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## IV-C: Physiography

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The Batavia Kill stream originates in the Big Hollow area of the Town of Windham, and stretches west 21 miles through the towns of Windham, Ashland and Prattsville to its confluence with the Schoharie Creek, near the hamlet of Prattsville. As the stream winds its way down the valley floor, it drops approximately 2,000 feet in elevation from its origin at around 3,600 feet, to the stream's confluence with the Schoharie Creek at approximately 1,600 feet. The total watershed is 71 square miles (45,440 acres) in area.



### 1. TRIBUTARIES & WATERSHED SYMMETRY

The Batavia Kill has a number of named, and unnamed tributaries which drain the various sub-basins of the watershed. Starting at the lowest point in the watershed, the most significant tributaries are listed in **Figure IV-8**. These tributaries comprise the seven major sub-basins of the Batavia Kill. The Batavia Kill sub-basins range in size from 31 mi<sup>2</sup> (main stem) to 5 mi<sup>2</sup> (Sutton Hollow). Two of the primary tributaries (Mad Brook and Navuo Road) have been altered by the construction of flood control dams.

The Batavia Kill watershed is also characterized by an asymmetrical shape. When examining maps of the watershed boundary and its relationship to the main stream channel, one would note that the Batavia Kill stream is located on the south side of the watershed and the majority of the drainage area is north of the stream (**Figure IV-9**). All of the primary tributaries are located on the south facing slopes of the watershed (north of the stream), with only smaller drainage patterns existing on the south side of the stream. The watershed itself is approximately 17 miles long and varies from 5 to 7 miles wide.

#### Batavia Kill Tributaries

Unnamed (Dent Road)

Lewis Creek

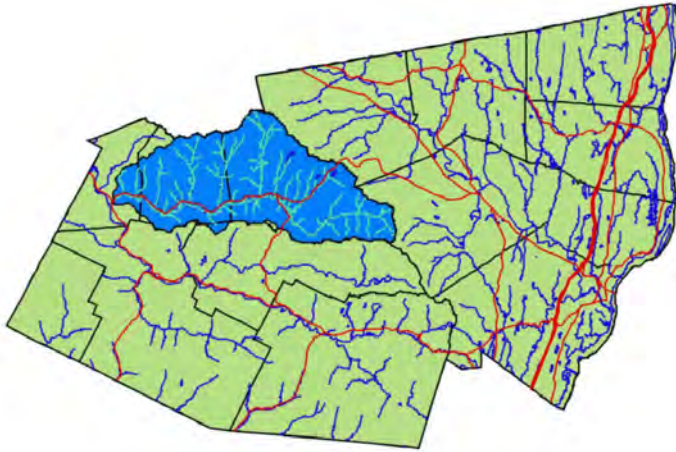
Sutton Hollow

North Settlement

Mad Brook

Unnamed (Navuo Road)

**Figure IV-8:** Named & Unnamed Tributaries to the Batavia kill.



**Figure IV-9:** Batavia Kill watershed symmetry

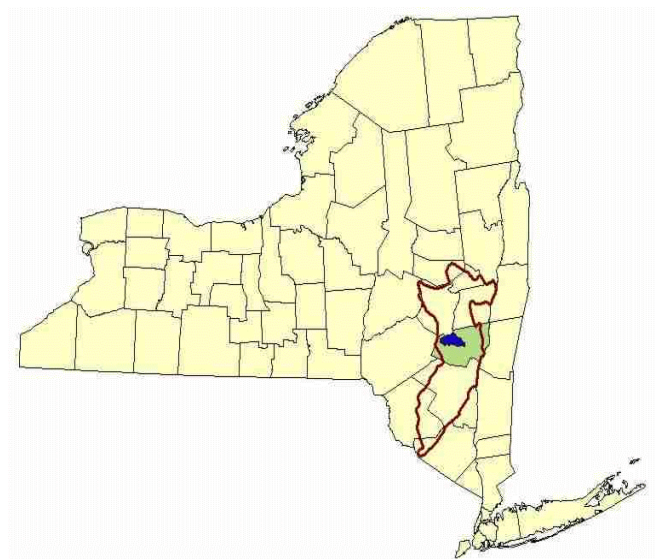
## 2. HYDRO-PHYSIOGRAPHIC REGION

Comparisons of streams are used for both the assessment of stream stability and the identification of stable stream reaches for reference use. These comparisons must be based on streams located within areas of similar hydrological characteristics. Important stream factors are influenced by the relationship between a watershed's peak flows and the

basin characteristics. Variability in analysis of these relationships can be minimized by dividing larger areas into hydrological regions based on similarities in peak discharge, topography, climate, precipitation, and other factors. Hydrological regions are delineated based on stream flow gaging stations which show similar relationships in peak discharge as compared to gages in adjacent regions.

In 1991, the NY office of the U.S. Geological Survey published the "Regionalization of Flood Discharges for Rural, Unregulated Streams in New York, Excluding Long Island" (USGS, 1991), which included the agency's delineation of hydrologic regions. The USGS initially delineated 7 regions in NYS, (based upon the aerial distribution of the statewide regression residuals) but found that the Catskills data required region 4 to be divided into two separate regions, 4 and 4a (due to the residuals in region 4). Generally, region boundaries coincide with drainage divides.

The Batavia Kill is located in hydrologic region 4, which runs on a north-south orientation from lower Saratoga/Schenectady Counties to a narrow band in Sullivan and Orange Counties (**Figure IV-10**). As will be demonstrated later in this report, knowledge of hydrologic regions are critical to the effective comparison of stream morphological features which allow for assessment of the stream's stability as well as selection of reference reaches.



**Figure IV-10:** USGS Hydro-physiographic Region 4