

A. INTRODUCTION

This chapter outlines the various infrastructure and utility systems and their capacities that would be required to serve the proposed school. The relevant topics include water supply, stormwater removal, and sanitary sewage and solid waste disposal. Generation rates used to estimate the demand generated by the Adams Street School Facility for these resources are the accepted rates contained in the *City Environmental Quality Review (CEQR) Technical Manual*.

B. EXISTING CONDITIONS**WATER SUPPLY**

New York City's water supply system is composed of three watersheds—Croton, Delaware, and Catskill—and extends as far north as the Catskill Mountains, delivering approximately 1.2 billion gallons of water per day to the five boroughs and Westchester County. From these watersheds, water is carried to the City via a conveyance system composed of reservoirs, aqueducts, and tunnels extending as far as 125 miles north of the City. Within the City, a grid of water pipes distributes water to customers. The Croton system supplies water primarily to users in the lower elevation portions of Manhattan and the Bronx. This system does not normally supply water to Brooklyn. The Delaware and Catskill systems supply all five boroughs and typically deliver about 90 percent of the City's drinking water. The Delaware and Catskills water systems collect water from watershed areas in the Catskill Mountains and deliver it to the Kensico Reservoir in Westchester County. This reservoir acts as the seasonally balancing reservoir. From Kensico Reservoir, water is sent to the Hillview Reservoir in Yonkers, which balances the daily fluctuations in water use. From there, water is delivered to the City through three tunnels, Tunnel Nos. 1, 2, and 3. Tunnel No. 1 carries water through the Bronx and Manhattan to Brooklyn; Tunnel No. 2 travels through the Bronx, Queens, Brooklyn, and then through the Richmond Tunnel to Staten Island; and Tunnel No. 3 goes through the Bronx and Manhattan, terminating in Queens. An extension of Tunnel No. 3 is currently being built in Queens and Brooklyn. Tunnel No. 2 services the project site as well as the rest of Downtown Brooklyn.

Water consumption in New York City as a whole averages approximately 1.2 billion gallons per day (gpd), but can reach up to 1.5 billion gpd during the summer months.

According to the New York City Department of Environmental Protection (NYCDEP), there are currently no problems with the water distribution system's capacity, coverage, or pressure in the area.¹

¹ *Downtown Brooklyn Development FEIS*. 2004.

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As discussed in Chapter 1, “Project Description,” the project site is currently occupied by vacant building; therefore it has no water demands.

SANITARY SEWAGE AND STORMWATER

The project site is located in the service area of the Red Hook Water Pollution Control Plant (WPCP) located along the Brooklyn waterfront just north and west of the project area. This plant provides full secondary physical and biological treatment of sanitary sewage so that it can be discharged into the City’s waterways without adversely affecting water quality. Secondary treatment requires the removal of at least 85 percent of the total dissolved solids and biochemical oxygen demand in the influent. In addition, the effluent is treated with chlorine to kill pathogens. Effluent from the Red Hook WPCP is discharged into the East River. Discharges from the WPCP are regulated by a State Pollutant Discharge Elimination System (SPDES) permit issued by the New York State Department of Environmental Conservation (NYSDEC).

For the Red Hook WPCP, the SPDES permit allows an inflow of 60 mgd. During the past 12 months for which there is data available (March, 2006) the Red Hook WPCP had an average dry weather flow of 32 mgd, which is below the SPDES permit allowable limit.

Downtown Brooklyn is served by combined sewers that collect stormwater runoff (from roof and street drainage) and sanitary sewage. In dry weather, the sewer lines convey only sanitary sewage and carry it to the Red Hook WPCP. However, during and immediately after precipitation, such as rain and snow, the sewer lines convey both sanitary sewage and stormwater. When large volumes of stormwater exceed the capacity of the Red Hook WPCP, the combined sewage is permitted to overflow into the East River without treatment at controlled points known as regulators.

Combined sewers are located along Adams and Johnson Streets for both stormwater and sanitary sewage discharged from the project site. Because the site is occupied by a vacant building, it does not generate sanitary sewage.

ENERGY

Consolidated Edison (Con Edison) provides energy to the site. Because the building occupying the site is vacant, it has no energy demands.

SOLID WASTE

In New York City, solid waste from commercial and manufacturing uses is collected by private carters, while residential and institutional refuse is collected by the New York City Department of Sanitation (DOS). Commercial solid waste is typically hauled to out-of-city landfills. Residential and institutional waste collected by DOS was formerly disposed of at Fresh Kills Landfill, which stopped receiving solid waste as of March 22, 2001. DOS now collects solid waste, delivers it to transfer stations, and from there private carters take it to facilities generally located in Virginia, Ohio, and Pennsylvania. The municipal waste system handles approximately 13,000 tons per day, and private carters handle approximately 13,000 per day. Currently, there is no solid waste generated at the project site.

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

WATER SUPPLY

Water demand in the area would be expected to increase as a result of the nearby Marriott Hotel expansion; however, this increase is not anticipated to significantly affect the water supply system. The effects of city-wide water conservation measures, such as low-flow fixtures and metering, are expected to keep any growth in water demand to a minimum. No major changes to the water distribution system are planned by the City in the project area.

SANITARY SEWAGE

No changes are proposed for the existing sewer system within the project area, according to the New York City Department of Environmental Protection (DEP). The sewer mains that currently serve the area will continue to transport sanitary sewage to the Red Hook WPCP for treatment. In the future without the project, the existing building will remain empty, and therefore no additional sewage will be generated. In addition, New York City regulations require all new construction and substantial renovation projects to incorporate low-flow fixtures for water conservation purposes. The City also has an active program to meter the water usage of all buildings, a measure that will ultimately serve to reduce wastewater flows. Taking into account savings from these water conservation measures and increases from the Marriott expansion, the flows to the Red Hook WPCP will be nearly the same as under existing conditions. This is well below the amount permitted.

STORMWATER

Without the proposed project, current runoff patterns at the project site are not expected to change.

SOLID WASTE

Although no change is expected on the project site in the future without the proposed project, the amount of solid waste generated in the area around the project site is generally expected to increase as a result of incidental growth in the area. As a commercial use, the Marriott expansion will not affect the municipal waste stream. It is assumed that DOS will continue to collect solid waste, deliver it to transfer stations, and from there private carters would take it to facilities outside of New York City. The City's recycling program will continue in the future.

ENERGY

In the future without the project, the building is expected to remain vacant and therefore, no new demand for energy is anticipated.

D. PROBABLE IMPACTS OF THE PROPOSED PROJECT

WATER SUPPLY

Using the estimated rates of use provided in the *CEQR Technical Manual*, the proposed school facility would use an average of 32,250 gallons per day (gpd) based on 30 gpd per seat, and another 14,150 gpd for air conditioning during warm weather. The school's water usage would

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not be expected to noticeably affect municipal water supply conditions or reduce water pressure in the surrounding area.

SANITARY SEWAGE

The proposed facility would connect to existing city sewers adjacent to the site on Adams or Johnson Streets. The proposed Adams Street School's sewage generation, conservatively assumed to be equal to water use, would average 32,250 gpd. The sanitary flow from the site would be conveyed to the combined sewer system on nearby streets. Since the lowest floors of the proposed buildings would be below street level, ejector and sump pumps would be required. The sanitary sewage would be transported to the Red Hook WPCP. The sewage flow would represent a minimal percent of the WPCP's capacity of 60 million gallons per day. The Red Hook plant has sufficient excess capacity to handle this additional flow.

STORMWATER

Flat roof areas would be utilized for storm water retention prior to discharge into the combined sewer on Adams or Johnson Streets. Stormwater from the paved areas would also drain into the combined sewer.

SOLID WASTE

Using a solid waste generation rate of 2 pounds per week per student, the proposed school would be expected to generate fewer than 2,150 pounds of solid waste per week during the school year. To comply with the city's recycling plan, the proposed school would be required to accommodate the source separation of recyclable materials. Disposable wastes and recyclable materials would be collected by DOS. The school-generated waste would be negligible compared with the 13,000 tons per day handled by DOS and would represent less than 1 percent of the total volume of solid waste that is currently handled by DOS. Overall, solid waste generated by the proposed school would not have a significant effect on New York City's solid waste disposal system nor would it affect its Solid Waste Management Plan.

ENERGY

It is anticipated that added electrical demand would be minimal and would require no special appurtenances. Con Edison would be able to meet this demand. *