A. INTRODUCTION

This attachment considers the potential impacts of the Proposed Action with regards to Noise and Electromagnetic Fields (EMFs).

A detailed Noise Impact Assessment Study ("Noise Study") was completed to evaluate the potential sound-level impact of future operational noise levels at the Proposed Substation. The Noise Study is included as **Appendix C**. The distribution and transmission components of the Proposed Action do not include any operational-phase noise-generating equipment and therefore are excluded from the Noise Study. Potential impacts from construction related noise are addressed in Attachment G, "Construction".

The potential EMF impact of the Proposed Action has been evaluated based on a comparison of the Proposed Action to the EMF levels measured and evaluated in the *Electric and Magnetic Field Assessment: The West Bartlett Substation* Project ("EMF Study"), prepared by Exponent, dated June 20, 2016, and provided in **Appendix D**.

B. NOISE STUDY

The Noise Study included: 1) measurements of existing sound levels collected on August 11, 2021 at six monitoring (receptor) locations; 2) Computer propagation modeling based on the proposed installation of three 69/13 kV 33MVA transformers and three heating, ventilation, and air conditioning (HVAC) units operating at maximum capacity, and 3) an evaluation of the results of the assessment to applicable noise standards, guidelines, and limits.

EXISTING CONDITIONS

Existing ambient background noise levels were measured at six receptor locations (Receptor Locations 1 through 6) located in the vicinity of the Proposed Substation. Receptor Locations 1 through 4 are located in the immediate vicinity of the Proposed Substation and adjoining streets. Receptor Location 5 is located approximately 280 feet north of the Proposed Substation at the nearest residential property, and Receptor Location 6 is located approximately 350 feet southeast of the Proposed Substation, within a municipal parking lot.

The observed daytime total sound levels at the receptor locations ranged from 54 A-weighted decibels (dBA) to 66 dBA, and the observed nighttime sound levels ranged from 51 dBA to 63 dBA. The maximum daytime and nighttime sound levels were detected at Receptor #6, the Town of Oyster Bay Parking Lot located at intersection of Hicksville Road (Route 107) and Sunrise Highway.

POTENTIAL IMPACTS OF THE PROPOSED ACTION

The NYSDEC noise guidelines are defined in their publication "Assessing and Mitigating Noise Impacts"[1] ("NYSDEC Noise Guidance"). This document states that sound pressure level (SPL) increases from zero to three decibels should have no appreciable effect on receptors; increases of three to six decibels may have the potential for adverse impact only in cases where the most sensitive of receptors are present; and increases of more than six decibels may require a closer analysis of impact potential depending on existing noise levels and character of surrounding land use. NYSDEC Noise Guidance also indicates that the addition of any permanent noise source should not raise ambient levels above 65 dBA in any non-industrial setting, or that noise sources should not exceed ambient levels when ambient levels already exceed 65 dBA.

The projected (modeled) future noise impact levels for the Proposed Substation were evaluated based on potential worst-case future noise levels from the simultaneous operation of the proposed three new 69kV transformer banks operating at maximum capacity. Modeling results for the six receptor locations are summarized below.

Receptor Location No.	Receptor Location	Daytime Total Sound Levels with all Equipment Operating at Full Load (dBA)	Daytime Measured Ambient Total Sound Levels (dBA)	Nighttime Total Sound Levels with all Equipment Operating at Full Load (dBA)	Nighttime Measured Ambient Total Sound Levels (dBA)
1	Adjacent to 49 Brooklyn Avenue (Northern Perimeter of the Site)	62	62	53	53
2	Adjacent to 44 Brooklyn Avenue (Northwest corner of the Site	55	55	51	51
3	Adjacent to 50 Brooklyn Avenue (Eastern Perimeter of the Site)	56	56	54	53
4	Adjacent to 501 Hicksville Road (Route 107)	62	62	60	60
5	Adjacent to 55 New York Avenue	54	54	51	51
6	Town of Oyster Bay Parking Lot at intersection of Hicksville Road (Route 107) and Sunrise Highway	66	66	63	63

As shown above, total sound levels at the subject property lines following the completion of the Proposed Substation would not increase more than 1 dBA beyond existing total sound levels. NYSDEC Noise Policy

[1] NYSDEC. "Assessing and Mitigating Noise Impacts". October 6, 2000. Revised February 2, 2001. http://www.dec.ny.gov/docs/permits_ej_operations_pdf/noise2000.pdf (Accessed September 5, 2017).

Guidelines state that increases ranging from 0-3 dBA should have no appreciable effect on receptors. As a result, the operation of the Proposed Substation will not result in significant adverse noise impacts to nearby receptors.

C. ELECTROMAGNETIC FIELD STUDY

The potential EMF impact of the Proposed Action has been evaluated based on a comparison of the EMF levels calculated for the West Bartlett Substation Project. According to the New York State Public Service Commission's (NYSPSC's) Statement of Interim Policy on Magnetic Fields of Major Electric Transmission Facilities (issued and effective September 11, 1990), the prudence avoidance health standard for magnetic field is 200 milligauss (mG) at the edges of major transmission facility rights-of-way (100 feet for circuits with voltage less than 230kV, with the transmission line centered). Major transmission facilities are defined as transmission line facilities that are subject to Article VII of the Public Service Law. Although the Proposed Action is not subject to Article VII, the NYSPSC standard will be used for EMF evaluation purposes.

For comparison purposes, the LIPA West Bartlett Substation is a 69kV substation with two connecting OH 69kV transmission circuits. Similarly, the Proposed Action will be a 69kV substation consisting of two OH 69kV transmission circuit connections. Thus, the West Bartlett Substation Project and Proposed Substation consist of similar project components operating at comparable capacities and voltages.

The EMF study that was undertaken for the West Bartlett Substation Project included calculating average and peak-load magnetic fields for post-project conditions. Peak-load conditions represent the highest anticipated load conditions during summer months, when power demand is highest. The EMF Study calculated post-project magnetic fields at several profile locations extending outward from the West Bartlett Substation fence, and across the interconnecting 69kV transmission circuits. The maximum magnetic field measurement collected from all profile locations (including around the substation and across the 69kV transmission circuits) was 26.1 mG (under peak-load conditions), well below the NYSPSC's prudence avoidance health standard of 200 mG.

Based on a comparative analysis of the West Bartlett Substation Project, the predicted EMF levels from of the Proposed Action will be below the 200 mG prudence avoidance health standard established by the NYSPSC and will not result in significant adverse impacts.