

From the point of view of the larger features of relief, this second segment of the Hudson valley is marked by the two great valleys into which it opens on the west along the strike of the Hudson shales and sandstones, the one in the valley of the Mohawk between the Adirondacks and the Catskills on the north, and the other that of the Walkill between the southeastern border of the plateau region and the Highlands on the south.

The third division, the shortest of all, comprises the Highland canyon of the Hudson. It is a region of moderately high relief, comparable in geologic structure to the Adirondack region. This portion of the river valley will be referred to as the Highland-Hudson.

The fourth segment of the river includes the region south of the Highlands to the sea. It is a region of ancient and metamorphic Paleozoic rocks on the east and of mainly Triassic rocks on the west. It may for convenience be known as the Lower Hudson.

For geologic reasons it is convenient to recognize in an ancient now submerged channel traversing the continental shelf to the southeastward of New York harbor a possible fifth segment of the Hudson valley, which may be termed the Submarine Hudson, but to what extent this is excavated in bed rock is not known.

At the northern border of the Fort Edward district, two narrow defiles unite the Hudson valley with that of Lake Champlain; one of these is occupied by Lake George; the other, the valley of Wood creek, directly drains the northern half of the Fort Edward district into the Champlain valley.

The divide between the Hudson waters and those of Wood creek east of Fort Edward is 147 feet above sea level. A depression of 200 feet in the region between Albany and the St Lawrence river would convert the Hudson and Champlain valleys into a navigable strait having a depth sufficient for the largest vessels. A depression of 150 feet at Fort Edward and northward over the region to the St Lawrence and an elevation of an equal amount at New York city would reverse the flow of the Hudson in the lower, middle and upper sections and turn the drainage into the St Lawrence gulf.