

CHAPTER 3.B

LAND USE, COMMUNITY FACILITIES, PUBLIC POLICY, AND ZONING

A. INTRODUCTION

As described in Chapter 3.A, “Framework of Analysis,” residents, workers, and visitors in New York City may be exposed to adulticides through a variety of pathways. The environment in which an application occurs is one key determinant of exposure (see Chapter 3.A). This chapter discusses the representative environment types, based on land use and general physical features that can be found in the City, and analyzes potential impacts to those uses as a result of the proposed adulticiding activities. The land use analysis focuses on the highest potential sensitivity to adulticiding activities: residential uses, community facilities and institutional uses, commercial uses, parks and publicly accessible open spaces, and selected industrial uses. Within these categories, the most sensitive uses are associated with a high level of outdoor activity—parks and open spaces, outdoor sitting areas, open-air restaurants and markets, and other popular neighborhood gathering places, as discussed below.

B. EXISTING CONDITIONS

COLLEGE POINT

The College Point study area includes the area between Flushing Bay and the East River west of the Whitestone Expressway and the Whitestone Bridge (see Figure 3.B-1). The area contains a variety of single-family homes on large and small lots; low-rise multi-family housing; parks; natural resources including Powell’s Cove, a variety of tidal wetlands, and the former Flushing airport, which contains substantial open water and wetland areas. Also included in this Representative Area are the College Point Industrial Park, several office buildings, and a major new installation of retail uses along 20th Avenue.

The industrial uses in the study area are concentrated in the College Point Industrial Park and on the waterfront west of College Point Boulevard. These areas contain a mixture of light and heavy manufacturing, warehouse and distribution facilities, utilities, auto-related uses, and mixed commercial and industrial operations.

The major publicly accessible open spaces in the area are Frank Golden Park, Herman MacNeil Park, Powell’s Cove Park, Poppenhusen Playground, and College Point Park. Several marinas are located along the Flushing Bay and East River waterfronts at the northern and western boundaries of the study area. The major commercial areas are located along 20th Avenue and College Point Boulevard. The study area contains several institutional uses including Public School (P.S.) 29, P.S. 129 and several churches along 14th Avenue.

Based on information reported by the U.S. Census, the residential population of this Representative Area was 22,367 in 1990 and 25,598 in 2000 (a 14 percent increase). In 1990 approximately 8 percent of residents were under 7 years old, 12 percent were seven to seventeen, and 15 percent were 65 or older (one of the highest percentages of the 7 representative study areas).

Environment Types

Residential Environment

The College Point Area is a low- to medium-density residential neighborhood. Its housing is characterized by attached and detached single- and two-family houses of 3 or fewer stories. Most of the houses in the study area are located on small- to medium-sized lots, with the exception of the houses in the Malba neighborhood, that are located on large lots. The area contains a mix of house styles, including detached homes, row houses, apartments, and townhouses.

Most of the residences in the study area have front and rear yards and driveways. South of 28th Avenue, homes on small lots are integrated with industrial uses. Most of these homes do not have front yards, but instead have enclosed stoop areas. Several of the homes in the Malba neighborhood have waterfront lots and access to the shoreline from their private property.

There are several apartment/condominium complexes in the study area. Skyline Terrace Condominiums is a complex of 3-story apartments with balconies, located at 120th Street and 25th Road along the waterfront. The complex has a community pool, outdoor sitting areas, and a pier overlooking the water. Another waterfront residential complex is the Riverview Condominium complex. The community contains 3-story villas with balconies as well as townhouses, many of which have front and rear yards with outdoor lawn furniture. The community has a waterfront open space area, with lawn. Bay Park Estates, located at Bay Park Drive and 115th Street, has a pool for its residents as well as a small basketball court. There is outdoor lawn furniture on the balconies of many of the apartments in this 3-story complex. Another townhouse complex is being constructed near Powell's Cove in the northern portion of the study area. The complex abuts Powell's Cove Park. A low-rise apartment complex is located south of the wastewater treatment plant on Powell's Cove Boulevard. Several of the complex's units have balconies.

Community Facilities and Institutional Uses

Several schools and community facilities are located in the study area. Along the waterfront between 25th Road and 27th Avenue are three nursing homes, situated in a row. Cliffside, the northernmost nursing home, is a 6-story structure with a balcony on the river side of the building. The middle facility, Woodcrest, is also a 6-story structure, which has a small outdoor sitting area in the rear of the building. The southernmost facility, Waterview Nursing Care Center, is a 3-story building with an outdoor sitting area and picnic tables.

The study area contains two public schools. P.S. 29, located at 23rd Avenue and 125th Street, has an outdoor play area with basketball courts and handball courts. The entire play area is paved and is currently occupied by several trailers containing outdoor classrooms. P.S. 129, located on 10th Avenue at 129th Street, has no outdoor play areas.

The area has several parochial schools as well. The St. Agnes Academic School is located at the intersection of 124th Street and 14th Avenue. The school has no outdoor play area. St. Fidelis's Catholic School, located at 125th Street and 14th Avenue, similarly has no outdoor play area.

At the eastern edge of the study area, at 143rd Street and 14th Avenue, is the Holy Trinity Parish School. The school has an outdoor tot lot enclosed by fencing. St. John's School and Church, located at 124th Street and 22nd Avenue, has a lawn and outdoor play area.

Commercial Uses

Commercial uses are dispersed throughout the study area. The southeast corner of the College Point Industrial Park, near the intersection of Ulmer Road and the Whitestone Expressway service road, contains some commercial uses including a multiplex, and Astoria Federal Bank. North of 20th Avenue, along the Whitestone Expressway service road there are low-rise office buildings. Ground floor commercial uses on College Point Boulevard are typically neighborhood service shops, such as delis and stationery stores. Among the many storefronts on the boulevard is a fruit and vegetable market near 15th Avenue.

A major commercial strip of large retail chain stores is located on the block bounded by 20th Avenue to the south, 14th Avenue to the north, 131st Street to the west, and the Whitestone Expressway service road to the east. The shopping complex contains a Waldbaums, Staples, Target, Circuit City, TJ Maxx, BJ's, Old Navy, Modell's, and Babies-R-U's, as well as a restaurant. The stores are set back from the street behind large parking areas. Additionally, several shopping plazas catering to neighborhood needs are located north and south of 14th Avenue at 133rd Street.

Along the waterfront there are several marinas, including the Anchorage Marina, the Arrow Yacht Club, and Skyline View Marina. At 21st Avenue, there is a small waterfront sports club with an outdoor deck.

Parks and Publicly Accessible Open Spaces

The study area contains several neighborhood parks and open spaces as well as public access to the waterfront. Herman MacNeil Park is located between Poppenhusen Avenue, College Point Boulevard, 115th Street and the East River. The approximately 29-acre park is used by area residents of all ages. Facilities and amenities at the park include a waterfront walking path, benches, play equipment, swings, lawn area, grassy knoll, climbing structures, basketball courts, a baseball diamond, and handball courts.

Another large park in the study area, Frank Golden Park, is located on 14th Road between 132nd and 138th Streets. The 11-acre park contains soccer/football fields, baseball diamonds, tables and benches, play structures, swings, basketball courts, and a walking path. The area receives moderate use and is used by softball leagues during the summer months.

Powell's Cove Park, located along the waterfront, is an open lawn area rimmed with trees and has a waterfront walkway. Sections of the park are currently being restored. The area lacks benches and is not a primary gathering place in the neighborhood.

College Point Park is located at 14th Avenue and College Point Boulevard. The park contains basketball courts, handball courts, and benches and is used predominantly by teens and adults. The College Point Hockey rink is located at 25th Avenue and Ulmer Road.

Poppenhusen Playground, located at 124th Street and 20th Avenue, contains basketball courts, benches, spray showers, lawn, play structures, swing sets, and bathrooms. Approximately 80 percent of the park is paved. The park is well-used by children, teens, and adults. Another playground is located at 115th Street. The area has benches, swings, and play equipment and is entirely paved. 115th Street Playground is used primarily by children.

Adjacent to the New York City Department of Environmental Protection (NYCDEP) Tallman Island Water Pollution Control Plant is a park with a waterfront walking path leading to a well-used fishing pier. Adjacent to this park is the College Point Yacht Club, located at 126th Street and Powell's Cove Boulevard. Further east along the waterfront at 5th Avenue is an area of publicly accessible open space at the Riverview Condominium complex. The open space consists of a waterfront walking path and sitting areas.

The Ariel Tennis and Rowing club, located at 130th Avenue, east of Powell's Cove Park, has a pier and benches along the water as well as outdoor tennis courts on and near the water's edge. Another pier is located in Malba on Point Crescent.

Industrial Uses

Industrial uses in the study area are located in several clusters. These are the area west of College Point Boulevard along the waterfront, south of 25th Avenue; the College Point Industrial Park; the northeast corner of the former Flushing airport, between 14th and 20th Avenues, west of 131st street; and along the Flushing Bay waterfront between 20th Avenue and 12th Avenue. The industrial areas contain a mix of uses, such as construction companies with equipment storage areas, utilities, warehouse and distribution facilities, light and heavy manufacturing businesses, auto-related services, and mixed commercial and industrial operations. Some of the larger industrial uses in the area are a Con Edison natural gas fueling station, the New York Times printing and distribution facility, a United States Postal Service facility, a Queens Surface Corporation complex, NYCDEP Tallman Island Water Pollution Control Plant, and a New York City Department of Sanitation marine transfer station.

Summary of Outdoor Activities

Popular gathering places in the College Point study area are public parks, private pools and sitting areas in apartment complexes, and private yards and balconies. Herman MacNeil Park, Poppenhusen Playground and College Point Park are the area's most highly visited parks. Aside from parks and private yards there is little other outdoor recreation. The area has few outdoor markets and no outdoor dining restaurants and there is relatively little pedestrian traffic on the streets that contain retail uses during evening hours when adulticide would be applied. During the summer, activities at the schools in the area decline substantially, especially during late afternoons and evenings.

Zoning and Public Policy

The land uses in College Point reflect the underlying zoning, which permits low- to mid-density residential uses (R1, R2, R3, R4) and light-industrial uses (M1), with a small area along the southern edge of the study area zoned for heavy-industrial uses (M3). The large shopping complex in the vicinity of 20th Avenue is located within an M1 manufacturing zone, which permits commercial facilities.

JAMAICA BAY AND ENVIRONS/PAERDEGAT BASIN AREA

Jamaica Bay and its immediate environs are of particular interest for this EIS, because the bay itself is an important natural estuary. The bay is designated by New York State Department of Environmental Conservation (NYSDEC) as a Critical Environmental Area (the only one in New York City) and by the New York State Department of State (NYSDOS) as a Significant Coastal Fish and Wildlife Habitat. On the Federal level, a portion of it is a National Wildlife Refuge within the Gateway National Recreation Area. It is also the area that receives water from runoff after rain events from an enormous drainage area in Brooklyn and Queens. The runoff primarily arrives via combined sewer

outfalls (CSOs), but also travels to the bay directly. Thus, this is a sensitive natural environment that could experience a major indirect exposure pathway to adulticides from surface runoff during a rainfall. In addition, the Magothy Aquifer, which is used to supply a very small percentage of the City's water supply (about 1 percent), is located beneath southern Brooklyn and Queens, and application of adulticides in this region could potentially affect groundwater supplies.

Within this very large area, Paerdegat Basin in Brooklyn (see Figure 3.B-2) was selected for study of a number of specific environments. Most of the waters of the basin are greatly influenced by the discharge from a large CSO at the head of the basin. While NYCDEP is in the process of designing a large holding tank to minimize such discharges in the future at this location, the completion of the construction of a CSO holding tank is still many years away. Near the CSO, land uses are industrial; closer to the bay, the shores of this basin are lined with open land, including play areas and marinas near the basin's outlet into Jamaica Bay.

Four residential communities surround Paerdegat Basin: Georgetown and Bergen Beach, southeast of the basin, and Paerdegat Basin and a portion of Canarsie, northeast of the Basin. The area is predominantly residential, with 2- to 3-story, semi-detached and attached houses along almost all side streets and portions of arterials. Shopping for the neighborhoods lines two major streets: Ralph Avenue (west of the Basin) and Flatlands Avenue (north of the Basin). As the Belt Parkway runs through the area, it skirts Jamaica Bay and passes over the mouth of the basin.

Four public schools are spread through the study area and often have adjacent City playgrounds, basketball courts, and handball courts. In addition to these playgrounds, the study area contains three major parks along the bay: Canarsie Beach Park, bordering the basin to the northeast (which contains Canarsie Pier); McGuire Park, bordering the eastern mouth of the basin; and Bergen Beach, south of the mouth of the basin. These three parks, along with the portion of the basin near its mouth, encompass much of the area's natural landscape.

Based on information reported by the U.S. Census, residential population of this Representative Area was 35,317 in 1990 and 44,125 in 2000 (a 25 percent increase). In 1990, approximately 7 percent of residents were under 7 years old, 12 percent were 7 to 17, and 16 percent were 65 or older (the highest percentage of the 7 study areas).

Environment Types

Residential Environment

Most of the Paerdegat Basin area comprises attached, semi-attached, and fully detached houses, ranging from 2 to 4 stories. The Paerdegat Basin and Canarsie neighborhoods, north of the basin, contain strips of 2- and 3-story, attached and semi-attached housing with no significant front yards, but rear yards or decks as a consistent feature. South of the basin, in the Bergen Beach neighborhood, most residences take the form of small, single-family houses with small rear yards. The study area also contains other types of housing, albeit in small quantities. The Glenwood Houses, a public housing complex on Ralph Avenue at the northern portion of the study area, consists of a cluster of twenty 6-story apartment buildings surrounded by footpaths and grass, centered around a public green.

Community Facilities and Institutional Uses

Enrolling more than 8,000 students, the area's 5 public schools are its most important community facilities. P.S. 276 and I.S. 68 in Paerdegat Basin, and P.S. 312 and I.S. 78 in Bergen Beach enroll a total of approximately 5,000 children ages 5 to 14. South Shore High School, occupying a large

campus at the junction of Flatlands and Ralph Avenues, enrolls more than 3,000 students ages 14-17. Each of these schools has at least a small adjacent outdoor playground, and South Shore High School has a large adjacent track and field. In addition to these public schools are three small private schools with total enrollments of approximately 600 students.

Commercial Uses

The study area's commercial uses are concentrated along two retail strips—Flatlands Avenue and Ralph Avenue. Each is lined with a combination of small strip malls, 1- to 2-story commercial buildings, retail storefronts, and auto-related uses. There are very few restaurants in the area, and none with outdoor seating. Similarly, few of the bodegas, delis, and markets sell fruit or other foods in the open air.

A number of yacht clubs are sited on both sides of the basin itself, each with small, but significant docking facilities. These include the Hudson River, Paerdegat, Drowned Point, and Midget Squadron Yacht Clubs.

Parks and Publicly Accessible Open Spaces

Two types of open spaces can be found in the Paerdegat Basin study area: paved courts and playgrounds, often adjacent to public schools; and large public parks, adjacent to Jamaica Bay and Paerdegat Basin. The paved playgrounds such as the Bildersee Playground adjacent to I.S. 68, the Bergen Beach Playground adjacent to P.S. 312, and the Glenwood Playground adjacent to the Glenwood Houses, usually contain handball and basketball courts and sometimes jungle gyms or swing sets. Most of these playgrounds are used as areas of recreation for adjacent schools. As such, they tend to be less frequently used in the late afternoon/early evening hours. On a typical summer day, they are often lightly used by a handful of youths.

The area is well-endowed with larger public parks. Canarsie Beach Park, which lies between Seaview Avenue and Jamaica Bay, is a large (132-acre), well-maintained park, approximately half of which is readily accessible to the public. The area of Canarsie Beach Park along Seaview Avenue includes the Joseph T. Dinapoli playground (with jungle gyms and swing sets filled with children on one typical summer afternoon), basketball courts, and approximately eight large baseball diamonds, as well as a large, grassy field. At the northeastern edge of the study area on Jamaica Bay is Canarsie Pier, a heavily-used fishing and passive recreation spot just off the Belt Parkway. With parking for hundreds of cars, many benches, a boating pier, and a restaurant, Canarsie Pier is one of the more popular places for outdoor activity in the study area.

McGuire Park, in Bergen Beach just across the basin from Canarsie Park, is similar to Canarsie Park in that it has a number of uncrowded ball fields. Less heavily used than Canarsie Park, McGuire Park is in impeccable condition—it contains newly constructed tennis and volleyball courts—and is one of the few sites in the study area that provides public access to the waters of Paerdegat Basin. Just south of McGuire Park, across the Belt Parkway, is a portion of the Gateway National Recreation Area known as Bergen Beach. Most of this bay-front open space is given over to bridle paths and woods. At its southern end is the Jamaica Bay Riding Academy. Since access to Bergen Beach is difficult—via an exit from the Belt Parkway—this open space is not heavily traveled.

Industrial Uses

The Paerdegat Basin Combined Sewer Outflow facility, run by NYCDEP, is located across the street from South Shore High School, at the intersection of Ralph and Flatlands Avenues. While it is

bordered on the west and east by industrial uses, the land farther along the basin southeast of the facility quickly shifts to commercial uses that focus on boating (see above).

Summary of Outdoor Activities

Nodes of outdoor activity in the Paerdegat Basin study area include the commercial strip of Flatlands Avenue (and to a lesser extent, Ralph Avenue), Canarsie Beach Park, and Canarsie Pier. However, street-level activity is minimal as this area is not within walking distance of the subway and many residents use private automobiles for transportation. During the summer, activities at the five schools in the area decline substantially, especially during late afternoons.

Zoning and Public Policy

The land uses in the Paerdegat Basin area reflect the underlying zoning, which allows mid-density residential development (in R3, R4, and R5 zoning districts) along most blocks. Commercial overlay districts along Ralph Avenue and Flatlands Avenue facilitate the commercial uses along those blocks. Zoning does not permit manufacturing anywhere in the Paerdegat Basin study area.

EDGEMERE/ FAR ROCKAWAY

This area, located on the Rockaway peninsula at the southeastern end of Jamaica Bay in Queens (see Figure 3.B-3), contains several environment types of interest, including recreational ocean beach (which contains potential breeding grounds for the piping plover, an endangered species), vacant land, high-rise and low-density housing, a hospital, and a former landfill (now capped and covered) on the bay. Running from the Grass Haddock Channel section of Jamaica Bay to Rockaway Beach and the Atlantic Ocean, Edgemere is a small, diverse residential community. The “A” subway line runs through the area on elevated tracks north of the beach.

The small amount of commercial activity in the area is limited to portions of Beach Channel Drive, as is the majority of the street activity in the area. The neighborhood’s only public school and hospital are also on Beach Channel Drive, next to and across the street from the Edgemere Houses. In addition to the vacant land in the area, the former Edgemere Landfill (with Rockaway Community Park at its southern edge), which juts out into Jamaica Bay, and Rockaway Beach on the Atlantic Ocean, comprise Edgemere’s natural land areas.

Based on information reported by the U.S. Census, residential population of this Representative Area was 14,813 in 1990 and 12,022 in 2000 (a 19 percent decrease). In 1990, approximately 16 percent of residents were under 7 years old (the highest percentage of the 7 study areas), 23 percent were 7 to 17 (also highest of the 7 study areas), and 9 percent were 65 or older.

Environment Types

Residential Environment

In addition to its four clusters of 9-story to 20-story apartment buildings (three of them public housing projects), Edgemere’s other predominant housing type is the 1-story, single-family house on a small lot. These houses, which appear to have at one point in time lined the blocks, are now interspersed with vacant lots where weeds, grasses, and wildflowers grow freely. The blocks adjacent to the Boardwalk and Rockaway Beach were also formerly lined with houses but are now completely vacant and covered with low-lying vegetation, beach grasses, and sand; and the streets themselves are now dirt paths.

Community Facilities and Institutional Uses

Community facilities outnumber commercial establishments in Edgemere/Far Rockaway. The vast majority of community facilities in the study area are on Beach Channel Drive. They include 2 medical centers, Peninsula Hospital and the Rockaway Care Center; 2 day-care centers; 2 community centers; 2 public schools, J.H.S. 198 and P.S. 105; and the Seaview Manor Adult Home (the only facility not on Beach Channel Drive). Peninsula Hospital, on Beach Channel Drive, contains approximately 230 beds and focuses on general medical and surgical care, while the Rockaway Care Center is a residential facility catering to senior citizens. Together, the 2 schools in the community enroll approximately 1,300 students in grades K through eight, and 100 high-school aged students.

Commercial Uses

There is a dearth of commercial activity in the study area, with no restaurants and no open-air food markets. Beach Channel Drive is the only site of commercial activity, with fewer than 10 commercial establishments from Beach 59th to Beach 38th Streets.

Parks and Publicly Accessible Open Spaces

The area has two large open spaces: Rockaway Community Park and Rockaway Beach. Rockaway Community Park, at the southern border of the former Edgemere Landfill, is a well-maintained park with grassy areas, tennis courts, basketball courts, and baseball diamonds, but is very lightly used. Instead, the smaller playgrounds adjacent to schools and the sitting areas within public housing complexes are the focus of outdoor activity. These areas include the Conch Playground adjacent to P.S. 105 and the Beach 59th and Beach 54th Street playgrounds within the Edgemere Housing and Arverne Housing complexes.

Industrial Uses

The former Edgemere Landfill, occupying the entire northern peninsula of Edgemere/Far Rockaway, has been capped and is closed, but has not been returned to public use yet. The approximately 130-acre former landfill is now covered with grasses and is home to a wide variety of birds, especially seabirds.

Summary of Outdoor Activities

Despite its number of vacant lots and limited commercial activity, street-level activity in the Edgemere/Far Rockaway area is high. Beach Channel Drive, the area's main thoroughfare, is active with pedestrians and bicyclists. Each of the three housing projects in Edgemere/Far Rockaway contain areas of significant outdoor activity, with children playing on jungle gyms, the elderly relaxing on benches, and other adults and teens socializing on benches, on sidewalks, and in the streets and paved paths. Most of this activity is focused along Beach Channel Drive and within the Edgemere/Far Rockaway and Beach 41st Street housing complexes. The study area south of Beach Channel Drive is largely devoid of pedestrian activity. During the summer, activities at the schools in the area decline substantially, especially during late afternoons.

Zoning and Public Policy

Zoning in the Edgemere/Far Rockaway area is overwhelmingly residential, allowing mid-density housing in R4, R5, and R6 zoning districts. Land uses in the area reflect the underlying zoning, ranging from mid-rise public housing projects to single-family detached houses. There are small areas zoned for commercial uses, but such zoning has not spurred such uses in this area.

HUNTS POINT/SOUNDVIEW

A wide range of uses characterizes this area in the South Bronx. Roughly centered on the Bronx River as it flows to the East River in New York Harbor, the study area comprises Hunts Point on the west shore of the river and Soundview on its east shore (see Figure 3.B-4). The Hunts Point section of the study area contains a residential neighborhood of mid-rise housing in its northern third, interspersed with ground floor retail, low-rise commercial uses, and auto-related and industrial uses. A ring of institutional, open space, and light and heavy industrial uses surrounds the blocks of residential buildings. Residences on the fringe of the industrial area tend to be mid-rise apartment blocks or 2- to 3-story row houses, with accessory off-street parking lots and several small community gardens. The south and east portions of Hunts Point are almost wholly industrial and vacant land. The businesses found here include auto-related and food industry-related uses.

Across the Bronx River, the Soundview neighborhood contrasts greatly to Hunts Point. The neighborhood is composed primarily of residential development and accessory service uses (commercial and institutional), and a large public open space, Soundview Park. Four public housing projects are located here—three high-rise projects (Soundview Park Homes, Lafayette Morrison Houses, and Soundview Houses) and one low-rise, clustered development (Classon Point Gardens Houses). Near Soundview Avenue, the housing stock includes row houses, low-rise apartment blocks, and, further south, single-family detached homes with driveways and gardens. Recreational uses such as ballfields, playgrounds, and a paved bicycle/rollerblading path enhance various areas of Soundview Park.

Based on information reported by the U.S. Census, the residential population of the Hunts Point portion of the representative area was 8,557 residents and that of Soundview was 19,523 in 1990. The total population of Hunt's Point/Soundview had risen to 31,043 by 2000, an 11 percent increase. In 1990, approximately 11 percent of residents were under seven years old, 18 percent were seven to seventeen, and 8 percent were sixty-five or older.

Environment Types

Residential Environment

As shown in Figure 3.B-4, residential uses in Hunts Point are clustered in its northern half. Near Bruckner Boulevard, medium-density 4 to 8-story brick apartment buildings dominate. Density declines as one moves south along Hunts Point Avenue, where 2- to 5-story rowhouses and brick apartments predominate, many with side lots used for parking. In the southern half of Hunts Point and areas around the waterfront, there are virtually no residences.

Most of the buildings along Hunts Point Avenue provide a consistent streetwall with no side yards. Some of the buildings have front stoops or gardens in the rear yard. The lower-rise buildings south of Spofford Avenue have front stoops, and many of the row houses have front or back porches as well. Street trees throughout Hunts Point are few, even along the well-maintained stretches of Hunts Point Avenue.

The residential structures in Soundview differ quite markedly from Hunts Point, as over half of the housing within the study area lies within high-rise and low-rise public houses. Soundview Park Homes, Lafayette Morrison Houses, and Soundview Houses are tower-in-the-park developments from the 1950's and 1960's, with tall buildings surrounded by parking areas and active and passive recreational space such as playgrounds, benches, and gardens. Many of the units within these high-rises have outdoor patios. The Classon Point Gardens Homes are another public residential

development, but are built as clusters of 2-story houses with individual front and rear yards. Central parking areas and additional green spaces are found between the buildings. To the east and south of the public housing, Soundview also has 2- to 3-story attached houses, row houses, and single-family homes. Most of these residences feature front and back yards, with some side yards as well. Several homes near the water have boat access from their yards.

Community Facilities and Institutional Uses

Community facilities in the Hunts Point area are scarce and concentrated in the northern third of the study area. Three public schools, one Head Start Center, and two children's homes are the only notable institutions aside from the Spofford Juvenile Center, which covers most of the block between Tiffany and Barretto Streets north of Spofford Avenue. Soundview contains two large public schools and a clinic. Due to the sprawling industrial and vacant land uses in this area of the Bronx, the southern parcels of this study area do not place a large demand for institutional uses on the city.

Commercial Uses

In Hunts Point, the few commercial uses are found along Hunts Point Avenue near Bruckner Boulevard. Most are 1- to 2-story neighborhood stores such as delis, supermarkets, and hardware stores to which area residents can walk. Moving south along Hunts Point Avenue, the uses are increasingly auto-related, with used auto dealers and auto parts shops dominating the landscape. Mixed in with the auto uses are several banks and food shops. One small market with produce displayed in front of the store is located at Hunts Point Avenue and Bruckner Boulevard.

Soundview contains a concentration of commercial uses along Bruckner Boulevard, including a bowling alley and large grocery store. The commercial uses continue south along Soundview Avenue, especially at Story Avenue, where a small strip mall with neighborhood services and a meat market is located. Most of the commercial uses in Soundview are concentrated on the main roads which are the study area's boundaries, rather than within the residential core.

Parks and Publicly Accessible Open Spaces

Hunts Point contains several parks that vary in type of use from active to passive, and in intensity of use from very light to heavy. The Julio Carballo Fields are a relatively new open space resource located at Lafayette Avenue and Manida Street, east of the grand convent building housing Dominican nuns. The popularity of the ballfields as a neighborhood resource is evident in their heavy use. Next door, the City Department of Design and Construction (DDC) is currently constructing the Hunts Point Youth Recreation Center (completion date unknown). South of this construction site is the area Head Start, which has a concrete play yard in back. To the east of this, a large vacant lot appears to be used for gathering purposes, as some makeshift seats have been put in place. However, no users were seen at the time of field work. Another popular city playground is located to the east of P.S. 48 between Hunts Point Avenue and Faile Street. This space contains recreational equipment and ballfields on a concrete surface. The school itself also has ballfields and play equipment located in back, on the south side of the school. The other open space in this half of the study area is Drake Park, located at Hunts Point and Oak Point Avenues. A cemetery is located in the center of the park, and no other amenities are featured here. Despite the well-maintained lawn and mature trees, field surveys noted no users aside from several stray dogs noted in this park.

The large and accessible Soundview Park is located on the eastern bank of the Bronx River and is Soundview's primary open space. Many amenities, including ballfields, a newly paved bicycle and rollerblading path, play equipment, and numerous seating areas, are found throughout this park. The

other open space in this half of the study area is a Greenstreet, Woodrow Wilson Triangle, located on Soundview Avenue. No seating is included in this Parks Department property.

Industrial Uses

Hunts Point is known for its industrial uses, which dominate the majority of the study area. The prominent use, which covers most of the western waterfront of the Bronx River, is the Hunts Point Food Distribution Center. The Distribution Center is made up of the Hunts Point Produce Market and the Hunts Point Meat Market. The vast majority of the food that is consumed in New York City passes through this market for distribution to various supermarkets and eventually to restaurants throughout the city. The distribution center operates 24 hours a day. Food is primarily kept indoors at both markets, except for the display produce that is occasionally set out on loading docks. The meat market contains an extensive refrigeration and ventilation system, and the product is always kept indoors between loading and unloading.

Aside from the Food Center, Hunts Point contains numerous other light and heavy industrial uses, from a water treatment plant and garbage transfer stations to automotive supply shops and individual food distributors. Most of these uses are located south of Randall Avenue. Two large municipal facilities—the New York City Department of Correction Maritime Correctional Facility III and the NYCDEP Hunts Point Water Pollution Control Plant—are located on the southern tip of the study area, along the East River. Additionally, some industrial uses are mixed in with low-rise residential uses between Spofford and Randall Avenues.

Soundview contains no industrial uses aside from the small parcel of land north of Soundview Park, along the waterfront.

Summary of Outdoor Activities

Residents of Hunts Point congregate along the stoops of apartment blocks on Hunts Point Avenue and residential side streets between Lafayette and Spofford Avenues. Several of the larger buildings in this residential/commercial area have gardens in the side or rear yards. Many people also gather in the parks such as Julio Carballo Fields, where ballfields and soccer fields offer plentiful open space, and the Hunts Point Playground, a new play area in excellent condition. In the middle third of the area, where residences are interspersed with industrial and auto-related uses, many of the buildings have front stoops or porches where people tend to gather.

In Soundview, there is a greater amount of community open space, as Soundview Park stretches the length of the neighborhood, and provides areas for both active recreational activities such as playing sports, and passive activities such as reading, sunbathing, and strolling. The playgrounds and ballfields found throughout the park are popular gathering places. In addition, residents also gather on the front porches of low-rise housing, and the playgrounds and benches found within the high-rise complexes. During the summer, activities at the schools in the area decline substantially, especially during late afternoons.

Zoning and Public Policy

The land uses in this area reflect the underlying zoning: predominantly light and heavy manufacturing in Hunts Point, west of the Bronx River, and residential in Soundview, east of the Bronx River. Except for a medium-density R6 district in the northwest portion of Hunts Point, the neighborhood is zoned entirely for manufacturing use. The majority of Soundview is zoned for medium-density housing (R3-2, R5, and R6 zoning districts). C8-1 and C4-2 commercial zones along the south side of Bruckner Boulevard allow the existing commercial uses in that area. C8 districts allow heavier

commercial uses (such as auto-body shops) and are intended as a buffer between manufacturing and residential districts.

JEROME PARK/VAN CORTLANDT PARK SOUTH

As shown in Figure 3.B-5, this Representative Area centers around the Jerome Park reservoir in the Bronx, which is part of the City's Croton water supply system. As such, approximately 10 percent of the City's daily water supply passes through it. The study area is composed of parcels in three neighborhoods, from north to south: Van Cortlandt Village, Kingsbridge, and Kingsbridge Heights. Residential and accessory uses to the north, west, and south, and institutional and industrial uses to the east surround the reservoir. The residential housing stock in the north and east is primarily composed of mid-rise apartment blocks sprinkled with single- and multi-family detached houses. Winding streets connect the residential uses to area parks and service nodes, which contain small grocery stores and other local commercial uses. The south contains a more regular street grid with a similar but denser housing stock. On the eastern side of the area, a string of school complexes occupy four superblocks. At the eastern boundary are the New York City Transit (NYCT) rail yards and three residential high-rises.

Several open spaces located near the reservoir have been included for study as part of the Representative Area. The southern parcel of Van Cortlandt Park—including Moshulu Golf Course, a driving range, playground areas, the parade ground, and the Van Cortlandt Mansion and Museum—is located on the northern border of the study area. Within the residential areas near the reservoir are numerous neighborhood parks. In addition, the western boundary of the study area is parallel to the Major Deegan Expressway, and publicly accessible open spaces occupy parts of the right-of-way.

Based on information reported by the U.S. Census, the residential population of this representative area was 35,217 in 1990 and 38,759 in 2000 (a 10 percent increase). In 1990, approximately 9 percent of residents were under seven years old, 14 percent were 7 to 17, and 16 percent were 65 or older (one of the highest percentages of the 7 study areas).

Environment Types

Residential Environment

The residential areas in the study area are situated on curvilinear streets that wrap around steep hills between the Major Deegan Expressway and the Jerome Park Reservoir. Buildings range from large apartment houses with wide setbacks to rowhouses and single-family homes. The topography of the area is hilly and several sets of staircases built in place of streets connect the blocks heading west from the Jerome Park Reservoir. The north side of the study area, Van Cortlandt Village, contains a variety of large, brick apartment buildings, duplexes, and smaller homes. At the far edge of this neighborhood are two high-rise residential towers. Most buildings in this area have front, rear, and side yards, and mature street trees. The area's proximity to Van Cortlandt Park is reflected in the care given to the streetscapes.

Moving southwest toward Kingsbridge, the residential street pattern retains its curvilinear form, but trees become less dense and apartment buildings vary more in design from the typical brick structures lining Sedgwick Avenue. An older and larger variety of residences is found in the Kingsbridge neighborhood, along streets such as Fort Independent Street and Kingsbridge Terrace. Many of these buildings also have front, rear, and side yards. Several community gardens and vacant lots are found within this area. Kingsbridge Heights is the neighborhood south of the reservoir, and contains large brick apartment buildings that form a consistent streetwall. The massing of these structures is

different from that of the previous two neighborhoods, as few if any visible front, rear, or side yards exist. Many of the buildings have front stoops, but porches are rare.

Community Facilities and Institutional Uses

The eastern half of the study area, between the Jerome Park Reservoir and Jerome Avenue, contains several large school complexes. From north to south, DeWitt Clinton High School, Bronx High School of Science, Lehman College (CUNY), Walton High School, P.S. 86, and P.S. 340 line the east side of Goulden Avenue. DeWitt Clinton H.S. and Bronx Science H.S. have large sports fields between them, including baseball and football fields. Harris Park covers the large block south of Bronx Science, and features several large baseball fields. The campus of Lehman College contains ample open space, and Walton H.S. has a large central open space at its entry, which faces north. Behind P.S. 86 is a concrete play area, and P.S. 340, which is a new school, also has open space on its east side. Aside from these schools, several others dot the study area, including P.S. 360 and M.S. 143 on Kingsbridge Terrace, P.S./M.S. 95 on Sedgwick Avenue, and Our Lady of Angels School near Reservoir Drive.

Other institutional uses in the area include three elder care facilities: Terrace Health Care Center (HCC) on Kingsbridge Terrace, Kingsbridge Heights Rehabilitation and Care Center on Giles Place, and the St. Patrick Home on Van Cortlandt Park South. Terrace HCC has a landscaped seating area in front of the building. The St. Patrick Home has a covered front patio facing Van Cortlandt Park. All three facilities appear to have operable windows.

Commercial Uses

Very few commercial uses are located in the study area. A row of small stores is found on Bailey Avenue facing the Major Deegan Expressway. Another small node of neighborhood services, including a grocery store, deli, and pizza shop, is located where Van Cortlandt Avenue and Sedgwick Place intersect. Several other stores are scattered throughout the western half of the study area, but no significant concentrations of retail, office, or other commercial space exist here.

Parks and Publicly Accessible Open Spaces

Open spaces in the area are plentiful and well maintained. Parks include a portion of Van Cortlandt Park, the Bronx's flagship park and the third largest park in the city; Harris Park to the east of the Jerome Park Reservoir, which features baseball, football, and soccer fields; and Fort Independence Park, a playground and seating area along the northwest side of the reservoir. Fort Four Park is a linear park that curves along the south side of the reservoir and features playgrounds, basketball courts, a spray fountain, and scenic overlook. One community garden is found in the area behind Kingsbridge Heights Community Center, and features play equipment in addition to the garden itself.

Van Cortlandt Park

Van Cortlandt Park covers 1,146 acres and includes many types of active and passive recreational activity. The organization of this historic park generally features playgrounds and ballfields around its perimeter and passive uses in the central areas. While the active uses around the park's exterior are generally well-maintained and heavily used, the interior (mostly wooded) portions of Van Cortlandt Park are less heavily traveled and, in some areas, less well-maintained. The study area contains the southern quarter of the park, which is primarily active open space. Classic Playground and a small open lawn are located along Van Cortlandt Park South. Other uses unique to the area are found along Broadway, including handball courts, a running track, and football/soccer fields. To the north of these active uses are the historic Van Cortlandt House Museum and a group of tennis courts. In addition,

the 1.5-mile John Muir Nature Trail is located to the east of the museum. On the east side of the park, several playgrounds and the Moshulu Golf Course and driving range provide open space that is accessible from Jerome Avenue.

Industrial Uses

The only industrial uses within the study area are along the eastern boundary at Jerome Avenue. New York City Transit operates a large rail yard that covers several blocks, south of which is a concentration of automotive service stations.

Summary of Outdoor Activities

This study area contains a large amount of well-maintained open space where most of the area's outdoor activity takes place. The southern end of Van Cortlandt Park contains playgrounds and ballfields that are used throughout the year, while smaller linear parks such as Fort Four Playground and Fort Independence Park provide active and passive open space in the form of shady seating areas, playgrounds, ball courts, and fountains. The front porches of apartment buildings and residences are also places to gather, as are the school playgrounds and Harris Park on the eastern side of the study area. During the summer, activities at the schools in the area decline substantially, especially during late afternoons.

Zoning and Public Policy

The land uses in Jerome Park/Van Cortlandt Park South reflect the underlying zoning: predominantly moderate-density residential. The vast majority of land in this study area is covered by R6 zoning districts, with a small portion of land between the Jerome Park Reservoir and Van Cortlandt Park, and east of the reservoir, zoned R7-1, for slightly higher-density residential uses. There are also two small areas zoned C8-1.

UPPER EAST SIDE

This area encompasses approximately 90 city blocks, most of which contain high-density residential buildings. This area also includes a portion of Central Park, which contains a birding area known as the Ramble, the Shakespeare Garden, the Great Lawn, the Metropolitan Museum of Art, the Central Park Reservoir and surrounding running track, as well as a number of other wooded and open areas. It is also a major segment of the migratory bird flyway that passes through the City in the spring and fall.

As shown in Figure 3.B-6, the Upper East Side study area specifically covers the park from approximately 72nd Street to 96th Street. East of the park between Fifth Avenue and the East River, the area includes streets from 84th Street to 96th Street. These blocks are predominantly high-density residential, with styles ranging from mid-rise row houses to high-rise apartment towers. While front yards are almost non-existent, most older row-houses on mid-blocks have small rear yards and gardens. The Lexington Avenue subway runs through the area, making stops at 86th Street and 96th Street.

The study area includes a heavily traveled portion of Museum Mile along Fifth Avenue; destination retail on Madison Avenue and on 86th Street; local retail on Lexington Avenue, Third Avenue, and Second Avenue; and many restaurants and bars, especially along Second Avenue. In addition to Central Park, an important park is Carl Shurz Park, along the East River, which contains paved walkways, a dog run, a riverfront esplanade, a children's playground, and basketball courts. Asphalt

Green, at 92nd Street, is a significant active recreational area, with a large outdoor turf-field and indoor athletic and swimming facilities. A number of smaller public and private schools dot the area.

Based on information reported by the U.S. Census, the population of this Representative Area was 73,011 residents in 1990 and 76,741 in 2000 (a 5 percent increase). In 1990, approximately 5 percent of residents were under 7 years old, 7 percent were 7 to 17, and 12 percent were 65 or older.

Environment Types

Residential Environment

The Upper East Side is a dense residential neighborhood filled with mid- to high-rise apartment buildings. Over 95 percent of the structures in the area are residential, and virtually every residential building exceeds three stories (approximately a quarter of the area is covered by residences over six stories). Most residences along side streets are of the row-house variety, ranging from four to six stories in height, while the avenues contain a more even mix of rowhouses and high-rise apartment towers. Along 86th Street, as well as Park, Third, Second, and York Avenues, a good number of residential buildings exceed fifteen stories in height.

Most of the Upper East Side's rowhouses rise directly up, with no setback from the street, eliminating the possibility of any significant front yard. These rowhouses do, however, have small gardens in the rear, accessible via ground-floor or garden apartments. Many of the apartment towers in this area are set back from the street and contain street-level plazas with benches, shrubs, trees, and/or fountains. While most of these plazas are often underused or empty, some of the better-designed plazas consistently draw both pedestrians and residents to their benches and greenery. Balconies and terraces are also a consistent feature of these residential towers, although most of them are not heavily used.

Of particular interest are the Stanley Isaacs Houses east of First Avenue between 92nd and 95th Streets. This public housing complex is typical of the 1960's tower-in-the-park style housing seen throughout the City. As in other public housing complexes, the Isaacs Houses contain a number of tall towers, each with three or more wings, surrounded by small patches of grass, sitting areas, playgrounds, and paved walkways. On a typical summer day, the benches and playgrounds of the Isaacs Houses are full with a range of age groups, most of whom are children and older residents.

Community Facilities and Institutional Uses

Schools dominate the Upper East Side's landscape of community facilities, in large part due to the preponderance of children in the area. Approximately 20 public, private, and parochial elementary schools, intermediate schools and high schools dot the area, clustering around Park, Madison, and Fifth Avenues. These schools range from small prep schools enrolling fewer than 100 students, to larger elementary schools (P.S. 151, The Dalton School) and high schools (Richard Green H.S. of Teaching) enrolling more than 600 students. Most of these schools occupy buildings taking up considerably less than a full city block, and only a few have outdoor playgrounds.

The portion of Museum Mile that runs through the area along Fifth Avenue is a major draw for pedestrians—tourists and New Yorkers alike. On Thursday and Friday evenings, as well as throughout the weekend, the sidewalks of Fifth Avenue running from the Metropolitan Museum of Art west of 82nd Street in Central Park to the International Center of Photography on 94th Street, teem with pedestrians. These pedestrians, combined with the many cars, taxis, and buses running down the Avenue, make this strip a central node of activity in the area.

Commercial Uses

With the exception of Fifth and Park Avenues, the avenues of the Upper East Side are uniformly lined with retail establishments, as are the wide 86th and 96th Streets. Commercial uses most frequently take the form of ground-floor storefronts with residences above. Generally, Madison Avenue contains upscale shops and boutiques; Lexington, First, York, and East End Avenues have smaller shops, take-out food establishments, utility retail stores, and the occasional restaurant; and Third and Second Avenues contain the area's main cluster of restaurants.

For the purposes of this analysis, the commercial uses of most interest are the numerous restaurants with outdoor seating along Third and Second Avenues. About one-quarter of the restaurants on Third and Second Avenues have open-air dining in the form of either sidewalk seating or rear gardens. The quantity of seating varies from just two or three tables, to over fifty seats at some restaurants

Parks and Publicly Accessible Open Spaces

The Upper East Side contains three types of open spaces: large parks like Central Park and Carl Schurz Park (described in detail below); smaller, avenue-fronting parks and playgrounds; and public plazas and courtyards, often at the base of tall residential towers. The few smaller parks and playgrounds in the area dot the Avenues north of 90th Street. These include the Lexington Avenue Playground at 96th Street, Ruppert Park (on Second Avenue between 90th and 91st Streets), Dekovats Park (on York between 91st and 92nd Streets), and Stanley Isaacs Park (on First between 95th and 97th Streets).

The Stanley Issacs Houses, a public housing complex east of First Avenue between 92nd and 96th Streets, consists of a number of residential towers surrounded by small playgrounds, sitting areas, and public walkways. This layout is similar to many public housing complexes in the city, with green space surrounding living space. The benches at the Issacs Houses are often filled with older residents at leisure, while the playgrounds are less crowded, but still contain some children playing.

At the base of many taller residential towers, public plazas have been created as passive recreation amenities for the neighborhood. However, most of the ten or so plazas in the study area are underused, with benches or seats occupied by fewer than five people on average.

Central Park

Central Park, covering a total of 843 acres, is the most heavily used park in New York City. The study area portion of the park, which includes approximately half its acreage, runs from 72nd Street to 96th Street. While estimating the use of this area of the park is a difficult proposition, it would be safe to assume that early evening users number well into the thousands and perhaps into the tens of thousands. Likely, due to its size, the age breakdown of Central Park users echoes that of its surrounding communities. The study area portion of the park includes a representative sample of the park's typical habitats and uses: areas of woodlands; wetlands; plazas; fountains; open fields; water bodies; playgrounds; ballfields; walking, jogging, and biking paths; and a museum and an open-air theater.

Four major features of the park predominate in this area. From north to south, they are: the Reservoir (and its surrounding jogging path); the newly restored Great Lawn, which is used by softball and soccer players as well as for passive recreation; the dense woods area called the Ramble, which is a more isolated and quiet section of the park frequented by birdwatchers (250 species of birds have been recorded within the park's borders); and the Lake. Also to be noted is the Loop, a two-lane road which circles the park. Like the Reservoir track, the Loop is used by joggers, but is also a favorite

road for rollerbladers and cyclists. When closed to traffic at 7 pm each weeknight (and all day on weekends and holidays), the entire width of the loop is taken over by active recreation uses. On summer evenings, Shakespeare in the Park takes place at the open-air Delacorte Theater just south of the Great Lawn.

Carl Schurz Park/East Side Esplanade

The entire East River border of the study area is lined by open spaces, with an esplanade (the John Finley Walk and Bobby Wagner Walk) running from 84th to 96th Streets and beyond, and Carl Schurz Park, occupying the space between York Avenue and the East River, from 84th Street to Gracie Mansion at 89th Street. Benches line the East River walks, while the Park contains a dog run, basketball and roller hockey courts, sitting areas, and playgrounds. After Central Park, Carl Schurz Park and its adjacent esplanade are the most heavily used open spaces in the area. In the early evenings, 200 to 300 walkers, runners, readers, basketball and hockey players, dog owners, and others can be found in the park. Field surveys found the majority of users to be adults, with those over 65 comprising about 20 percent of users, and those under 12 making up approximately 5 percent of users.

Industrial Uses

The Upper East Side does not contain any industrial uses.

Summary of Outdoor Activities

On a typical summer late afternoon/evening, the Upper East Side buzzes with street-level activity. However, unlike some other neighborhoods in New York City, the Upper East outdoor activity occurs more in spaces formally designed for such activity (jogging on jogging paths, eating in restaurants with sidewalk cafes) than in informal spaces (street corner card or dominos games, children playing in the streets).

Most visible are commuters returning home from work from the Lexington Avenue subway stops at 86th and 96th Streets, and walking along avenues and streets on their way to and from evening activities. If the weather is nice, outdoor seats at restaurants along Second and Third Avenues are filled to capacity, while rear gardens and some rooftops are the site of summer barbecues and cocktail parties. On Thursdays and Fridays, when museums are open late, the sidewalks of the Museum Mile are crowded with pedestrians. Joggers can be seen running along side streets, and on the paths of Carl Schurz Park and Central Park. During the summer, activities at the schools in the area decline substantially, especially during late afternoons.

Zoning and Public Policy

The Upper East Side is covered by a multitude of residential and commercial zoning districts, most of which permit high-density residential uses as well as a wide range of local retail and service establishments. The land uses in this area reflect this underlying zoning: residential uses along all midblocks (which are often covered by R8B zoning districts) and residential uses with ground-floor and/or first- and second-floor retail uses along avenues and major cross-streets (which are usually covered by C1, C2, and other commercial zoning districts). Two special districts in the vicinity of Park, Madison, and Fifth Avenues—the Park Improvement District and the Madison Avenue Preservation District—are intended to preserve and reinforce the character of these avenues through use, bulk, and design restrictions and requirements.

LEMON CREEK/WOLFE'S POND PARK

This area in southern Staten Island is characterized by its substantial natural areas and suburban land uses. The Lemon Creek watershed contains delineated freshwater and tidal wetlands in one of the largest assemblages of wetlands on Staten Island. The creek has three freshwater feeding tributaries that add to the habitat value of the diversity of the tidal wetlands by providing freshwater and saline habitats. The watershed is also designated by NYSDOS as a Significant Coastal Fish and Wildlife Habitat. Wildlife species in the area include mallards, egrets, green heron, blue heron, muskrats, and fiddler crabs. There is a purple martin colony in Lemon Creek Park, the only significant such colony in the City.

The area is predominantly residential with single-family and two-family detached and attached houses (see Figure 3.B-7). Most of the houses are two or three stories and have front and rear yards and driveways. Many of the homes have pools, balconies, and outdoor furniture. The area is characterized by houses on medium- to large-sized lots.

The area has two large public parks—Wolfe's Pond Park and Lemon Creek Park. These parks provide shoreline access as well as recreational facilities and passive sitting and eating areas. The study area has both tidal and non-tidal wetlands, upland fields, and forest. Additional tidal and non-tidal wetlands are found in a wetlands protection area under the jurisdiction of NYSDEC.

The study area has several public schools, including Tottenville High School, P.S. 3, and I.S. 7. Other institutional facilities include Staten Island Hospital, a pre-school, several churches, and a summer camp. The Staten Island Rapid Transit line runs along the northern portion of the study area. The few commercial uses in the study area are storefronts along Seguine Avenue and Amboy Road. There are two shopping plazas at the intersection of the two thoroughfares.

Based on information reported by the U.S. Census, the residential population of this Representative Area was 3,382 in 1990 and 4,977 in 2000 (a 47 percent increase). In 1990, approximately 10 percent of residents were under 7 years old, 15 percent were 7 to 17, and 8 percent were 65 or older.

Environment Types

Residential Environment

The Lemon Creek/Wolfe's Pond Park area is a low-density residential neighborhood filled with 2- to 3-story single- and two-family attached and detached houses. Approximately a quarter of the study area is residential, with houses running the entire length of the tree-lined side streets, except where interrupted by institutional uses or open spaces. All of the residential buildings in the study area are 3 or fewer stories. The majority of houses in the study area are of the single-family detached variety, located largely on medium to large lots. Mixed in amongst such residences are two-family houses and attached residences. Most of the houses in the study area are set back from the street with a front lawn and driveway. Rear yards, many with above-ground or in-ground swimming pools and trees, are common in the study area.

Of particular interest is the Captain's Quarters community, a townhouse complex located south of Hylan Boulevard, east of Bayview Avenue. This 266-unit townhouse complex has a community pool and tennis courts. Most of the homes have yards, balconies, and back porches with play equipment. A wooded ravine is located at the center of the community.

Community Facilities and Institutional Uses

Three public schools—a primary school, an intermediate school, and a high school—are located within the study area. Tottenville High School, sited on a large campus, contains well-maintained football and soccer fields, a track, baseball/softball fields, tennis courts, handball courts, and basketball courts, in addition to its academic facilities, all of which are heavily used during the school year, and used, to some extent, year-round as a popular place for jogging and rollerblading. P.S. 3 has an outdoor play area as well, consisting of an asphalt field with basketball hoops and baseball backstops. I.S. 7, also known as the Bernstein School, is located at the corner of Hylan Boulevard and Huguenot Avenue. Its play area is also a 1.1-acre city park. It contains swings, play equipment, a spray shower, basketball courts, and a greenhouse. The Babes in Toyland preschool, located on Seguine Avenue south of Hylan Boulevard, is the only private educational facility in the study area.

Staten Island University Hospital, on Seguine Avenue south of Hylan Boulevard, is another major community facility in the area. Many of the hospital windows are operable. The hospital has about 200 beds and is part of the larger system of Staten Island University health care facilities.

Camp St. Edwards is located south of Hylan Boulevard at Woodvale Avenue. Camp facilities include a pool and outdoor play area.

Commercial Uses

The study area has few commercial uses. The few retail establishments are located along Amboy Road and Seguine Avenue, with the majority of retail shops located in two community shopping centers at the intersection of the two thoroughfares. The shopping in the study area is automobile-oriented, with few shoppers arriving by foot. There is no outdoor seating at the few restaurants. Stores such as pharmacies, hair salons, nail salons, delis, restaurants, and caterers largely serve neighborhood needs.

Parks and Publicly Accessible Open Spaces

Approximately a third of the study area is parkland or open space. Most of the open space in the area is woodland or wetlands, with little of the parkland dedicated to active outdoor facilities. Two large parks, Lemon Creek Park and Wolfe's Pond Park, as well as a NYSDEC-protected wetlands area, are located in the study area. The NYCDEP Bluebelt, a wetland buffer zone, is located between Androvette and Luten Avenues from Hylan Boulevard to Billiou Street and west of Bayview Avenue just north of Excelsior Avenue.

Wolfe's Pond Park

With 70 percent of its acreage undeveloped, Wolfe's Pond Park is the largest open space in the study area. The 341-acre park is bound by the Staten Island Rapid Transit line to the north, Holten Street to the west, Chisholm Street and Luten Avenue to the east, and the Atlantic Ocean to the south. The park contains several natural communities, including an intertidal and dune area, forests, streams, freshwater wetlands, and a ravine. The park is bisected by Hylan Boulevard, which traverses east and west through the park. The portion of the park north of Hylan Boulevard is forested, largely undeveloped, and lightly used. The 2.9-acre Acme Pond is located immediately north of the boulevard. The southern portion of the park, which contains the park's athletic facilities as well as its passive recreational amenities, is heavily used by adults and children. It contains a large parking area, play equipment, beach access, picnic tables, barbecues, a playing field, tennis courts, a roller hockey rink, and a bathhouse. The 15.3-acre Wolfe's Pond, the larger of the two freshwater ponds in the park, is adjacent to the recreational facilities. The southern park segment also contains a large forested area.

New York City Parks and Recreation Urban Park Rangers lead classes in beach ecology, water systems, plants and wildlife at the park.

Lemon Creek Park

Lemon Creek Park is a 106-acre park. Its waterfront area lines the tidal reaches of Lemon Creek where it meets Raritan Bay. This section of the park is separated from the remainder of the park by Johnston Terrace and is bounded on the west by Sharott Avenue and on the east by Seguine Avenue. The park's northern boundary is Hylan Boulevard. The northern section of the park begins south of Hylan Boulevard between Seguine and Bayview Avenues. At the base of Bayview Avenue, the park continues west along Johnston Terrace and ends at Sharott Avenue. A small stretch of beach forms the park's southern boundary. The northern end of Lemon Creek Park is not well-used because of the steep geography surrounding the creek, which winds through the park and lies in a tree-lined ravine. The park's only facilities are a fishing pier and the marinas located at the outlet of the creek, which are leased to private marina operators. This portion of the park is heavily used by both boaters and community residents. While not a designated beach, the waterfront portion of the park is used for sunbathing and picnicking during the summer months. The remainder of the park is passive open space and a favored destination for birders and naturalists. The park hosts a colony of purple martins, a bird species uncommon in the northeastern United States.

DEC Wetlands Preserve

North of Lemon Creek Park across Hylan Boulevard is the 32-acre New York State Department of Environmental Conservation (DEC) tidal wetland preservation area. The preserve, which contains both tidal and fresh water wetlands, is dedicated strictly to conservation.

Industrial Uses

The only industrial use in the area is a New York City Department of Design and Construction site located at the intersection of Hylan Boulevard, Johnston Terrace, and Sharott Avenue.

Summary of Outdoor Activities

Southern Staten Island is a car-oriented residential neighborhood. Thus, there is little pedestrian traffic on the relatively quiet streets. The major gathering places in the study area are large public spaces such as Wolfe's Pond Park and Tottenville High School, and also front and rear yards of private residences. The park draws users of all ages because of its variety of activities. Most homes in the study area are designed for outdoor recreation and have rear yards equipped with pools, lawns, or porches. During the summer, activities at the five large schools in the area decline substantially, especially during late afternoons.

Zoning and Public Policy

The Lemon Creek/Wolfe's Pond Park area includes the lowest-density zoning district in the city (R1), as well as a slightly higher but still low density R3-2 district. Land uses in this area reflect the underlying zoning: predominantly single-family detached homes with front and rear yards and driveways. The entirety of the study area falls within the Special South Richmond Development District, which seeks to preserve the area's rural character by mandating tree preservation, controlling changes to topography, and setting height limits and curb cut restrictions in certain areas. Along portions of Lutten Avenue and in the vicinity of Lemon Creek, the district includes an open space network, which restricts development while allowing property owners to transfer development rights from the preserved area to the balance of their property.

C. THE FUTURE NO ACTION CONDITIONS

Land uses in the seven representative study areas are not expected to change significantly in the future without the proposed project. While land uses may change on specific sites as the result of individual development projects, the predominant land uses in each area are expected to remain generally the same as identified above, in “Existing Conditions.”

In the future without the proposed project, the NYCDOH would continue its *Routine Program* to control mosquito breeding while enhancing existing disease surveillance and public and medical provider education activities. The portion of the *Routine Program* most relevant to the use of land is the public education campaign, which advises the public on how to minimize their potential risk of acquiring a mosquito-borne infection. As part of the education campaign, the public is advised to avoid potential mosquito breeding grounds during times of mosquito activity at dusk and dawn and to wear protective clothing and insect repellent.

While the *Routine Program* would continue regardless of the adulticiding activities, the presence of adult mosquito-borne viruses would likely be greater in the future without the proposed project. Without the proposed adulticiding activities to reduce the public health threat from mosquito-borne pathogens, public concern about viruses is likely to be higher and the public may likely avoid certain outdoor areas during times of mosquito activity.

Should the incidence of the transmission of adult mosquito-borne viruses increase dramatically, which is a possibility in the future without the adulticiding activities, avoidance of outdoor areas at dawn and dusk—as advised by the *Routine Program’s* public education campaign—may occur during the time periods that viruses break out in the summer.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

The application of adulticides under this proposed program is not expected to directly change the use of land within the seven study areas. However, it may cause some spaces normally open to public use to be closed immediately before, during, and shortly after application. This would be considered a direct short-term impact to that use.

The EIS conservatively assumes that up to ten applications could occur in any area of the City, from May to October. The use of outdoor areas would be diminished during the times of spraying and, most likely, in the hours immediately before and after spraying occurs. This analysis focuses on these instances, examining the direct impacts of land use closures during these periods. It should be noted that, while the adulticide application would result in the temporary closure of parks and some other public spaces during the application period, the effects of the application on land use are not expected to be significantly greater than the No Action condition. That is, the public’s reduced use of outdoor areas as a result of high incidences of adult mosquito-borne viruses would be similar to, and may exceed, the public’s reduced use of outdoor spaces as a result of the adulticide application.

COLLEGE POINT

Land uses that may be affected by adulticiding activities in the College Point study area are retail uses, public and private outdoor recreational facilities, and outdoor residential elements. The cluster of large chain stores on 14th Avenue, as well as the ground-floor retail uses along College Point Boulevard, are patronized by customers who arrive largely by car and park in the accessory parking lot located in the front of the retail strip. Shoppers would only be outside when walking from their cars to the stores. While shoppers would be advised to, and would likely avoid being outdoors during

the period of application itself (which would reduce patronage), this reduction would be limited to the immediate period of application.

As described in “Existing Conditions,” above, there are several marinas and yacht clubs in the College Point study area. Marina users would be advised to, and would likely avoid using the marina facilities during the period of adulticiding activities, although since this would likely be in the evening or very early morning hours, the use of such facilities would likely be limited during these time periods even if no spraying occurred. In addition, marina operators may choose to close their facilities during the evenings of adulticiding activities, but such closures would be voluntary. Additionally, the fishing pier adjacent to the Tallman Island Water Pollution Control Plant may be closed to the public during periods of application, but these closures would likely be limited to nighttime hours.

The public parks in the area would likely be closed to public use during adulticiding activities, thereby prohibiting their use for specified time periods during the evening and early morning hours. Any scheduled activities on park grounds would either be cancelled or postponed. However, parks that currently close at dusk would not be affected by adulticiding activities, which would occur at night. Like public parks, the public school grounds made available for public use during the summer and evening hours may be closed during the period of adulticiding activities. However, the application period would occur between the sunset and sunrise hours, when school recreational grounds would be lightly used or not used at all.

Nursing home operators may close their outdoor facilities to residents during and potentially subsequent to adulticiding activities, thereby prohibiting their use. Furthermore, the use of private outdoor facilities in the area, such as front and rear yards, pools, and decks, would be cautioned against during the hours of application. Thus, the frequency of use of such outdoor activities would decrease. While no land uses devoted entirely to gardening were identified in the study area, it is possible that residential uses containing outdoor gardens would be affected. The adulticiding activities would require the covering of outdoor gardens during application periods.

Outdoor facilities such as public parks and school grounds or private outdoor recreational facilities may be closed during periods of application, thereby prohibiting their use by the public during these restricted times. Commercial activity may also decrease during these restricted time periods, but this decrease should not extend beyond the application period. However, no significant adverse land use impacts are expected in the College Point study area as a result of the proposed adulticiding activities.

JAMAICA BAY/PAERDEGAT BASIN

The land uses in this area are similar to those in the College Point area, and potential impacts of the adulticiding activities would be similar to those discussed above. This discussion focuses on land uses identified for Jamaica Bay/Paerdegat Basin in addition to those that have been discussed above. The Paerdegat Basin area contains two mid-sized parks with a number of softball fields, tennis courts, and basketball courts. To the extent that parks such as these have lighting which permits use after dark, such use would be prohibited during periods of adulticiding activities. The application is also likely to curtail use of Canarsie Pier for any fishing or outdoor activities that take place toward dusk and after dark. Similarly, the recreational components of Gateway National Recreation Area, in Jamaica Bay, are predominantly limited to daylight hours, so the application is unlikely to disturb the majority of activities there. However, since avian species are most active towards dusk, the adulticiding activities are likely to curtail early evening birdwatching activities in areas of Jamaica Bay during the nights when application would occur.

Horseback riding at the Jamaica Bay Riding Academy would be curtailed after dark during periods of application, but it is doubtful that significant riding activities currently occur after dark. Boating activity at the many yacht clubs along the basin would be curtailed during application periods; however, such activity is limited after daylight hours and would not be significantly impacted by the application.

Overall, no significant adverse land use impacts are expected in the Jamaica Bay/Paerdegat Basin study area as a result of the proposed adultciding activities.

EDGEMERE/FAR ROCKAWAY

Land uses with the greatest potential to be impacted by adultciding activities are Rockaway Beach and the outdoor components (sitting area, playgrounds, walkways) of the area's four housing complexes. Use of Rockaway Beach declines substantially after dark, so the adultciding activities would not significantly reduce the number of people using the beach. However, in Edgemere/Far Rockaway, summer evenings are times of heavy outdoor activity in sitting areas, in small paved playgrounds and parks, and on neighborhood streets and sidewalks. The adultciding activities would significantly reduce the levels of outdoor activity immediately before, during, and after application. While this change in activity would not be considered a significant adverse impact on land use, it would be noticeable and would change the degree of use of outdoor public land in neighborhoods such as this.

HUNTS POINT/SOUNDVIEW

The residential, commercial, and park uses in Hunts Point/Soundview would be affected by adultciding activities in the same manner as in the areas discussed above. In addition, food at the Hunts Point Food Distribution Center, especially produce, would have to be protected during periods of adultciding activities. The application would effectively prevent the loading or unloading of produce at the market during the period of application. While this may require activities at the Produce Market to be altered, it is not likely to result in a significant adverse impact on the use of the market.

JEROME PARK

Jerome Park contains a number of outdoor institutional spaces (at Lehman College, DeWitt Clinton H.S., Bronx High School of Science) with uses that have the potential to be curtailed by the adultciding activities. Since application would occur at night during the summer, users of institutional facilities such as lawns, baseball fields, and running tracks, are likely to be few. However, any summer nighttime events scheduled to take place in these areas would be cancelled should they coincide with times of adultciding activities.

Van Cortlandt Village contains a number of houses with sizeable front, rear, and side yards, the use of which would be curtailed during periods of application. Likewise, outdoor patios of the elder care facilities in the area are likely to be closed during application periods.

Van Cortlandt Park is likely to be closed during adultciding activities periods, which would curtail both organized and unprogrammed activities that occur there at dusk and after dark. Since the park is one of the city's largest, the application is likely to reduce substantially the number of people who use the park during these times. However, it is not likely to result in a significant adverse land use impact on Van Cortlandt Park.

Overall, no significant adverse land use impacts are anticipated in the Jerome Park study area as a result of the adulticiding activities.

UPPER EAST SIDE

Land uses in the Upper East Side study area with the greatest potential to be affected by adulticiding activities include Central Park and Carl Shurz Park; restaurants with outdoor seating along Second and Third Avenues; public plazas and sitting areas; and the rear gardens, balconies, and terraces of residential buildings. Since this area is one of the more densely populated areas in New York City, residents rely heavily on outdoor uses, especially during the summer. Since this area is characterized by high levels of pedestrian activity, the adulticiding activities are likely to reduce significantly such activity for limited time periods.

During periods of adulticiding activities, many areas of Central Park would be closed to public use. Since this park, unlike many smaller parks throughout the area, has a substantial degree of after-dark activity, the affects of the nighttime application will be greater than in other parks. All scheduled summer events, such as Shakespeare in the Park and New York Philharmonic performances, would be cancelled during periods of application. Dusk and nighttime recreational activities such as jogging, rollerblading, and bicycling along the park drive and in other areas of the park, would be prohibited. Carl Shurz Park also contains a high degree of nighttime activity, although significantly less than Central Park. The use of the park's dog run and East River esplanade is likely to be most heavily impacted by the adulticiding activities.

The adulticiding activities are likely to reduce patronage of outdoor cafes and restaurants with outdoor seating in the Upper East Side for limited time periods. While this may affect some restaurants economically, it is not likely to cause the permanent closure of any restaurants which could result in a change to land use. Some of the many schools in the area have outdoor and/or rooftop playgrounds which would most likely be closed during periods of application. However, since use of these areas at night during the summer is limited, this would not substantially affect the degree to which these areas are used.

Uses accessory to residential uses (in yards, on terraces and balconies, at public plazas) would also be reduced for a limited time as a result of the adulticiding activities. However, this would not cause a change to the way these areas are used outside the periods of adulticiding activities.

While the adulticiding activities would curtail outdoor uses, especially in Central Park and at local restaurants, it would be limited in duration and would not result in significant adverse land use impacts on those uses.

LEMON CREEK/WOLFE'S POND

As the Lemon Creek/Wolfe's Pond study area is a largely car-oriented residential community, there is little pedestrian activity that would be affected by the proposed adulticiding activities. The study area contains little commercial use, and most retail uses are concentrated at two shopping centers located at the intersection of Seguine Avenue and Amboy Road, which would not be significantly affected by the application, as discussed in the College Point study area discussion, above. The study area's two large parks, Wolfe's Pond and Lemon Creek, would be closed to public use during the application period

As at hospitals and elder care facilities in the other study areas, patients at Staten Island University Hospital would likely be required to refrain from opening their windows during the application period and potentially for a specified time thereafter.

Much of the outdoor activity in the study area takes place in the rear yards of private residences. Residents would likely refrain from using their yards during the application periods. Residents may also decrease the frequency of outdoor activities such as swimming, sitting on balconies or lawn furniture, barbequing, or gardening in rear yards during the application periods.

Overall, no significant adverse land use impacts are anticipated in the Lemon Creek/Wolfe's Pond study area as a result of the aduaticiding activities. ☞

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