

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 streamflow gage data, flood flows are computed based on 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 and require zero net fill in areas tributary to the Upper Passaic River.

The Passaic River Basin, including areas within WMA 3 and downstream, 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 May 1968. Plate 1.12.1 shows floodplains within Watershed Management Area 3. Since most of WMA 3 is in the Highlands, with relatively steep waterways, the floodplains tend to be narrow along most streams and rivers. Floodplains have not been delineated in much of the forest area. However, in the Newark Basin portion of WMA 3 the land is flatter and there is an expansive floodplain along the length of the Pompton River on the west side, and on both sides in the lower reaches (Lincoln Park and Wayne). A large portion of this wide floodplain is developed, but a significant portion is included in the Bog and Vly Meadows.

The 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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