Water and Sewer Infrastructure

Chapter 13

Infrastructure comprises the physical systems that support populations and include structures such as water mains and sewers, bridges and tunnels, roadways, and electrical substations. Because these are static structures, they have defined capacities that may be affected by growth in a particular area. This chapter addresses how projects may affect the City's water and sewer infrastructure; other types of infrastructure are addressed in other Manual chapters.

The purpose of this chapter is to assess whether projects undergoing review may adversely affect the City's water distribution or sewer system and, if so, assess the effects of such projects to determine whether their impact is significant. Potential mitigation strategies and alternatives are also presented in this chapter for use when significant adverse impacts are identified.

New York City's water and sewer network is fundamental to the operation, health, safety, and quality of life of the City and its surrounding environment, and it must be sized to fit the users and surface conditions in order to function adequately. Ensuring these systems have adequate capacity to accommodate land use or density changes and new development is critical to avoid environmental and health problems such as sewer back-ups, street flooding, or pressure reductions. To avoid these problems, areas of the City that lack sufficient water or sewer capacity need infrastructure improvements. In addition, many regulations have been imposed on the City since the system was designed (including multiple Consent Orders by the State regulating the discharge of pollutants to ensure compliance with the Federal Clean Water Act) that pose new challenges for meeting water quality and combined sewer overflow (CSO) standards, especially as the population being served by the sewers increases. Thus, the City has a mandate to provide sufficient service to the community and meet increasingly stringent State and Federal requirements for improved water quality standards.

Generally, only projects that increase density or change drainage conditions on a large site require an infrastructure analysis. In addition to water supply, conveyance, and waste water treatment plant (WWTP) assessments, stormwater management is an integral component of an infrastructure analysis due to potential environmental impacts related to how much the built sewer and conveyance system can handle, and related effects such as street flooding, surcharging sewers downstream, sewer back-ups (SBUs), increases in CSOs, and pollutant loadings contained in CSOs or direct stormwater discharges to the City's surrounding waterbodies. Stormwater drainage is also a central element of the natural resources analysis described in Chapter 11, "Natural Resources," since stormwater is a substantial contributor of water to natural systems such as wetlands and adjacent waterbodies. Disruption of water and sewer services during construction should be addressed in Chapter 22, "Construction."

Section 200 of this chapter provides criteria to help determine which projects need an infrastructure analysis. For those projects requiring analysis, section 300 describes how to assess a project's potential for impacts on infrastructure. Section 400 provides guidance on whether the results of the infrastructure analysis identify a significant impact requiring mitigation. Sections 500 and 600 guide the applicant and lead agency in developing mitigation or alternatives, and Section 700 lists applicable regulations and standards.

As mentioned throughout the Manual, it is important for an applicant to work closely with the lead agency throughout the environmental review process. In addition, the New York City Department of Environmental Protection (DEP), the City's expert agency with regard to water and sewer infrastructure, often works with the lead agency during the CEQR process to provide information, technical review, recommendations, and approvals relating to infrastructure. As needed, it is recommended that the lead agency contact DEP's Bureau of Environmental Planning and Analysis (BEPA) as

early as possible in the environmental review process. BEPA will serve as DEP's contact for information, questions, and assistance with the technical methodologies and conclusions in this chapter. Section 700 further outlines appropriate coordination with both DEP and other expert agencies.

100. DEFINITIONS

110. WATER SUPPLY

111. New York City Water Supply System

Most of New York City obtains water from three surface water supply systems, operated by DEP, that form a network of reservoirs, aqueducts, and tunnels extending as far as 125 miles north of the City. The watersheds of the three systems cover almost 2,000 square miles, with 19 reservoirs and three controlled lakes, which have a storage capacity of 550 billion gallons. The water flows to the City through aqueducts, reaching most consumers by gravity alone; only some four percent of the City's water must be pumped to its final destination.

Two of the three surface water systems, the Delaware and Catskill systems, collect water from watershed areas in the Catskill Mountains and deliver it to the Hillview Reservoir in Yonkers. From there, it is distributed to the City through three tunnels, City Tunnel No. 1, which goes through the Bronx and Manhattan to Brooklyn; City Tunnel No. 2, which goes through the Bronx, Queens, and Brooklyn (and from there through the Richmond Tunnel to Staten Island); and City Tunnel No. 3 (Stage 1), which goes through the Bronx and Manhattan, and ends in Queens. Stage 2 of City Tunnel No. 3 is under construction in Queens, Brooklyn, and Manhattan.

The third surface water system, the Croton system, collects water from watershed areas in Dutchess, Putnam, and Westchester Counties and delivers it to the Jerome Park Reservoir in the Bronx. From there, it is distributed to the Bronx and Manhattan through the New Croton Aqueduct.

Within the City, a grid of underground distribution mains brings water to consumers. Large mains—up to 96 inches in diameter—feed smaller mains, such as 20, 12 and 8-inch mains, that distribute water to individual locations. These mains also provide water to fire hydrants along many of the City's streets. Water pressure throughout the City water supply system is controlled by pressure regulators.

In addition to the surface water supply system, underground aquifers in Queens can provide drinking water.

120. WASTEWATER AND STORMWATER CONVEYANCE AND TREATMENT

New York City's sewer system consists of a grid of sewers beneath the streets that send wastewater flows to fourteen different WWTPs. The area served by each plant is called a "drainage area." Most of this system is a "combined" sewer system that carries both sanitary sewage from buildings and stormwater collected from buildings, catch basins, and storm drains. However, some areas of the City, primarily in Queens and Staten Island, operate with separate systems for sanitary sewage and stormwater. In addition, small areas of Staten Island, Brooklyn, and Queens use septic systems to dispose of sanitary sewage.

The City maintains a "drainage plan" for the proper sewer and drainage in the City that describes the location, course, size, and grade of each sewer and drain for sewerage districts as well as the size and location of stormwater and wastewater conveyance and treatment facilities within these districts.

121. Sanitary and Stormwater Drainage and Management

Sewers beneath the City's streets collect sewage from buildings as well as stormwater from buildings and catch basins in streets. Collection sewers can be ten inches to two feet in diameter on side streets, and larger in diameter under other roadways. They connect to trunk sewers, generally five to seven feet in diameter, which bring the sewage to interceptor sewers. These large interceptor sewers (often 11 or 12 feet in diameter) bring the wastewater collected from the various smaller mains to the WWTPs for treatment.

121.1. Combined Sewer Systems

About 50 percent of the City's land area is served by a combined sewer system which collects both "dry-weather" wastewater (primarily sanitary sewage as well as wastewater from industries) and stormwater (see attached map). During dry weather, combined sewers function as sanitary sewers, conveying all flows to the WWTPs for treatment. During wet weather, however, large volumes of rainfall runoff can enter the system from building connections and through catch basins along the City's streets. If this water were conveyed to the treatment plants, it would exceed their design capacity; the plants are designed to handle only twice their average design dry-weather flow. To avoid flooding the plants, "regulators" are built into the combined sewers to act as relief valves. These are chambers set to divert two times the average design dry-weather flow into the interceptor; during storms, if a greater amount of combined flow reaches the regulator, the excess is directed to outfalls into the nearest waterway (*e.g.*, the Hudson River, East River). During such overflow periods, a portion of the sanitary sewage entering, or already in, the combined sewers discharges untreated into the waterway along with stormwater and debris washed from streets. This untreated overflow is known as CSO.

CSO is a concern because it may contain oil, gasoline, and other pollutants from street traffic; floating debris (also called "floatables," and usually consisting primarily of street litter); various pollutants from industrial facilities (both pollutants discharged into the sewer system and pollutants in the runoff from these facilities); and untreated sanitary sewage.

121.2. Separate Systems

Certain areas of the City are served by separate storm and sanitary sewers. In these areas, sanitary sewage is sent to the wastewater treatment plants and stormwater is sent untreated through separate sewers and outfalls into the nearest waterway. Areas served by separate sewers include certain areas in Queens and Staten Island (see attached map).

121.3. Stormwater Management

On undeveloped sites with land in its natural condition, rainfall is normally absorbed into the ground through permeable surfaces. In urban settings, however, where permeable surfaces are less common, it typically flows across land ("sheet flows") toward low points such as water bodies or storm sewers. The storm sewers direct this stormwater through underground pipes to an outfall that discharges into a waterway. As described above, in New York City, these can be either combined or separate systems. Generally, stormwater flows in separately sewered and waterfront areas are discharged to the waterway without treatment; stormwater flows in a combined sewered area are treated at the City's WWTPs, except during wet weather periods where resulting combined flows are greater than two times the average design dry-weather flow (resulting in CSOs).

Stormwater is of concern if it exceeds the capacity of the City's sewers or wastewater conveyance systems and transmits new or increased levels of pollutants to the City's water bodies. This is an issue for developments that would increase residential densities and reduce capacity for stormwater in a combined sewer system; industrial facilities with toxic or other harmful materials stored or handled onsite; development sites that would be covered with large areas of impervious surfaces including streets that generate runoff containing various pollutants (oil, gasoline, floatables, *etc.*); and project activities or construction that would increase the potential for soil erosion and sedimentation of water bodies Citywide. If appropriate stormwater management measures are not implemented, proposed projects that increase runoff to the City's sewer system may potentially worsen existing conditions such as localized street flooding, surcharging sewers downstream, sewer back-ups (SBUs), or CSOs in surrounding waterbodies, all of which are public health and natural resources concerns.

As described in the *NYC Green Infrastructure Plan, PlaNYC* and the Mayor's *Sustainable Stormwater Management Plan*, a network of stormwater best management practices (BMPs) or source controls,

has the potential to significantly reduce pollution through incremental investments made over the next twenty years and beyond. Promising BMPs identified for application in the City include blue and green roofs, subsurface open bottom detention systems that allow for infiltration while slowing the release of stormwater to the sewer system, roadway alterations that allow runoff to soak or infiltrate into the ground, and rain barrels or cisterns that can store water from downspouts during warm weather months. Stormwater capture through green infrastructure and other source controls will reduce CSO volumes and improve water quality while providing substantial sustainability benefits such as reducing energy use and mitigating the urban heat island effect.

122. Collection Facilities

122.1. Regulators

Regulators direct stormwater and wastewater to interceptors and then to combined sewer outfalls once the system reaches its capacity during heavy rainfall or other wet weather events. There are approximately 490 regulators in New York City.

122.2. Interceptors

Interceptors are large sewers that connect the sewer system via regulators to treatment plants and are built to deliver at least two times design dry weather flow to WWTPs.

122.3. Pumping Stations

Pumping stations direct combined and separate flows to downstream locations in the City's sewer infrastructure when gravity cannot direct the flow. There are approximately 90 pumping stations Citywide. While most pumping stations are designed to convey sanitary sewage to interceptor sewers, many also convey combined or separate stormwater. Along with regulators and interceptors, pumping stations control the amount of flow that a WWTP receives and how much is discharged through a combined sewer outfall.

123. Connecting to the City's Sewer System

Connecting to the City's sewer system requires certification from DEP as part of the building permit process. This approval is not a discretionary action subject to environmental review. In this process, before a building permit may be issued, house or site connection proposals must be certified for sewer availability by DEP. Once construction is complete, a sewer connection permit also must be obtained from DEP. See Title 15 RCNY Chapter 31, N.Y.C. Admin. Code § 24-501–09, and N.Y.C. Construction Code 28-701 for further guidance.

New development sewer certification review ensures that sufficient capacity exists in both the sewer fronting the lot of the proposed new development or alteration as well as in downstream sewers to accommodate additional discharges from new development. If adequate capacity is not available, infrastructure improvements, sewer extensions, or onsite detention/retention systems that offset increased sanitary or stormwater flows may be required before sewer connections can be approved. It is advisable that applicants coordinate with DEP's BEPA as early as possible to determine capacity and potential improvements, as well as certification/connection requirements.

The construction of new sewers and/or other infrastructure improvements may require an amendment to the City's drainage plan. An amended drainage plan (ADP) is a plan for the design and construction of new sewers; it shows general alignments of new pipes and their types and sizes. The development of an ADP is based on zoning designations, topography, current drainage, and existing sewer system capacity in the affected area and requires extensive coordination with DEP, who must review and approve the ADP. Certain larger projects often lead to ADPs due to changes in zoning designations and related densities, or variances from existing zoning requirements. Due to the length of time involved in the ADP development process and sewer construction, if an ADP would likely be needed, it is recommended that the applicant coordinate with DEP to identify infrastructure improvements as early as possible.

124. Wastewater Treatment Plants

124.1. Sanitary Sewage Treatment

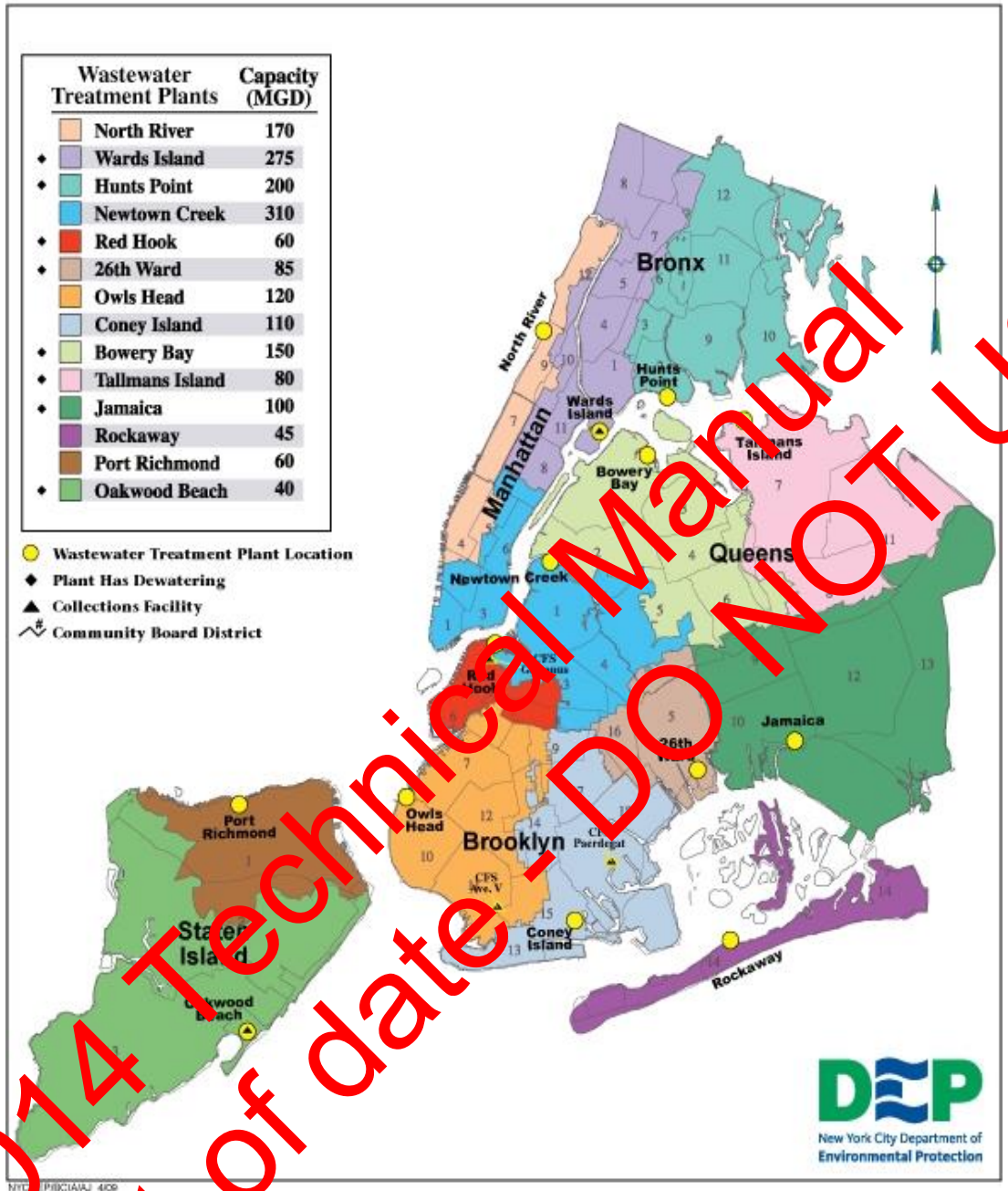
New York City's sewage is treated at fourteen (14) WWTPs, which are listed in Figure 13-1 along with a graphic depicting their respective drainage areas. Together, these plants treat, on average, 1.2 billion gallons of sewage per day.

WWTPs treat wastewater through a variety of physical and biological processes that remove solids so the water can be discharged into surface water bodies without adversely affecting water quality. This treated wastewater discharge is called "effluent." The major processes used in the City's WWTPs are:

- Mechanical and physical removal of trash, grit, scum, and sludge (this is "preliminary" or "primary" treatment);
- Biological treatment of remaining sewage ("secondary" treatment);
- Concentration, biological decomposition through anaerobic digestion with energy recovery, and disposal of sludge; and
- Disinfection of liquid effluent.

Each of the City's WWTPs is regulated through a State Pollutant Discharge Elimination System (SPDES) permit issued by the New York State Department of Environmental Conservation (NYSDEC) to ensure that water quality in the receiving water body is not adversely affected by WWTP effluent. The permits specify the maximum average monthly dry-weather flow in millions of gallons per day (MGD) (based on the quantity of wastewater that the plants can adequately treat), and such effluent parameters as (i) the minimum percent (85 percent) of biological oxygen demand (BOD) that must be removed (BOD, a measure of the amount of oxygen consumed in decomposition of organic matter, is an indicator of the quantity of organic pollution in wastewater); (ii) the minimum percent of suspended solid loading that must be removed (also 85 percent); (iii) the maximum concentrations of suspended solids, fecal coliform, settleable solids, and other pollutants; and (iv) the range of acceptable pH levels. The permits also stipulate monitoring requirements for the regulated parameters, as well as for odor control, and require infiltration/inflow assessments and correction programs if the plants reach a certain percent of their permitted capacity. The permitted capacity of each of the City's wastewater treatment plants is shown in Figure 13-1.

Figure 13-1
NEW YORK CITY DRAINAGE AREAS AND WASTEWATER TREATMENT PLANTS



124.2. Industrial Pretreatment

In addition to the parameters described above, the City accepts industrial discharge into the sewer system if it complies, or has been treated to comply, with certain standards. This additional treatment is required to protect health, the environment, the sewers, and WWTPs from toxic and hazardous discharges. The City's Industrial Pretreatment Program identifies and monitors industrial users that discharge pollutants of concern into the sewer system and is administered by DEP's Bureau of Wastewater Treatment. The Division of Pollution Control and Monitoring uses permits and directives, which are similar to discharge permits, to notify each industrial user of its discharge requirements. The directives summarize the Industrial Pretreatment Program's legal authority (see Section 710) and monitoring and inspection requirements, and list discharge limits that each of the identified industries must meet.

125. Septic Systems

The southwestern part of Staten Island and parts of Queens and Brooklyn use septic systems to dispose of sanitary sewage, until such time as the City's sanitary sewer system can be extended. Septic systems consist of underground tanks that retain sewage for decomposition and surrounding soils that filter the wastewater once it is released from the tank. In the septic tank, the solids in the sewage settle to the bottom, and the liquid undergoes some anaerobic decomposition before being discharged through perforations into the surrounding soils, which are specially prepared, absorbent soils, generally termed "filter fields." Here, the discharge undergoes additional treatment, where it is strained and absorbed by the soils, and microbial organisms in the soil convert it into minerals, gases, and nutrients.

If an applicant proposes to manage sanitary sewage with a septic system, it must be demonstrated that it is not feasible to connect to an existing sanitary or combined sewer or interceptor, either by extending the sewer or constructing a pumping station, ejector, or force main. A septic system would not be the appropriate wastewater disposal system for the proposed project if this infeasibility cannot be demonstrated and the applicant must conduct an infrastructure analysis (see Section 200, below). If a septic system is determined to be appropriate, the design, construction, operation, and maintenance of the system are subject to approval by the New York City Department of Buildings (DOB) and the New York State Department of Health (NYSDOH), and further CEQR analysis is not required. In addition, a community subdivision realty development involving 15 or more dwellings requires a community private sewage disposal system permit from the New York City Department of Health and Mental Hygiene (DOHMH). A septic system that processes more than 1,000 gallons of wastewater per day, or is at an industrial or commercial site, requires a SPDES permit from DEC.

126. Privately Operated Treatment Plants, Pumping Stations and Blackwater Systems

Small, privately owned and operated sewage treatment plants and pumping stations serve only a local area. These facilities operate in much the same way as larger, municipal facilities, but with a smaller capacity and can be located on- or off-site. Privately owned and operated treatment plants may be constructed as "package treatment plants," and, as at municipal plants, the effluent from these plants is discharged to a nearby waterway, subject to the regulations of a SPDES permit. Privately owned and operated treatment plants are used in areas where City sewers and treatment by a municipal WWTP are not available. Privately-operated pumping stations are located in areas where sewage cannot be conveyed via gravity to interceptor sewers or wastewater treatment plants. Blackwater systems include facilities onsite or internal to the building that treat sanitary wastewater for reuse as non-potable water, and must be approved by DOB.

200. DETERMINING WHETHER AN INFRASTRUCTURE ASSESSMENT IS APPROPRIATE

The following types of projects require a preliminary infrastructure assessment, and, based on the conclusions of the preliminary assessment, may require a detailed infrastructure analysis (see Section 300, Preliminary Assessment Methods, for additional information).

210. WATER SUPPLY

A preliminary infrastructure analysis is needed if the project:

- Would result in an exceptionally large demand for water (*e.g.*, those that are projected to use more than one million gallons per day such as power plants, very large cooling systems, or large developments); or
- Is located in an area that experiences low water pressure (*e.g.* areas at the end of the water supply distribution system such as the Rockaway Peninsula and Coney Island).

If the project does not meet any of these thresholds, no further analysis of water supply is needed.

220. WASTEWATER AND STORMWATER CONVEYANCE AND TREATMENT

While many projects would not require CEQR analysis with regard to wastewater and stormwater conveyance and treatment, certain projects are of a size, location, and type where the potential for significant adverse impacts to the City's infrastructure and water quality may exist. Because the City's sewers are sized and designed based on designated zoning for an area, related population density, and surface coverage characteristics, projects that greatly increase density, would be located in an area of concern (described below), or would substantially increase impervious surfaces, merit further analysis for potential impacts to the City's wastewater and stormwater infrastructure. If analyses indicate the project would increase flows of sanitary and stormwater, overburden the wastewater or stormwater infrastructure, or create the potential to result in additional CSO volumes or events, changes to the affected sewer system and/or the preparation of an ADP to address such modifications may be needed. DEP should be consulted early during the conceptual stage to determine whether a project that exceeds the following thresholds would potentially require an ADP.

The sewer connection permitting process and the CEQR process are separate. As discussed in Subsection 123, above, a DEP sewer connection permit is issued based on the availability of the affected sewer system at the time of the building permit process, not on the capacity of the sewer system analyzed during the environmental review, which is conducted much earlier than the building permit process. To determine the potential for significant adverse impacts under CEQR, however, certain project's daily sanitary sewage generation and stormwater runoff, as well as the sensitivity of the project area's existing infrastructure, should be disclosed. This also encourages more efficient review of sewer connections at the time of application. In addition, given the lead time for the design of sewers and other conveyance infrastructure, DEP should be consulted to determine when any such projects are scheduled for the affected area.

During the sewer connection permitting process, if capacity is determined to be inadequate for any development, it is possible that connection to the sewer system may require detention or sewer extensions, or in some more limited instances may not be approved, regardless of the results of a review under CEQR. By its nature, CEQR review is a conceptual and predictive look into the future and, therefore, applicants should not construe the conclusions made under CEQR as conclusive with regard to the need for sewer drainage analysis, planning, and permits in the future. For this reason, applicants should work with DEP as early as possible to determine whether site plan modifications or sewer extensions/improvements may be required as a condition to granting the sewer connection permit.

The thresholds below relate to a project's potential to result in a significant adverse impact to the environment. A preliminary infrastructure analysis would be needed if the project:

- Is located in a combined sewer area and would exceed the following incremental development of residential units or commercial, public facility, and institution and/or community facility space above the predicted No-Action scenario:
    - 1,000 residential units or 250,000 sq. ft. of commercial, public facility, and institution and/or community facility space or more in Manhattan; or,
    - 400 residential units or 150,000 sq. ft. of commercial, public facility, and institution and/or community facility space or more in the Bronx, Brooklyn, Staten Island, or Queens.
- Is located in a separately sewered area and would exceed the following incremental development (above the predicted No-Action scenario) of residential units or commercial, public facility, and institution and/or community facility space per site. The site's existing zoning designation below indicates the level of development needed on that site to warrant analysis:

Table 13-1

Existing Zoning District	Number of Residential Units or Commercial/Public and Institution/Community Facility Use
R1, R2, or R3	25 residential units or 50,000 sq. ft. of commercial/public and institution/community facility use
R4, R5	50 residential units or 100,000 sq. ft. of commercial/public and institution/community facility use
All remaining zoning designations, including C, M, and Mixed-use districts	100 residential units or 100,000 sq. ft. of commercial/public and institution/community facility use

- Is located in an area that is partially sewered or currently unsewered.

  Unsewered areas are identified in the attached map; DEP should be contacted for assistance in determining partially sewered or other constrained areas of concern. Applicants should identify the appropriate method of storm and sanitary flow drainage and management and consult with DEP during the CEQR review process or earlier. If the applicant demonstrates that it is not feasible to connect the proposed site to an existing sanitary or combined sewer or interceptor, either by extending the sewer or constructing a pumping station, ejector, or force main, and that it is feasible to construct, operate, and maintain a septic system on the specific proposed site, then no further analysis is needed. If the applicant cannot demonstrate this infeasibility, a septic system would not be the appropriate wastewater disposal system for the proposed project, and the applicant must conduct the infrastructure analysis.
- Involves development on a site five acres or larger where the amount of impervious surface would increase. Examples of projects requiring analysis under this scenario include, but are not necessarily limited to, ball-grounds, parking lots, and warehouse buildings.
- Would involve development on a site one acre or larger where the amount of impervious surface would increase and one of the following would apply:
    - Located within the Jamaica Bay watershed; or
    - Located in certain specific drainage areas including: Bronx River, Coney Island Creek, Flushing Bay and Creek, Gowanus Canal, Hutchinson River, Newtown Creek, and Westchester Creek.

- Would involve construction of a new stormwater outfall that requires federal and/or state permits (see also Chapter 11, "Natural Resources," for additional information).

230. INDUSTRIAL FACILITIES

Certain industrial facilities would be subject to the City's Industrial Pretreatment Program, which regulates discharge from "Significant Industrial Users" (SIUs) to control the introduction of toxic or other harmful substances into public sewers that are tributary to WWTPs. A facility is a SIU if it meets any of the criteria specified in the Code of Federal Regulations (40 CFR 403.3(v)). SIUs that discharge to a WWTP are required to obtain a NYCDEP permit for Industrial Wastewater Discharge (as described in Title 15 RCNY Chapter 19). It should be noted that all facilities, whether permitted significant industrial users or not, must be in compliance with the City sewer use regulations contained in 15 RCNY Chapter 19

Federal industrial pretreatment categories are found at the following links:

- http://www.gpo.gov/fdsys/pkg/CFR-2010-title40-vol28/pdf/CFR-2010-title40-vol28-chapI-subchapN.pdf
- http://www.gpo.gov/fdsys/pkg/CFR-2010-title40-vol29/pdf/CFR-2010-title40-vol29-chapI-subchapN.pdf

Generally, if such industrial facilities that discharge to a WWTP comply with the City's Industrial Pretreatment Program, no significant impacts would occur. Facilities that discharge process wastewater directly to a waterbody must obtain a NYSDEC SPDES permit and require an assessment of program compliance. Additionally, in separately-sewered areas of the City, activities that take place at industrial facilities, such as material handling and storage, are often exposed to stormwater runoff. As runoff comes into contact with these activities, it can transport pollutants to a nearby storm sewer system or directly to a river, lake, or coastal water. To minimize the impact of stormwater discharges from industrial facilities, federal regulations, in 40 CFR 122.26(b)(14)(i)-(xi), identify 11 categories of stormwater discharges associated with industrial activity required to be covered under a stormwater permit. This requirement includes development and implementation of a Stormwater Pollution Prevention Plan (SWPPP).

For disclosure purposes, it is often appropriate for a project proposing an industrial facility or activity that would contribute industrial discharges to a WWTP and/or generate contaminated stormwater in a separate storm sewer system to disclose the manner in which it proposes to comply with the City's Industrial Pretreatment Program.

300. PRELIMINARY ASSESSMENT METHODS

If Section 200 indicates that the project requires further analysis, the preliminary infrastructure assessment should be conducted. Based on the results of this preliminary assessment, a detailed assessment may be required (see Section 330). The first step in any analysis is establishing the relevant study area.

310. STUDY AREA

311. Water Supply

The study area for analysis of water supply effects is the project site itself as well as the extent of the system it may affect--this is usually the area supplied by water pressure regulators that serve the project site. In some cases, the affected area is supplied by unregulated connections (or smaller sized connections without pressure regulators) to water trunk mains. There are also several high elevation areas where the affected area is supplied by a water pumping station. Therefore, in order to determine the appropriate study area:

- Identify the primary pressure regulators that would serve the site;
- Identify the primary unregulated connections, if any, that would serve the site; and

- Identify the pumping station, if any, and related gradient zone that would serve the site.

The study area is then defined on a map by connecting these locations around the project site. If necessary, the lead agency may contact DEP's BEPA for this information.

312. Wastewater and Stormwater Conveyance and Treatment

The analysis of sewage typically focuses on the effects of increased sanitary and stormwater flows on the City's infrastructure serving the site. Therefore, the study area includes the WWTP and the conveyance system comprising that plant's drainage basin and affected sewer system (whether combined or separate). Therefore, in order to determine the appropriate study area:

- Identify the wastewater treatment plant(s) that would serve the site;
- Identify affected components of the downstream collection system, including pumping stations, regulators and interceptors;
- If the area of the proposed project is currently served by a combined sewer system, describe and show on a map the affected combined sewer system, including affected drainage or catchment areas, outfalls, and receiving waterbodies;
- If the area of the proposed project is currently served by a separate sewer system, describe and show on a map the affected sanitary sewer system. For the storm sewer system, describe and show on a map the affected drainage or catchment area, outfalls, and receiving waterbodies;
- Delineate the drainage area for direct discharges and overland flow to surface water bodies;
- Identify existing or new inlets (*e.g.*, catch basins) and stormwater BMPs that would serve the site; and
- Describe proposed alternative disposal methods, including privately operated sewage treatment plants or private pumping stations that would be included as part of the proposed project, and identify the affected area immediately surrounding the system, or wastewater treatment plants, collections systems, and waterbodies receiving effluent from private treatment plants.

Plot the above information on a map to delineate the study area by component. If necessary, the lead agency may contact DEP's BEPA for this information.

320. PRELIMINARY ANALYSIS TECHNIQUES

321. Water Supply

After the study area is determined, the assessment of effects on water supply and water pressure should be performed as follows:

- Describe the existing water distribution system serving the project area, including weaknesses in the local water supply distribution systems, such as sites in high elevations; near pressure boundaries; with a one-way flow of water; far from the nearest pressure regulator; far from the nearest trunk main; or that contain a large number of six inch (or smaller) water mains, based on information obtained from DEP.
- Describe specific elements of the proposed project that would affect the water distribution system such as proposed grade changes that would require water main replacements, street de-mappings that would require water mains to be cut and capped, or street realignments that would require water mains to be relocated.
- Assess existing water use on the project site.
- Using Table 13-2, assess the likely water usage on the project site for the future No-Action Scenario (existing water use on the project site + background growth + No-Action projects, such as anticipated

water demand from other recent rezonings or large developments within the same affected water distribution system, to identify impacts on water supply and pressure) and describe the effects on the existing distribution system:

  - Would the existing system have sufficient capacity for the projected growth associated with the No-Action Scenario?
  - Is extra capacity is available and how much?
  - If over capacity, are measures being taken to ensure the No-Action Scenario can be accommodated?

- Using Table 13-2, predict the proposed project's daily water demand based on the uses expected in the future With-Action Scenario. Water usage for industries depends on the manufacturing processes involved, and should be documented. For less common uses not included in Table 13-2, consult with DEP for appropriate usage rates. Water conservation measures to be implemented as part of the proposed project should also be described. A separate projection in addition to the above may be performed if flows would be lowered through water conservation or other measures, where a mechanism for implementation exists that would allow for commitment to measures that go beyond City rules and regulations.
- Assess the effects of the proposed project's incremental demand above the future No-Action Scenario on the system and determine if there would be sufficient capacity to maintain adequate supply and pressure. This analysis, which considers the pipe sizes and grid of the water system to determine water pressure loss, is usually performed by an engineer. Where the adequacy of the water supply distribution system is in question, a hydrant flow test may be needed in conjunction with an assessment of the impact on water pressure and supply. The lead agency may contact DEP's BEPA for general assistance. The engineer's assessment to determine the adequacy of the water supply distribution system should be forwarded to DEP for review.

Table 13-2
Water Usage and Sewage Generation Rates for Use in Impact Assessment

Use	Rate (Gallons Per Day)
Residential	100 gpd/person
Retail Stores	
Domestic	0.24 gpd/sf
Air Conditioning	0.17 gpd/sf
Commercial/Office	
Domestic	0.10 gpd/sf
Air Conditioning	0.17 gpd/sf
Hotel	
Domestic	120 gpd/rm/occupant
Air Conditioning	0.17 gpd/sf
Schools (day)	
Domestic	10 gpd/seat
Air Conditioning	0.17 gpd/sf

Note: These rates are for new uses incorporating low-flow fixtures, as required by law.

321.1. Ground Water Input

Issues related to a project's potential effects on quality of the ground water are discussed in Chapter 11, "Natural Resources."

322. Wastewater and Stormwater Conveyance and Treatment

322.1. City Wastewater Treatment Plants and Collection Facilities

- Describe the existing wastewater and stormwater conveyance systems and the WWTP in the study area (Subsection 312). Figure 13-1 shows each WWTP drainage basin and capacity.
- Using Table 13-2, determine the existing sanitary flows or treated wastewater flows resulting from the area of the proposed project.
- Estimate the expected sanitary flows or treated wastewater flows that the No-Action and With-Action Scenarios would generate, and describe the effect of the flows from the project on the total flows to the plant. The rates listed in Table 13-2 (excluding air conditioning rates) should be used to estimate daily sanitary sewage generation from both the proposed project and developments in the No-Action Scenario. SPDES flow and effluent parameters are used as the basis for assessing impacts on wastewater treatment plants. As part of this assessment, the lead agency should contact DEP's BEPA to obtain projected future flows in the build year, which include background growth in population and employment as well as new development in the WTTP drainage basin that would serve the project. Add the background future flows obtained from DEP and projected future No-Action Scenario development flows to determine the total No-Action Scenario flows in the drainage basin.
- Consider the effect of the incremental flows from the project on the capacity at the plant.
- Determine the existing capacity for sanitary and combined sewer pumping stations and regulators within each of the affected drainage or catchment areas. Compare the capacity with the projected flows to these facilities for the future No-Action and With-Action Scenarios. As part of this assessment, the lead agency should contact BEPA to obtain information from DEP's sewer maps about affected facilities and existing capacity for each. The assessment of potential impacts on pumping station and regulator capacity would require allocating the above total flows to the plant for existing conditions, No-Action Scenario, and With-Action Scenario for each pumping station and regulator drainage area affected.
- Consider the effect of the incremental flows from the project on the capacity of the conveyance elements.
- If a new, privately operated sewage treatment plant is proposed, include a description of the treatment plant's sizing and processes, as well as an assessment of potential environmental impacts on the waterbody to which the plant's effluent would be discharged, including whether the plant would affect its water quality. The methodology for assessing effects on water quality is described below in Section 330, "Detailed Analysis Techniques," and in Chapter 11, "Natural Resources." For projects that would affect existing private treatment plants with valid SPDES permits, the analysis typically focuses on whether the plant would have adequate capacity to treat the additional wastewater generated by the project. If a new, privately operated pumping station is proposed, an analysis demonstrating that the receiving collection system has adequate capacity should be provided.

322.2. Sanitary and Stormwater Drainage and Management

- Describe the types of existing surfaces onsite (*i.e.*, pervious or impervious) and the surface areas of each. Identify the appropriate runoff coefficient for each surface type/area, and identify the way the stormwater from each surface currently drains (combined sewer system,

separate sewers, direct discharge, overland flow, *etc.*). Present information in a table format. See Worksheet 1 in the attached matrix for guidance.

- Describe any changes to the above surfaces and drainage patterns that would result in both the future No-Action Scenario and the future With-Action Scenario. Present information in a table format. See Worksheet 1 in the attached matrix for guidance. Include a discussion of how stormwater would be managed on the site (retention, detention, *etc.*).

- Determine the volume and peak discharge rates of stormwater expected from the site in the future With-Action Scenario for a range of rainfall events (combine this number with sanitary flow rates and volume if located within a combined sewer system area to determine total flows resulting from proposed project). DEP provides a matrix that may be used as a template. See Worksheet 2 in the attached matrix for guidance. The matrix enables the applicant to determine the change in flows and volumes to the combined or separate storm sewer system expected with the proposed project and the related increases in flows and volumes at the outfalls serving the drainage area and discharging to specific waterbodies.

  The goal of the matrix is to determine new volumes entering the combined or separate sewer system and compare those to the existing conditions. If the matrix analysis shows either (1) an increase of 2 percent or more over existing conditions for dry and wet weather flows from the proposed site for any rainfall event that would discharge to a drainage area of concern (identified in the following maps of the Jamaica Bay watershed and certain drainage areas); or (2) an increase of 5 percent or more over existing conditions for dry and wet weather flows from the proposed project site for any rainfall event in all other drainage areas, then the matrix should be reviewed by DEP. DEP will work with the lead agency to determine whether further modeling is necessary to evaluate the magnitude of impacts to a receiving waterbody (see Section 320, "Detailed Analysis Techniques," below). If the matrix indicates the increase in dry and wet weather flows would not surpass these thresholds, no further analysis is needed. It should be noted that the need for further analysis is highly dependent on the location of the proposed project. As even a 5% increase in dry and wet weather flows may not necessitate detailed review.

  It should be noted that if BMPs approved by DEP and in compliance with DOB requirements, would be incorporated into the project, further analysis may not be required. Therefore, applicants are encouraged to incorporate BMPs into the project's site planning early on, whenever possible. Note that the NYSDEC SPDES permit for construction activities in separately sewered areas that disturb one acre of ground or more requires development and use of an SWPPP that includes erosion and sedimentation controls and post-construction stormwater BMPs. The SWPPP should be submitted to DEP.

- Characterize unsewered, partially sewered or existing sewer capacity constraints that would be impacted by the proposed project. These applications require a hydraulic analysis (see Section 330). Applicants should identify the appropriate method of storm and sanitary flow drainage and management.

- If a new separate storm outfall is proposed, prepare additional water quality analyses in support of state or federal permits. More information on the applicability and requirements of such SPDES permits is available from NYSDEC.

- If sanitary sewers are not fronting the site of the proposed area and it is shown to be infeasible to connect the proposed site to an existing sanitary or combined sewer or interceptor, either by extending the sewer or constructing a pumping station, ejector, or force main, identify the appropriate method of wastewater disposal and treatment. If septic systems are alternatively considered, the proposed setting and design should be assessed to ensure those sys-

tems function properly. Percolation tests should be performed to determine the rate at which effluent would percolate through the site's soils, and information on the depth of ground water and bedrock must be provided. The bottom of the septic leaching field must be a specified distance from ground water and rock for the system to function properly. The assessment also considers the systems' compliance with ordinances, requirements, and good engineering practice. If a septic system is determined to be appropriate, no further CEQR analysis is needed and all available information related to septic systems, including the results of the percolation tests, is submitted to the DOB and NYSDOH for review.

322.3. Industrial Facilities

Identify the pollutants to or that would discharge from the proposed industrial facilities, and disclose how the facility would comply with the discharge limits set by the City's Industrial Pretreatment Program. The concentrations of various pollutants in the process wastewater, before any treatment, should be determined. Then, effective removal rates of the proposed treatment measures should be evaluated to calculate the expected concentrations in the wastewater. DEP's BEPA can provide more information. Note that, as described above, certain categories of industrial facilities are also required to develop and use a SWPPP. This plan must identify potential sources of pollution and describe and ensure the implementation of stormwater BMPs or source control measures (SCMs) to reduce those pollutants. More information on the applicability and requirements of such SPDES permits is available from NYSDEC.

330. DETAILED ANALYSIS TECHNIQUES

Based on the preliminary assessments, detailed assessments may be required where increased sanitary or stormwater discharges resulting from the proposed project may impact capacity in the existing sewer system, exacerbate CSO volumes and/or frequencies, or contribute greater pollutant loadings in stormwater discharged to receiving waterbodies. The study areas for the detailed assessments are the same as identified above for preliminary assessment methods, unless a larger analysis area is necessary for the modeling programs or analysis techniques used to perform the assessments described below.

- Dependent on the characterization above of unsewered/partially sewered areas or other existing constraints, or if the proposed project meets density thresholds for a separate sewer area in Section 200, conduct a hydraulic analysis to determine whether the affected sewer system has capacity to serve the proposed project. If the hydraulic analysis shows that the sewer system would be inadequate to accommodate the proposed project, an ADP and infrastructure improvements may be necessary. The hydraulic analysis of the affected sanitary and storm sewer systems should be developed by the lead agency in consultation with DEP.
- If the lead agency with DEP's consultation determines that a project's increased combined sewer flows and volumes have the potential to exacerbate CSO volumes or frequency and require modeling, develop model-calculated discharge volumes and frequencies for each combined sewer outfall in the affected catchment area(s). The InfoWorks model (or other comparable model subject to DEP review of the modeling protocol) accounts for annual rainfall patterns and conveyance system hydraulic considerations such as storage, travel time, overflows from regulators, *etc.,* and, therefore, can provide a reasonable assessment of the project's impact on the sewer system and the resulting wet-weather discharges. If significantly increased CSO volumes or frequencies are predicted as a result of CSO modeling, ambient water quality modeling may be necessary to assess the impact of wet-weather discharges on the concentrations of dissolved oxygen, enterococcus, fecal coliform, and total coliform bacteria. This latter assessment would depend on the magnitude of pollutant increases and conditions of the receiving waterbody.
- If ambient water quality modeling is required due to increased volumes of separate storm sewer discharges or CSOs, estimate pollutant types and loadings that could be in the stormwater runoff. Techniques for this assessment range from simple calculations to sophisticated models. A report by the Water Environment Research Foundation (WERF), "Water Quality Models: A Survey and Assessment," provides descriptions of the types of

models as well as modeling software, including relevant model features. This reference is useful in defining the capabilities and limitations of available water quality models and in guiding the selection of a model to meet the objectives of the environmental assessment. Modeling may also be necessary for immediate mixing areas within receiving waterbodies. More information about water quality modeling is provided in Chapter 11, "Natural Resources."

400. DETERMINING IMPACT SIGNIFICANCE

410. WATER SUPPLY

Significant impacts on water supply may occur if the project would result in:

- Water pressure of less than 30 pounds per square inch in the localized water main network
- A water demand that would not be met by existing water supply infrastructure and that would require upgrades to the existing system.

420. WASTEWATER AND STORMWATER CONVEYANCE AND TREATMENT

420.1. Wastewater Treatment Plants and Collection Facilities

Significant impacts on WWTPs, interceptors, regulators, and pumping stations may occur if the project would result in:

- Inconsistency with the provisions of a Consent Order or other applicable regulatory program.
- Significantly increased wastewater or combined flows that would affect sanitary or combined sewer pumping stations, regulators, or interceptors with limited or no existing capacity.
- Loadings that would exceed capacity per specific SPDES parameters and limits.
- Privately operated treatment plants that would result in lowered water quality in the receiving waterbody would have significant adverse impacts on that waterbody. A project that would increase flows at a privately operated treatment plant to above allowable flows indicated in the SPDES permit would have significant adverse impacts. Privately operated pumping stations that would discharge to inadequately-sized sewers would have an adverse impact on the collection system.

420.2. Sanitary and Stormwater Drainage and Management

The determination of the significance of a project's impact, if any, on the City's infrastructure depends on the project type, any best management practices incorporated into the proposed project, and its location. For instance, a relatively modest increase in sanitary flows may impact separate or combined sewers and conveyance facilities within one drainage or catchment area differently than the same increase in another drainage or catchment area. Or, a large increase in stormwater volumes within a drainage or catchment area that discharges to a specific receiving waterbody may not significantly impact water quality to the same extent as the same volumes discharged to another receiving waterbody. Consequently, within the context of the location of the project, significant impacts on sanitary and stormwater drainage and management may occur if the project resulted in:

- Appreciable increases in sanitary flows in an area with no existing or proposed combined or sanitary sewers.
- Appreciable increases in stormwater runoff in an area with no existing or proposed combined or separate storm sewers.

- Appreciable increases in sanitary and/or stormwater flows to a combined or separate sewer system that would exceed capacity in the sewer system or exacerbate current conditions related to street flooding or surcharging sewers downstream.
- Appreciable increases in sanitary and/or stormwater flows to a combined sewer system that would exacerbate current conditions related to CSOs (*i.e.*, frequency or volumes).
- Appreciable increases in combined or separate storm sewer flows that result in increased pollutant loadings or standards that would exacerbate water quality, ecological integrity, or public use and enjoyment of receiving waterbodies pursuant to 6 NYCRR Part 800. Under this program, the State Water Pollution Control Board adopts and assigns classifications and standards on the basis of the existing or expected best usage of the State's waters.

500. DEVELOPING MITIGATION

Where a significant impact is identified, potential mitigation strategies must be assessed to reduce or eliminate, to the greatest extent practicable, the effects caused by the proposed project. Mitigation strategies involving modifications to site plan layout, building design and features, site drainage and sewer connections, and infrastructure improvements should be explored to eliminate or reduce significant infrastructure impacts associated with the proposed project. Such mitigation measures are described in additional detail below.

510. WATER SUPPLY

- Identify water conservation measures, such as low-flow fixtures, and develop a concept plan that identifies general types, locations, and anticipated demand reductions.
- Identify changes in the water distribution system that would be needed to maintain adequate water pressure and fire protection within the proposed project area.
- For very large water supply demands, explore the use of suction (surge) tanks that may be necessary to avoid reduced water pressure in the NYC water supply system.

520. WASTEWATER AND TREATMENT CONVEYANCE AND TREATMENT

520.1. Wastewater Treatment Plants and Collection Facilities

- Identify water conservation measures, such as low-flow fixtures, and develop a concept plan that identifies general types, locations, sizing, and anticipated demand reductions.
- Provide a higher level of treatment for new privately operated sewage treatment plants that would not result in significant adverse impacts on water quality, in addition to water conservation measures.

520.2. Sanitary and Stormwater Drainage and Management

- If in combined sewer or separate sewer area, identify water conservation measures, such as low-flow fixtures, and develop a concept plan that identifies general types, locations, sizing, and anticipated demand reductions.
- For proposed projects that require construction of sewers or other infrastructure improvements, develop an ADP in close consultation with DEP for its review and approval. The schedule and responsible entity for ensuring appropriate implementation should be described in CEQR documentation.
- If located along the waterfront and in a combined sewer area, construct separate storm sewers to divert stormwater flows away from combined sewers. An ADP should be developed in

close consultation with DEP for its review and approval. The schedule and responsible entity for ensuring appropriate implementation should be described in CEQR documentation.

- If located in a combined sewer area, identify infrastructure improvements such as high level storm sewers. An ADP should be developed in close consultation with DEP for its review and approval. The schedule and responsible entity for ensuring appropriate implementation should be described in CEQR documentation.
- If in either combined sewer or separate sewer areas, identify on-site stormwater best management practices (BMPs) to either treat and retain or detain and release with controlled discharge rates to slow peak runoff rates, and develop a concept plan that identifies general types, locations, sizing, and anticipated runoff reductions. Stormwater management systems may be incorporated into the project to mitigate potential significant impacts from stormwater. These systems include techniques, such as subsurface stone beds, storm chambers, and perforated pipes, that allow the stormwater to seep into the ground and be slowly released to the sewer system or blue and green roofs that store stormwater and gradually release it during off-peak periods. Consult with DEP for types of approvable systems. Note that the NYSDEC SPDES permit for construction activities in separately sewered areas that disturb 1 acre of ground or more require development and use of a stormwater pollution prevention plan. The stormwater pollution prevention plan should be forwarded to DEP for review.
- Extend sanitary sewers to convey wastewater flows from sites where septic tanks exist or are proposed but could not appropriately be located or designed.

600. DEVELOPING ALTERNATIVES

Many of the mitigation measures described in Section 500 may also serve as alternatives. Projects that would involve septic systems or construction of privately operated treatment plants resulting in significant adverse impacts may consider hook-up to the City sewer system as an alternative.

700. REGULATIONS AND COORDINATION

710. REGULATIONS AND STANDARDS

- Section 301 of the Clean Water Act (33 USC 1311; 40 CFR 133). This section requires all municipal WWTPs to operate with secondary treatment and authorizes the U.S. Environmental Protection Agency (USEPA) to set effluent standards for all municipal discharges.
- Interstate Environmental Commission water quality standards. This entity, established by New York, New Jersey, and Connecticut through a congressionally approved Tri-State Compact, has established water quality standards for tidal waters in the vicinity of New York.
- Section 402 of the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) Program (33 USC 1342). Under the NPDES program, any point source discharge and storm water discharges associated with industrial activities and municipal separate storm sewer systems require a permit. The State of New York is authorized to administer the NPDES program under its own State program.
- State Pollutant Discharge Elimination System (SPDES) Program, Water Pollution Control Act (Environmental Conservation Law Article 17; 6 NYCRR Article 3). See also http://www.dec.ny.gov/permits/6054.html. The SPDES program is designed to eliminate the pollution of New York waters and to maintain the highest quality of water possible, consistent with public health and enjoyment of the resource, protection and propagation of fish and wildlife, and industrial development in the State. SPDES permits are required for construction or use of an outlet or discharge pipe ("point sources") of wastewater discharging into the surface wa-

ters or groundwaters of the state, or construction or operation of disposal systems such as sewage treatment plants.

- Each of the City's 14 wastewater treatment plants is regulated by a SPDES permit. Other activities that require SPDES permits include septic systems designed to process more than 1,000 gallons per day; new treatment plants; stormwater discharges from certain industrial facilities to separate sewer systems; and stormwater discharges from construction activities to separate sewer systems, if more than 1 acre of ground would be disturbed (see below for more information).
- Applications for Long Island Wells (Environmental Conservation Law Article 17; 6 NYCRR Part 602). This regulates ground water withdrawals (temporary or permanent) in Kings, Queens, Nassau, or Suffolk County for any purpose, other than for a public water supply when the total capacity of such well or wells on any one property is in excess of 45 gallons per minute (or 64,800 gallons per day).
- Classification of Waters—ECL Article 17, Title 3; 6 NYCRR Parts 800-941. Under this program, the NYSDEC adopts and assigns classifications and standards on the basis of the existing or expected best usage of the state's waters. All of the state's surface and ground waters are assigned a water quality classification.
- Stormwater SPDES General Permits for Construction Activities. This permit is required for construction activities in separately sewered areas that disturb 1 acre of ground or more. In addition to permit requirements for erosion and sedimentation control measures, certain construction activities require the preparation of a stormwater pollution prevention plan (SWPPP) that includes post-construction stormwater management practices. Other permit requirements include submittal of a Notice of Intent prior to commencement of site clearing, grading, and grubbing as well as a Notice of Termination upon completion of construction activities.
- Section 307 of the Clean Water Act, Federal Standards for Industrial Pretreatment (33 USC 1317). This section of the Clean Water Act establishes standards for certain pollutants discharged to a sewage system, requiring pretreatment for discharge that would otherwise not meet the standards.
- New York City Industrial Pretreatment Program. Like the Federal program (see above), this program establishes standards for concentrations of pollutants in industrial discharge as set forth in Chapter 19 of Title 15 of the Rules of the City of New York related to the Use of the Public Sewers, issued by DEP, Bureau of Wastewater Treatment and Bureau of Water and Sewer Operations.
- Combined Sewer Overflow Abatement Program and Combined Sewer Overflow Long Term Control Plan. Under this program and plan implemented by DEP, New York City aims to reduce the amount of pollution reaching the City's waters. This plan includes assessment of CSO problem areas through extensive field investigations, sewer system monitoring, water quality monitoring, and development of landside and water quality mathematical models. Engineering alternatives and conceptual designs of recommended solutions are evaluated and go through cost-benefit analyses. Examples of selected CSO reduction measures include the placement of containment booms at some CSO outfall locations, which capture floatables that are discharged into the receiving water during wet weather; and CSO retention (the use of storage facilities for CSO, from which the overflow can be pumped back to the WWTP for treatment during dry-weather periods of lower flows). In addition, source controls or stormwater best management practices (BMPs) are undergoing extensive evaluations in New York City, including piloting and modeling to identify promising technologies for City-specific applications and potential environmental benefits.
- New York State Public Health Law, 10 NYCRR Part 75, Appendix 75 A. This is the State law that governs septic systems.
- New York State Design Standards for Wastewater Treatment, 1988.
- Interim New York City regulations for septic systems, implemented by DOB.
- Standards for dry wells, as required in New York City Building Code (1968) Reference Standards 16.

- DEP rule as set forth in Chapter 31, Title 15 of the Rules of the City of New York relating to House/Site Connections to the Sewer System.
- DEP rules as set forth in Chapter 23, Title 15 of the Rules of the City of New York relating to the Construction of Private Sewers or Private Drains.
- DEP rules as set forth in Chapter 20 of Title 15 of the Rules of the City of New York relating to the Governing and Restricting the Use and Supply of Water.
- DEP has initiated the City's regulatory process to propose new rules related to construction of private water mains and house and site connections to the sewer system. Upon completion of the regulatory process, the rules will be formalized in Title 15 of the Rules of the City of New York.

720. APPLICABLE COORDINATION

Any projects involving new hook-ups for water supply, wastewater, or sewage treatment need to coordinate with DEP, which is the agency responsible for the water mains and sewers and hook-ups thereto. Industrial projects subject to the City's Industrial Pretreatment Program should coordinate with DEP, Division of Pollution Control and Monitoring regarding that program. Projects involving septic systems will need to consult with DOB. Projects involving privately operated treatment plants should coordinate with both DEP and NYSDEC.

730. LOCATION OF INFORMATION

- New York City Department of Environmental Protection

  59-17 Junction Boulevard
  Flushing, NY 11373
  Bureau of Environmental Planning and Analysis

- New York City Department of Environmental Protection

  59-17 Junction Boulevard
  Flushing, NY 11373
  Bureau of Water and Sewer Operations

- New York City Department of Environmental Protection

  59-17 Junction Boulevard
  Flushing, NY 11373
  Bureau of Wastewater Treatment

- New York State Department of Environmental Conservation

  47-40 21st Street
  Long Island City, NY 11101