

PRELIMINARY WASTEWATER ENGINEERING REPORT

425 S. RIVERSIDE AVENUE

CROTON-ON-HUDSON

WESTCHESTER COUNTY, NY

DATE: DECEMBER 23, 2025

**Prepared By
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39 Arlo Lane
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1.0 INTRODUCTION

1.1 Project Description

The project consists of a proposed 49-unit rental development consisting of 25 one-bedroom and 24 two-bedroom units in a to be constructed 3-story building with requisite parking and amenities (the "Development") to be located on lands fronting on South Riverside Avenue on Tax Map Parcel 79.13-2-91 owned by Carmel Riverside LLC. The site is currently improved with a 12,600 square foot, 1-story brick and block building and associated asphalt parking lot, which is proposed to be removed for the Development.

The proposed building will be served by 79 parking spaces. 56 spaces are located in a below grade parking level and 23 in an outdoor parking area in front of the building, including five (5) Level 2 EV charging stations. Amenities within the building will include a community room, a fitness center, a co-working lounge, E-bike & bike storage rooms and a roof-top deck providing expansive scenic views overlooking Croton Point Bay and the Hudson River.

Sustainable building design features will likely include full electrification, solar readiness, high efficiency HVAC equipment (cold climate air source heat pumps) and appliances (Energy Star Multifamily New Construction Program) and low-flow water fixtures.

In total, the property consists of 83,891 square feet (1.9 ± acres) and is located in the C-2 (Commercial) Zoning District and the HSRG (Harmon/South Riverside Gateway) Gateway Overlay Zoning District, the Village of Corton-on-Hudson Water District and the Ossining Sanitary Sewer District.

1.2 Existing Site Conditions

The subject project is located on South Riverside Avenue across from the ShopRite Plaza in the Village of Croton-On-Hudson. As previously stated, the site currently exists as a commercial development with one 12,600 sf brick and block building and associated asphalt parking lot and other appurtenances.

1.3 Proposed Site Conditions

It is proposed to construct a 24,200 sf (footprint area) affordable condominium development with associated parking and various site appurtenances. The new three-story building will contain 49 units. There will be 25 one-bedroom apartments and 24 two-bedroom apartments. Amenity spaces will also be constructed which will be used by the residents of the building. As part of the proposed development, there will be a new sewer service connection to the building. The new sewer service will exit the building on the west side and will tie into the existing Westchester County Department of Environmental Facilities ("DEF") 15" diameter gravity sewer main on South Riverside Avenue. The sewer flow in the new sewer service line will be greater than 2,000 gallons per day (gpd), thus requiring a permit from the Westchester County Department of Health. ("WCDH").

2.0 PROJECT DESIGN FLOWS

Design maximum daily wastewater flows for the proposed project, are based on the hydraulic loading rates given in the **New York State Department of Environmental Conservation (NYSDEC) publication *Design Standards for Intermediate Sized Wastewater Treatment Works – 2014 (DEC 14)***. The design maximum daily water use is a conservative design flow

on which the water infrastructure will be designed. This value does not represent the average daily flow which is expected to be substantially less.

The design flow rates for the residential units are based on the number of bedrooms per the tables below. The following table calculates the hydraulic loading rates and the design flow rates (gallons per day or gpd) for the proposed project:

Table 2.1: 425 S. Riverside Ave - Design Maximum Daily Flow Rate

Proposed Use	# of Units	Hydraulic Loading Rate	Design Maximum Daily Flow (gpd)
One Bedroom Units	25 Units	110 gpd/bedroom	2,750
Two Bedroom Units	24 Units	110 gpd/bedroom	5,280
Total			8,030

The anticipated design average daily flows for the project are expected to be significantly less than the design maximum daily flow rate. The design maximum daily flows represent conservative flows to ensure that the proposed sewer service line is designed with an ample factor of safety. The anticipated actual flows are based on anticipated occupancy rates and measured data for water use. Statistical data (obtained from **Rutgers University, Center for Urban Policy Research, Residential Demographic Multipliers, June 2006**) for the average number of occupants in rental units (based on number of bedrooms) was used to calculate the expected number of residents anticipated for the project as shown in the table below. Data from the **American Water Works Association (AWWA) Water Conservation Division Subcommittee Report, Water Conservation Measurement Metrics Guidance Report, dated January 2010** shows that the average in home water use is 69.3 gpd per person. This number is reduced to 43.5 gpd per person when water saving fixtures are used, which is the case for this project. The following table below will be used to calculate flow to the existing sewer main. The 43.5 gpd per person was used to calculate the proposed anticipated average daily design as water saving fixtures will be used. See the table below for the calculation of the design average daily flow rates in the existing and proposed conditions.

Table 2.3: S. Riverside Ave - Proposed Design Average Daily Flow Rate

Proposed Use	Occupancy Rate	Total Anticipated Residents	Water Use Per Resident (gpd)	Water Use (gpd)
25 – One Bedroom Units	1.86 people/unit	46	43.5	2,001
24 – Two Bedroom Units	1.88 people/unit	45	43.5	1,957
Total Anticipated Wastewater Generated (gpd)				3,958

As demonstrated above, through the use of water saving fixtures as required by current building code, a design maximum flow of 8,030 gpd is proposed for the project, with the actual anticipated flows being 3,958 gpd.

The peak hourly flow is calculated using a peaking factor that is based on the maximum daily design flow. A peaking factor of four will be used for the project based on from **Recommended Standards for Wastewater Facilities, Figure 1**.

Peak Hourly Domestic Flow

$8,030 \text{ gpd} \div (24 \text{ hr/day}) \div (60 \text{ min/hr}) = 5.6 \text{ gallons per minute (gpm)}$

Peak Hourly Flow = $5.6 \text{ gpm} \times 4 = 22 \text{ gpm}$

Although the anticipated flows (average daily design flow) for the project is significantly lower than the design maximum daily flows, the Peak Hourly Flow based on the design maximum daily flows are used for the design of the system. This provides a factor of safety in the proposed design.

3.0 PROPOSED COLLECTION SYSTEM COMPONENTS AND CONNECTION TO WESTCHESTER COUNTY DEPARTMENT OF ENVIRONMENTAL FACILITIES SYSTEM

A gravity sewage collection and conveyance system consisting of 6-inch diameter PVC SDR 35 sewer mains and precast concrete manholes will be installed onsite and will connect the building to the existing 15" gravity sewer main in South Riverside Avenue.

All PVC SDR 35 sewer service pipe will contain rubber push on gaskets at pipe connections. Sewer manholes will be installed at all bends for access and maintenance. All sewer manholes will have exterior asphalt coating and contain watertight connections at all pipe connections. Cleanout(s) will be provided on the sewer service connection at the midpoint of the service. All sewer piping will be pressure tested, and all manholes vacuum tested in accordance with the ***Recommended Standards for Wastewater Treatment Works***.

**DECEMBER 23, 2025**

PREPARED BY: JAMES C. ANNICCHIARICO

DATE

DECEMBER 23, 2025

CERTIFIED BY: PATRICK M. BELL, PE

DATE

APPENDIX A

Sewer Collection System Mapping

Sewer Collection System Mapping



SOURCE:

Map represents GIS mapping of the sewer collection system provided by Village of Croton-on-Hudson Engineer.