

***Combined Mobile and Stationary Source Noise.*** The Bronx High School of Science could be exposed to the combined effect of both mobile and stationary noise generated by construction activities at the Reservoir. Based on the PCE screen presented in Table 8.2-16, the largest potential incremental change in mobile source noise levels due to construction activities for Goulden Avenue (along which the school is located) would be less than 1.0 dBA. Receptors at this site already would have noise level increases in excess of the CEQR impact threshold used to determine significance due to contributions from stationary source noise. The contribution from mobile sources to the total noise would not appreciably change predicted noise levels.

As discussed previously, the increased noise levels resulting from construction activity would exceed the thresholds established by CEQR for defining significant adverse noise impacts. These increased noise levels would persist for less than eight months out of a year; these increased noise levels therefore would be considered temporary and not significant. However, noise attenuation solutions have been considered due to the sensitive nature of the Bronx High School of Science and the land uses of the surrounding area. A noise attenuating barrier would be constructed that would reduce the construction-generated noise to levels that are less than the 3-5 dBA CEQR impact threshold. The noise barrier would be installed for the duration of construction activities. Section 9.0, Mitigation of Potential Impacts, presents possible mitigation measures that would be implemented.

***Vibrations.*** It is possible that excavation activities for the new shaft chamber at the Reservoir may cause vibrations. Vibrations could occur due to rock drilling and deep rock blasting activities, and from tunnel boring machine (TBMs). There is vibration-sensitive equipment associated with the numerous schools situated along Goulden Avenue located to the east of the Reservoir. There would be no surface drilling or blasting in relation to work at the Reservoir. Rather, rock removal activities would be done underground as the tunnel is cut from the water treatment plant (Mosholu and Harlem River Site alternatives) or the NCA (Eastview Site alternative) toward the New Shaft Chamber. As such, there would not be noise, flyrock, or dust associated with this work. Slow turning tunnel boring machines are very effective at minimizing and managing vibrations, and the NYCDEP's experience with many miles of water tunnel construction indicates that this activity can be conducted beneath residences, businesses, and sensitive uses without any awareness of the work going on below. Vibrations from these activities, however, if not properly, managed have the potential to affect sensitive equipment in the vicinity, therefore vibration monitoring would take place during the tunneling activity.

**Tunnel Boring Machines (TBMs).** Vibrations from advancing TBMs may affect sensitive electronic equipment. The tunneling subcontractor would develop a vibrations monitoring program during the engineering phase of the project. Prior to any boring activities, the location of the bore path would be reviewed to identify any businesses, hospitals, residences, or other facilities located in the vicinity of the planned boring. Soil conditions, structural conditions of neighboring buildings, and sensitive uses will be identified. Although TBMs have been used on a number of projects within the City of New York and vibration has seldom caused any impacts during these operations, any potential impacts on people or property due to vibration would be addressed for the proposed project. The impact of the vibrations would be reduced to levels permitted by applicable local, state, and federal regulations and codes.