CHAPTER 3.G

# INFRASTRUCTURE

## A. OVERVIEW

Infrastructure comprises the physical systems that support the City population including water supply, wastewater, sanitation, energy, roadways, bridges, tunnels, and public transportation. Potential impacts on the water supply from the proposed *Mosquito-Borne Disease Control Program* are presented in Chapter 3.E, "Water Supply." There are no expected adverse impacts on the City's sanitation, roadways, bridges, tunnels, and public transportation from the proposed *Mosquito-Borne Disease Control Program.* This section examines the potential impacts on the wastewater collection and treatment systems from the proposed adulticide applications under the *Mosquito-Borne Disease Control Program.*

## B. EXISTING CONDITIONS

New York City's sewer system consists of a grid of sewers beneath the streets that send wastewater flows to 14 different treatment plants, known as water pollution control plants (WPCPs). The drainage basins of a WPCP are the areas from which all sewers flow into that WPCP. Most of this system is a "combined" sewer system—it carries both sanitary sewage from buildings and stormwater collected in 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 and Queens use septic systems to dispose of sanitary sewage, rather than any of the City's WPCPs.

About 85 percent of the City's sewer system collects both "dry-weather" wastewater (primarily sanitary sewage as well as wastewater from industries) and stormwater. During dry weather, combined sewers function as sanitary sewers, conveying all flows to the WPCPs for treatment. During wet weather, however, large volumes of rainfall runoff (10 to 50 times the dry-weather flow) can enter the system through storm drains along the City's streets. If this water were conveyed to the treatment plants, it would exceed their treatment capacity; the plants are designed to handle, on average, only twice their average dry-weather flow for limited periods. To avoid flooding the plants, "regulators" are built into the combined sewers to act as relief valves. These are chambers set to allow approximately two times the average dry-weather flow into the interceptor during storms. If a greater amount of wastewater reaches the regulator, the excess is directed to outfalls into the nearest waterway (e.g., the Hudson River, East River, etc.). During such overflow periods, a portion of the sanitary sewage entering or already in the combined sewers discharges into the waterway along with the stormwater and debris washed from the streets. This untreated overflow is known as combined sewer overflow (CSO).

New York City's sewage is treated by 14 WPCPs: Coney Island, Newtown Creek, Owls Head, Red Hook, and 26th Ward in Brooklyn; Hunts Point in the Bronx; North River and Wards Island in

Manhattan; Bowery Bay, Jamaica, Rockaway, and Tallmans Island in Queens; and Oakwood Beach and Port Richmond on Staten Island. Together, these plants treat up to 1.7 billion gallons of sewage per day. Figure 3.G-1 depicts the 14 WPCP locations with their respective drainage basins (i.e., the land area coverage which drains to the plant).

## C. FUTURE WITHOUT THE PROPOSED ACTION

In the future without the proposed *Mosquito-Borne Disease Control Program*, real estate development is expected to be ongoing within the study areas. The *Routine Program* elements of the Arthropod Surveillance and Control Plan, including the placement of fish to eat mosquito larvae and/or larviciding of the City's WPCPs, would continue. General background pesticide usage in the City is expected to continue, and will continue not to significantly impact the operations or disposal of sludge (i.e., the residual amount of sewage that is not broken down by bacteria and must be removed from the plants for further dewatering and, ultimately, transported out of the region for land disposal outside New York City). While growth is expected in the City's population and employment throughout the City, this growth is not expected to overburden the City's WPCPs.

## D. PROBABLE IMPACTS OF THE PROPOSED ACTION

As described in Chapter 3.D, "Natural Resources," and Chapter 3.F, "Water Quality," after application of adulticides, there could be entrainment of the applied adulticides into the wastewater system if it rains after the applications. Chapter 3.D, "Natural Resources," discusses the analyses and potential impacts from the runoff of products. If the rainfall is appreciable, the deposited adulticides would likely discharge into water bodies, not to the WPCPs. Given the 1.7 billion gallons per day of raw sewage that is treated by the WPCPs, no impacts are expected on their operations from the limited amount of adulticides that could occur within a given day. Concentrations of adulticides in the influent to the plant resulting from the proposed *Mosquito-Borne Disease Control Program* would be low, and past actions during 1999 and 2000 have not demonstrated any impacts on treatment plant operations. Fish at the treatment plants (which have been placed there to reduce mosquito larvae under the *Routine Program*) have not died from adulticides draining to the WPCPs, and should the fish at the WPCPs die off (either due to adulticide applications or other non-project related causes), larviciding would continue at these facilities, to ensure that mosquito generation from the WPCPs are minimized. Therefore, there are no expected significant adverse impacts on the infrastructure systems from the proposed *Mosquito-Borne Disease Control Program.* ☞

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