

BRONX RIVER WATERSHED IMPERVIOUS SURFACE METHODOLOGY

PURPOSE

This purpose of this analysis was to calculate amount of impervious cover throughout Bronx River Watershed. Impervious surface calculations were analyzed at the Watershed and the subwatershed level.

DEFINITION OF IMPERVIOUS SURFACES

Impervious surface areas will be analyzed and mapped for the Bronx River Basin using the following approach:

- Watershed and subwatershed analysis by municipality.

The analysis will include the following:

- Structural Features (to determine the amount of impervious surface attributable to structural features such as Buildings, Tanks, Train Stations, Train Platforms, and Miscellaneous Structures)
- Transportation Features (to determine the amount of impervious surface to transportation features such as paved roads, paved alleys, driveways, sidewalks, and paved parking)

The percent impervious surface calculated in this study was based on the area of impervious cover within the Bronx River Watershed, in addition to it's subwatersheds, the Bronx River, Grassy Sprain, and Kensico River Subwatersheds.

METHODOLOGY

Impervious surfaces defined in this study are structures and transportation features. The structure and transportation datasets came from Westchester County's Base Mapping Project in 2000. The datasets have a mapping scale of 1"=100'. The structure dataset consists of buildings, tanks, towers, antennas, train stations, train platforms and miscellaneous structures. Using orthophotography, tanks; towers; antennas; and miscellaneous structures were visually verified to be either on the ground surface or above ground surface. 228 features visually verified to be above the ground surface were removed from the structural dataset. The transportation dataset consists of paved roads, major paved alleys, unpaved roads, paved driveways, public sidewalks and paved parking. Unpaved road features were taken out of the transportation dataset. (For a more detail description of the datasets please refer to the following page.) Municipal boundary, structure, and transportation datasets were clipped to the watershed. Total percentage of impervious area (transportation, structure, and total) were made at the watershed and subwatershed level by municipality.

Source: Datasets used for this analysis were:

Westchester County Municipal Boundaries

Coverage identifies corporate boundaries for all 44 municipal jurisdictions in Westchester County. Coverage originally obtained from New York State Office for Real Property Services (ORPS).

Major Drainage Basins

Coverage identifies county-wide major drainage basin boundaries as automated 1992 from Westchester County Environmental Planning Atlas Hydrologic Features Map.

Minor Drainage Basins

Coverage identifies county-wide minor drainage basin boundaries as automated 1992 from Westchester County Environmental Planning Atlas Hydrologic Features Map.

Westchester County 2000 Base Map Planimetric Data

Data covers the geographic area of Westchester County, New York. Data derived from Spring 2000 (leaf off) photogrammetric base map of Westchester County.

Structural Features

- **BUILDINGS:** Outline edge of roofline. All buildings shall be captured as polygons. In commercial areas especially, it is important that the plotted building represent the face of the building where it meets the sidewalk. Roof breaks for canopies, awnings, patios, etc. will not be captured unless it is evident that the structure is permanent and enclosed. Polygons shall be created for the outer boundary of the building.
Building outlines that exceed tile boundaries must be closed off with the building neatline.
NOTE: The Elevators that are on the ends of RR Pedestrian Bridges will also be captured as building structures.
- **TANKS:** Any petroleum storage tanks or other tanks with base area greater than 500 square feet shall be mapped as polygons
- **TOWERS:** Features such as free standing water towers, transmission line towers, observation towers and other free standing structures shall be mapped as polygons when the perimeter of their base exceeds over 25' on any one side.
- **ANTENNAS:** All radio, TV, microwave, and other antennas mounted on the ground shall be mapped as polygons when they are visible. Antennas or satellite dishes mounted on rooftops shall not be required.
- **TRAIN STATIONS:** All stand alone visible stations and train platforms shall be mapped as polygons.
- **TRAIN PLATFORMS:** All visible train platforms shall be mapped as polygons.
- **MISCELLANEOUS STRUCTURES:** Miscellaneous large structures that do not fit into any of the categories above. Examples include large monuments, and athletic stadiums.

Transportation Features:

- **PAVED ROADS:** Paved roads encompasses the service roads, streets, highways, expressways, and any other roadway intended for use by motor vehicles within the project area. Driveways under 100' in length, and parking lots are not to be captured. In most cases, the compiled feature shall be the face of a curb. If no curb is present then the actual edge of the pavement shall be compiled. Paved roads shall be continuous across driveways. Paved roads shall continue over bridges. Paved roads shall be digitized as closed polygons and closed at sheet edges as appropriate.
- **PAVED ALLEY:** ASI will capture and differentiate major alleys that accommodate emergency vehicles. They do not form blocks, but allow vehicular access to the block's interior. They are generally uncurbed. The Contractor shall be responsible for digitizing the visible edge of the paved way.
- **DRIVEWAYS:** Paved driveways over 100' in length leading up to residential and commercial buildings.
- **SIDEWALKS:** Public Sidewalks shall be mapped as polygons.
- **PAVED PARKING:** Paved Parking over 10 spaces shall be mapped as polygons.

NOTE: Questionable features were viewed with orthophotos and certain features deleted.