**FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR THE CROTON WATER TREATMENT PLANT**
**METHODOLOGIES**

## 4.5. OPEN SPACE ANALYSIS

### 4.5.1. Introduction

Open space is defined as publicly or privately owned land that is publicly accessible and has been designated for leisure, play, or sport. Uses of open space are categorized as active or passive. Active open space is used for sports, exercise or active play; passive open space is used for sitting and relaxing. Open space can also be classified as land that has been set aside for the protection and/or enhancement of the natural environment.

The purpose of an open space analysis is to determine whether or not a proposed action would have either a direct or indirect impact on existing open space within the study area. Direct impacts physically change, diminish, or eliminate an open space or reduce its utilization or aesthetic value. Indirect impacts can occur if a significant new user population is introduced into the study area and would create or exacerbate an over-utilization of open space resources. To make this determination, the significance of a particular project impact is defined in quantitative and/or qualitative terms. Quantitative impacts include: (1) the direct displacement/alteration of existing open space within the study area that has a significant adverse effect on existing users, unless the proposed action would provide a comparable replacement; and/or (2) the reduction of open space ratios (i.e., acreage of open space to number of users), resulting in the overburdening of existing facilities or further intensification of a deficiency in open space. Qualitative impacts include significant physical impacts on existing open space in terms of increasing shadow, noise, air pollutant emissions, or odors as compared to the Future Without the Project conditions. Actions addressing quantitative open space needs but causing a qualitative impact compared to the no action condition may also be considered significant.

### 4.5.2. Baseline Conditions

#### *4.5.2.1. Existing Conditions*

The open space study area is defined to permit analysis of nearby open spaces and the population using those open spaces. Generally, a reasonable walking distance defines the study area that users would travel to reach local open space and recreation areas. This is typically a one-half mile radius for residential users and a one-quarter mile radius for those working at a commercial project site within the study area.

A one-half mile study area was created around the Eastview Site, Mosholu Site, Harlem River Site and New Croton Aqueduct (NCA) Shaft Sites. For this analysis, the study areas were defined to include the boundaries of construction disruption limits, including staging areas, and not simply the footprint of the proposed structures. The study areas were then extended for a particular site if investigations showed a wider utilization pattern. For the Eastview Site and NCA Shaft Sites located in suburban Westchester County, where park users are more likely to drive or take public transportation to access open space resources, the resources located within the study area for each site were identified accordingly using information gathered in the Land Use, Zoning, and Public Policy and Neighborhood Character analysis and supplemental information provided by Westchester County Department of Parks, Recreation and Conservation.

The existing open spaces in the study areas were recorded during site visits and by contacting the appropriate local, county, and city parks and recreation departments. Published open space maps and GIS data from Westchester County were also collected and reviewed. Published data were compared to the information recorded during the site visits and updated when there were inconsistencies. Open space was classified as either public or private. Public open space is accessible to the public on a constant and regular basis or for designated daily periods. Public open space may be under the authority of government or the private sector and can include but is not limited to: parks designated by City, State, or Federal Governments; outdoor schoolyards; ball fields; institutional campuses; playgrounds; esplanades; greenways; recreational facilities; publicly accessible gardens and nature preserves; and beaches. Private open space consists of open space that is not publicly accessible or is available only to limited users and is not available to the public on a constant or regular basis. Private open spaces include health clubs; natural areas or wetlands with no public access; streets; arcades; sidewalks; stoops; undeveloped properties; and front and rear yards.

Both private and public open space resources were characterized as having an active or passive use. Active open spaces include sports, exercise, or active play. Recreational facilities such as playground equipment, playing fields and/or courts, beach areas, pools, skating rinks, and multipurpose play areas may be found within an active open space area. Passive open space is often used for relaxation, such as sitting or strolling. Plazas or medians with seating, portions of beach areas, picnic areas, trails, and strolling areas may all be found within a passive open space area.

Data collected on open space identified within the study area included: the name and address of each open space facility; the owner of the open space; total acreage; the percent of the open space area (and acreage) devoted to active and to passive uses; open space features, types of equipment, facilities, etc.; open space quality; hours of operation and access; user groups; and the level of utilization of the open space area.

To determine if open spaces within study areas located in New York City were being over-utilized, an open space ratio was calculated. The open space ratio is the total number of acres of open space in a study area divided by the study area population (as calculated in the Section 4.7, Data Collection and Impact Methodologies, Socioeconomic Analysis), and then multiplied by 1,000. This calculates the number of acres of open space per 1,000 people residing in the study area. If it were found from a review of existing use surveys that users are coming from outside the study area, then the open space ratio would be recalculated using a larger study area.

$$\text{Open Space Ratio} = \frac{\text{Acres Open Space}}{\text{Study Area Population}} \times 1{,}000 \text{ persons}$$

As a planning goal, the City attempts to achieve a ratio of 2.5 acres per 1,000 persons for large-scale plans and proposals. However, this goal is often not feasible for many areas of the City and does not constitute an impact threshold. Rather, it is a benchmark that represents an area well served by open spaces.

Studies have shown that nonresidents, specifically workers, tend to use passive open space. Typically, 0.15 acres of passive open space per 1,000 nonresidents has been found to be adequate.

Decreases in the open space ratio would generally warrant a more detailed analysis under the following conditions:

- If the decrease in the open space ratio would approach or exceed 5 percent, it is generally considered to be a substantial change, warranting more detailed analysis.

- If the study area exhibits a low open space ratio (e.g., below 1.5 acres per 1,000 residents or 0.15 acres of passive space per 1,000 nonresidential users), indicating a shortfall of open space, even a small decrease in that ratio as a result of the action may have an adverse effect.

#### *4.5.2.2. Future Without the Project*

A projection of future conditions without the proposed project was made to provide baseline conditions against which the impacts of the proposed project could be measured. Data were collected on population projections as well as recreational and open space facilities approved to be constructed or modified by the peak construction and build years. Analysis of the future conditions considered changes to the study area population, study area open spaces, and the future adequacy of those open spaces. Utilization of open space areas was projected after discussions with the New York City Department of Parks and Recreation, the Westchester County Planning Commission and Department of Parks, Recreation, and Conservation, and other relevant state and local agencies.

### 4.5.3. Potential Impacts

#### *4.5.3.1. Potential Project Impacts*

The proposed project could result in potential impacts such as displacement of, or encroachment upon, open space, the introduction of an additional population that would place further demands on existing open space, and disruption of access to open space.

A determination of potential project impacts began with a description of the proposed project and how it could affect open space through the disruption or elimination of open space resources. Information on the study area population was derived from data gathered in the Socioeconomic Conditions section. A determination was made as to whether existing open space resources would be adequate, or whether an area exists that could provide comparable open space amenities within the study area.

Potential project impacts were evaluated in quantitative and qualitative terms. Quantitative impacts include direct displacement and/or alteration of existing open space within the study areas that have a significant effect on existing users. A reduction in the open space ratio, resulting in the overburdening of existing facilities or the worsening of open space deficiency, is

also considered to be a quantitative impact. Qualitative impacts generally consist of a significant physical impact on existing open space in terms of increasing shadows, noise, air pollutant emissions, or odors compared to future conditions without the project. A significant qualitative impact could also occur if open space resources utilized by a specific group (children, baseball players) are adversely affected by the proposed project.

#### *4.5.3.2. Potential Construction Impacts*

The potential disruption or elimination of open space resources resulting from construction activities was identified. The use of, and potential impact(s) upon, open space in relation to staging or other construction activities were evaluated, as was the disruption of activities in open spaces due to elevated noise or dust levels.

### 4.5.4. Mitigation

Mitigation measures for the proposed project were developed when significant adverse impacts on open space resources were identified. Mitigation measures generally include the creation of new public open space on or near the proposed project site, and the improvement of existing open spaces within the study area.