

1.12 Floodplains

A "floodplain" is the lowland adjacent to a river, lake or ocean. Floodplains are designated by the frequency of the flood that is large enough to cover them. For example, the 10-year floodplain will be covered by the 10-year flood, and the 100-year floodplain will be covered by the 100-year flood.

Flood frequencies, such as the "100-year flood," are determined by plotting a graph of the size of all known floods for an area and determining how often floods of a particular size occur. In the absence of sufficient stream flow gage data, flood flows are computed based upon watershed characteristics and rainfall data. Another way of expressing the flood frequency is the chance of occurrence in a given year, which is the percentage of the probability of flooding each year. For example, the 100-year flood has a 1% chance of occurring in any given year.

Development within the floodplain, including flood control facilities, can alter the natural floodplain. Reservoirs, lakes, ponds, wetlands and the overbank areas adjacent to a stream or river tend to store water during flood events, with later slower release as the river level subsides. This storage of floodwaters provides a detention benefit and reduces the peak flow proceeding downstream. Filling of floodplains, or reduction in floodplain volume by construction of levees, reduces the amount of storage volume available during a flood, and results in increased peak flows downstream. Well-vegetated floodplains provide additional benefits of serving as a buffer along a stream, providing shade to help maintain cooler water temperatures, and reducing NPS loading to the waterway. Floodplain areas are partially protected under NJAC regulations, which prohibit more than 20% net fill of the flood storage volume on a site.

The Passaic River Basin is at risk of frequent flooding due to its topography and heavy development within the floodplain. The flood of record for the Passaic Basin is the flood of October 1903. More recent severe floods occurred in September 1999, April 1984, November 1977 and September 1971. Plate 1.12.1 shows floodplains within Watershed Management Area 4. Large flood plain areas are found near the upstream end of the Passaic River in WMA 4, including along the Deepaval Brook and the lower reaches of the Preakness Brook. These floodplains include large wetland areas. There is also a large floodplain at the downstream end of the Passaic River, which is dominated by tidal flooding. The Saddle River and its tributaries have some wide floodplain areas, particularly along the lower reaches of the Hohokus Brook and the Saddle River from upstream of its confluence with Hohokus Brook and for a considerable distance downstream.

The Federal Emergency Management Agency (FEMA) website provides access to flood maps developed under the Flood Insurance Program (www.fema.gov/), then follow the links through the FEMA Flood Map Store). More detailed flood delineation maps may be obtained from NJDEP.

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