A. INTRODUCTION

Public health involves the activities that society undertakes to create and maintain conditions in which people can be healthy. Many public health concerns are closely related to hazardous materials, water quality, air quality, and noise. The *City Environmental Quality Review (CEQR) Technical Manual* defines as its goal with respect to public health "to determine whether adverse impacts on public health may occur as a result of a proposed project, and, if so, to identify measures to mitigate such effects." The *CEQR Technical Manual* indicates that for most proposed projects, a public health analysis is not necessary. Where no significant unmitigated adverse impact is found in other CEQR analysis areas, no public health analysis is warranted. If, however, an unmitigated significant adverse impact is identified, the lead agency may determine that a public health assessment is warranted for that specific technical area.

B. PRINCIPAL CONCLUSIONS

The *CEQR Technical Manual* indicates that for most proposed projects, a public health analysis is not necessary. Where no significant adverse impact is found in other CEQR analysis areas, such as air quality, water quality, hazardous materials, or noise, no public health analysis is warranted. Per *CEQR Technical Manual* guidance, a public health assessment is warranted and provided below as potential unmitigated significant adverse construction noise impacts may occur. However, while during some periods of construction the Proposed Actions would result in significant adverse impacts related to noise, as defined by *CEQR Technical Manual* thresholds, the predicted overall temporary change in noise levels would not be large enough to substantially affect public health. Therefore, the Proposed Actions would not result in significant adverse public health impacts during construction.

C. PUBLIC HEALTH ASSESSMENT – NOISE

As described in **Chapter 14, "Noise,"** noise from the increased traffic volumes generated by the Proposed Actions and resultant reasonable worst-case development scenario (RWCDS) would cause significant adverse noise impacts as the relative increase in noise levels would be above the applicable *CEQR Technical Manual* significant adverse impact threshold (3.0 dBA). Significant adverse impacts related to traffic-generated noise are predicted to occur on 10 residential and commercial office buildings along 26th Avenue between 3rd and 4th Street, and along 3rd Street between 26th and 27th Avenue during various peak hours. Specifically, traffic-generated noise impacts are expected to occur at 3-04 – 3-06 26th Avenue, 3-08 – 3-10 26th Avenue, 26-38 3rd Street, 26-31 3rd Street, 26-24 3rd Street, 26-18 3rd Street, 26-19 3rd Street, 26-15 3rd Street, 26-11 3rd Street, and 26-35 3rd Street.

As described in **Chapter 18, "Mitigation,"** practicable and feasible mitigations measures will be explored in consultation with DCP and additional work will be conducted between the DEIS and FEIS to provide a sufficient reduction to the identified noise increments to remain below the CEQR threshold (i.e., 3 dBA) or to lower interior noise levels at the identified impacted noise receptors to an acceptable range. If

warranted, possible mitigation measures could include installing storm windows or providing an alternate means of ventilation (including, but not limited to, air conditioning) to impacted existing noise receptors where these measures are not already in use. However, if interior noise levels at the identified impacted noise receptors are still above the acceptable level (i.e., 45 dBA or lower for residential/community facility uses, and 50 dBA or lower for commercial office uses) and there are no other feasible and practicable mitigation measures that are identified, the significant adverse mobile source noise impacts would be considered either partially mitigated or would remain unmitigated.

Assessment

Noise, or unwanted sound, is a leading cause of public complaints in New York City. When significant adverse noise impacts are identified and may not be fully mitigated, noise in and around sensitive residential uses may decrease quality of life by disrupting sleep or interfering with conversations. Chronic noise exposure may raise blood pressure and has been suggested to contribute to myocardial infarctions, as well as to interfere with language development in children. Prolonged exposure to levels above 85 dBA will eventually harm hearing.

None of the residential buildings in the vicinity of the Project Area would experience elevated L_{eq} noise levels that would exceed 85 dBA. Additionally, as described in **Chapter 14, "Noise,"** the predicted noise levels are at their highest during peak traffic commuting hours (generally between 8:00 AM and 6:00 PM), when most residents are at work or school and away from their places of residence. Noise levels outside of the peak commuting hours (generally between 6:00 PM and 8:00 AM), when residents are more likely to be at home, would likely be considerably lower.

The detailed noise modeling analysis concluded that Proposed Actions could result in noise levels exceeding noise impact criteria of greater than 3 dBA at 10 residential buildings during various peak hours. While the residential and commercial office buildings at 3-04 – 3-06 26th Avenue, 3-08 – 3-10 26th Avenue, 26-38 3rd Street, 26-31 3rd Street, 26-24 3rd Street, 26-18 3rd Street, 26-19 3rd Street, 26-15 3rd Street, 26-11 3rd Street, and 26-35 3rd Street could experience an increase in L_{10} noise levels in exceedance of the 3 dBA CEQR threshold, these impacts are expected to occur during peak commuting hours when most residents are away from home. As noise levels in the vicinity of the Project Area are expected to be significantly lower outside of work and school hours, when residents are more likely to be at home, and as the residential buildings in the vicinity of the Project Area would not experience L_{eq} noise levels in exceedance of 85 dBA (the highest L_{eq} noise level is projected to be 76.01 dBA at 3-08 – 3-10 26th Avenue), the Proposed Actions are not anticipated to cause excessively high chronic noise exposure and, therefore, are not expected to result in a significant adverse public health impact related to noise.

D. PUBLIC HEALTH ASSESSMENT – CONSTRUCTION NOISE

As described in **Chapter 17, "Construction,"** the *CEQR Technical Manual* divides construction duration into "short-term" (less than two years) and "long-term" (two or more years) and states that impacts resulting from short-term construction generally do not require detailed assessment. Construction activities would follow the requirements of the New York City Noise Control Code (also known as Chapter 24 of the Administrative Code of the City of New York, or Local Law 113) for construction noise control measures. Specific noise control measures would be incorporated in noise mitigation plan(s) required under the New York City Noise Control Code. These measures could include a variety of source and path controls. Even with these measures, predicted noise levels due to construction-related activities associated with the Proposed Project would result in increases in noise levels that would exceed the *CEQR Technical Manual* and additional construction noise impact criteria at several adjacent residential

receptor locations over a prolonged period of time. Affected locations include approximately five existing residential buildings to the south and the proposed Astoria Cove Building #1 to the east.

As presented in **Chapter 18, "Mitigation,"** and **Chapter 20, "Unavoidable Adverse Impacts,"** potential measures to mitigate the significant adverse construction noise impacts were explored in consideration of their effectiveness, cost, and feasibility. Several residential buildings near Projected Development Site 1 do not have central air conditioning and typically rely on window air conditioning for cooling. Any units lacking a window AC would need to keep their windows open during summer months, which would substantially decrease window/wall noise attenuation. The exterior to interior attenuation provided by a building with windows open is approximately 10 dBA, compared to up to 28 dBA for closed double-glazed windows and window air conditioning units. Interior $L_{10(1)}$ noise levels would exceed the recommended threshold for residential use according to CEQR noise exposure guidelines for extended periods during construction; increment durations could persist above 15 dBA Leq for over 12 months. Considering the magnitude and duration, this would represent a significant adverse construction noise impact.

While the provision of window air conditioners to the affected buildings was explored, such a measure would only reduce the magnitude of temporary construction noise impacts, and the identified impacts would not be fully mitigated. Specifically, even with the provision of window air conditioners to these buildings, during certain periods of the Proposed Project's construction, interior noise levels would exceed 45 dBA $L_{10(1)}$ (the CEQR acceptable interior noise level criteria). For units that already have window ACs, further receptor controls would not be effective and the significant adverse impact would remain unmitigated. The feasibility of providing window ACs to any apartment units currently lacking them will be explored as a potential partial mitigation between the DEIS and FEIS.

Assessment

The *CEQR Technical Manual* construction noise impact thresholds are based on quality of life considerations and not on public health considerations. In terms of public health, significance is not determined based on the incremental change in noise level, but is based principally upon the magnitude of noise level and duration of exposure. Noise in and around homes may decrease quality of life by disrupting sleep or interfering with conversations. Prolonged exposure to levels above 85 dBA will eventually harm hearing.

None of the existing residential buildings in the vicinity of Projected Development Site 1 would experience elevated noise levels that would exceed 85 dBA. Additionally, as described in **Chapter 17, "Construction,"** the predicted elevated noise levels due to construction are associated with specific pieces of equipment that operate intermittently during the construction period. Noise levels during hours or days in which those pieces of equipment would not be operating would be lower than the worst-case noise levels determined as part of the construction noise analysis; and outside of the construction work hours, when residents are more likely to be at home, these receptors would not experience elevated noise levels as a result of construction.

The detailed modeling analysis concluded that construction of the Proposed Project could result in noise levels exceeding noise impact criteria of greater than 15 dBA for more than 12 months or greater than 20 dBA for more than 3 months. The residential units in 3-04 26th Avenue, 3-06 26th Avenue, 3-08 26th Avenue, 3-10 26th Avenue, 26-02 4th Street, and planned Astoria Cove Building #1, would experience exterior noise levels from mid-70s dBA to low 80s dBA, which represents increases in noise levels from approximately 19 dBA to 27.5 dBA compared with existing levels during construction. Phase 1 and Phase 2 of the development will experience exterior noise levels from the mid-70s to low-80s dBA, which represents an increase in noise levels of approximately 19 dBA to 27.5 dBA.

Additionally, the predicted noise exposure for the occupants of the residential buildings that could experience potentially significant adverse construction noise impacts would depend on the amount of façade noise attenuation provided by the buildings. The façade noise attenuation is a factor of the building façade construction as well as whether the building's windows can remain closed. Buildings that have an alternate means of ventilation (e.g., some form of air conditioning) are assumed to be able to maintain a closed-window condition, which results in a higher level of façade noise attenuation. At all analyzed noise receptors, interior noise levels are predicted to be well below the 85 dBA threshold. Since the area of potential noise impacts is limited and the population exposed to elevated noise levels due to construction is very limited, and, as described above, construction as a result of the Proposed Actions would not have the potential to result in episodic or unpredictable exposure to short-term impacts of noise at high decibel levels. Therefore, there would not be significant adverse public health impacts due to construction resulting from the Proposed Actions.