformers	[Nameplate Ratings]					
Surge Arresters	[Nameplate Ratings]					
Structures						
Bus, Insulators, Hardware						
Foundations						
Oil Containment						
Conduits/Trench						
Grounding						
Control House						
AC and DC Distribution Systems						
Control Cables						
Protection and Control						
SCADA						
Communications						
[add additional items]						
Construction Cost Item	Description	Quantity	Unit Cost		Sub Totals	Comment
Site Prep/Grading						
Testing and Commissioning						
[add additional items]						
					[Total]	
Contingency (Unknown Issues)	Description	Quantity	Unit Cost		Sub Totals	Comment
[Contingency Item]	[Explanation of Contingency]	[%]				
Potential Risk Items Adders (Known Issues)	Description	Quantity	Unit Cost		Sub Totals	Comment
[add risk items as necessary]	[Description of risk item]					
					[Total]	
Taxes	Description	Quantity	Unit Cost		Sub Totals	Comment
	[Description of Taxes]	[%]				
Escalation	Description	Quantity	Unit Cost		Sub Totals	Comment
	[Description of Escalation]	[%]				
					[Total]	

Estimated Project Cost Detail:

List and explain any major assets in estimate to be Owned by Others:

Total Cost Estimate Accuracy: ([+/- X% Engineering & ROW acquisition], [+/- XX% Construction])

Total Project Cost [Project Developer] and Others: **$xx**
(total of estimated [Project Developer] costs)

Total Facilities Cost not owned, or paid for, by [Project Developer]: **$xx**
(Include this statement if applicable) This project is [ ]% compensable by [source of other ownership/funding].

Total Project Cost: **$xx**

Project Life and Operation and Maintenance Costs:

The estimated life of the project's installed facilities is [ ] years.

The project's estimated annual maintenance/operating costs for the proposed solution over the life of the facilities is $[ ]/year. Provide detail to substantiate costs.

Cost Cap for Included Capital Costs voluntarily submitted by Developer:

Hard Cost Cap: $xx

Or Soft Cost Cap: $xx

Risk shared by Project Developer %

Risk shared by ratepayers %

Completed By: _____
Engineering Lead/Consultant Printed Name Date

Reviewed By: _____
Project Engineer Printed Name Date

Approved By: _____
[Project Manager or Authorized Rep] Printed Name Date

Attachment C.1A: Existing simplified System One-Line Diagram of Integrated Facilities

Attachment C.1B: Existing detailed Electrical One Line Diagram of each Interconnecting substation

Attachment C.1C: Proposed simplified System One-Line of Final Configuration

Attachment C.1D: Proposed detailed Electrical One Line Diagram of each Interconnecting substation

Attachment C.2A: Transmission Routing Study or plan for determining the routing and acquiring property rights

(If Developer has not obtained all necessary property rights to implement the solution, insert the transmission routing study if completed. If a routing study has not been completed, include a description of the plan for determining the routing and acquiring property rights.)

Attachment C.2B: Proposed Line Route (presented on a _____ map with minimum scale of _____ and displaying a centerline and corridor width of _____ feet.)

(*this route should include any structure numbers that are specifically called out at any point*)

Attachment C.2C: Existing Site Plan and Plot Plan for each interconnecting substation

(insert the existing Site Plan depicting the existing transmission lines and structures, rights of ways, property lines, regulated wetlands, culverts, ditches and other existing utilities in the area. Insert the existing Plot Plan for the interconnecting substations which depict the fenced areas, major structures, equipment, control buildings, property lines and access roads.)

Attachment C.2D: Proposed Site Plan and Plot Plan for each interconnecting substation

(insert the proposed Site Plan depicting the existing and new transmission lines and structures, rights of ways, property lines, regulated wetlands, culverts, ditches and other existing utilities in the area. Insert the proposed Plot Plan for the interconnecting substations which depict the new fenced areas, major structures, equipment, control buildings, property lines and access roads.)

Attachment C.3: Typical Structure Drawings for Project

(provide typical structure type drawings to be used on this project, tangent, running angle, and deadend structures. Insert other

structures drawings, such as ROW cross sections, as to be helpful to understand project costs)

Attachment C.4.1: Detailed Estimated Cost Breakdown Sheet

(insert project Developer's estimating spreadsheet used to develop project costs.

Attachment C.4.2: [Project Developer] Associated Assets

(list major assets the project requestor will own at the end of the project)

Attachment C.4.3: Facilities Assets not owned by [Project Developer] *(list assets that will be owned by others at the end of the project)* (*delete if not applicable*)

Attachment C.4.4: Cost Estimate Assumptions & Clarifications

Attachment C.5: Project Milestone Schedule *(Project Developer may use own format~~))~~, and Project Developer should identify the overall In-Service Date of the project, as well as earlier in-service dates for new transmission facilities and upgrades to existing transmission facilities that must be placed in service in a specific sequence for the construction of the project)*

Attachment C.6: ROW Width Calculations & Drawings

Attachment C.7: Risk Register

Attachment C.8: Planning Study Results

(insert results of any studies or analysis completed by the Developer that illustrates that the project will address the Public Policy Transmission Need.)

Attachment C.9: Plan to operate and maintain the assets

Transmission Line Proposed Project Scope Document

Attachment C.1.A and B
Initial One-Line Diagrams

(Provide INITIAL one line diagrams as required)

Transmission Line Proposed Project Scope Document

Attachment C.1.C and D
Final/Ultimate One Line Diagrams

(Provide FINAL/ULTIMATE one line diagrams as required)

Transmission Line Proposed Project Scope Document

Attachment C.2.A

Proposed Transmission Routing Study or Plan

Transmission Line Proposed Project Scope Document

Attachment C.2.B
Proposed Line Route

Transmission Line Proposed Project Scope Document

Attachment C.2.C

Existing Substation Site Plans and Plot Plans

Transmission Line Proposed Project Scope Document

Attachment C.2.D

Proposed Substation Site Plans and Plot Plans

Transmission Line Proposed Project Scope Document

Attachment C.3
Typical Structure Drawings

(Provide Typical Structure Drawings as required)

Transmission Line Proposed Project Scope Document
Attachment C.4.1

(Provide Developer's Estimated Cost Breakdown sheet)

Transmission Line Proposed Project Scope Document

Attachment C.4.2

Cost Estimate – [Project Developer] Associated Assets

(List associated assets)

Transmission Line Proposed Project Scope Document

Attachment C.4.3
Cost Estimate –Facilities Assets Owned By Others

(List other facilities and cost estimates)

Transmission Line Proposed Project Scope Document

Attachment C.4.4
Cost Estimate Assumptions and Clarifications

(Review the following Assumptions & Clarifications. Delete those that do not apply and add others as required)

1. This estimate contains [___%] contingency amounts. [Project Requestor] does not require contractor bonds or liquidated damages, so the costs for bonds and liquidated damages have not been included.
2. All costs are estimated in (year) dollars, and then escalated at a rate of x.x% per year to the year of expenditure. Engineering costs are assumed to be incurred in (year). All construction and material costs are escalated to a rate of x.x% and assumed to be incurred in (year). The percentages will be provided in the requests for solutions
3. A cost for miscellaneous equipment and materials, which is assumed to be [x%] of the total cost of the equipment and materials, is included. Miscellaneous construction costs, which are assumed to be [x%] of the total construction labor cost (excluding engineering and construction inspection), are also included. These costs are listed as sundries in the estimates.
4. New York State sales and use taxes have been added and are applied to material and the applicable labor categories.
5. All transmission line and substation construction will be performed by "contract labor."
6. All materials removed for this project are assumed to be scrapped. No salvage value is assumed for the existing structures, conductors and hardware during removal/modification of the existing lines.
7. The quantities of materials and labor shown are those estimated to be actually required (no extras) for the design and construction of the line and substation(s) except for the purchase of the line conductor and shield wire. The conductor and shield wire contains [ ] percent extra (*3-5% typical*).
8. The estimate is based on the existing transmission line being [energized / de-energized], distribution circuits being [energized / de-energized], and substation(s) being [energized/de-energized] during the construction period.
9. New transmission line structures will be located as close as possible to existing structures along the line route.
10. The estimate is based on the following restrictions on placement of transmission line structures in wetlands. The following mitigation costs are included for the wetland areas: (present details if applicable and available)
11. It is assumed that [ ]% of the existing right-of-way will require [light / medium / heavy] clearing for line rebuild.

12. OPGW termination equipment [is / is not] included in any estimate.
13. Approximately [ ] ground rods will be installed at each transmission line structure to achieve a target ground resistance of less than 40 ohms.
14. The need for protective matting during construction is based on input from [Contractor].
15. This estimate includes the assumption that [Location(s)] will be used for pole and material delivery and laydown.
16. Statement of compliance with, and identification of, all reliability standards, interconnection requirements, and design standards applicable to the project.

Transmission Line Proposed Project Scope Document

Attachment C.5
Project Milestone Schedule

(Provide Project Milestone Schedule)

Transmission Line Proposed Project Scope Document

Attachment C.6

ROW Width Calculations with Associated Drawings

Transmission Line Proposed Project Scope Document

Attachment C.7
Risk Register

Transmission Line Proposed Project Scope Document

Attachment C.8
Planning Study Results

(Insert results of any studies or analysis completed by the Developer that illustrates that the project will address the identified Public Policy Transmission Need)

Transmission Line Proposed Project Scope Document

Attachment C.9

Plan to operate and maintain the assets

(Insert the plan to operate and maintain the assets associated with the project. Describe if the assets will be operated from a new control center or if expansion to an existing control center is required. If a controllable device is included as part of the proposal, describe how the device should be operated to optimize the performance.)