

Section 3: Environmental Setting

The Study Area is located near the eastern edge of the New Jersey Piedmont Physiographic Province, near its boundary with the Piedmont Lowlands. The Inner Coastal Plain Physiographic Province is characterized by unconsolidated clays, marls, silts, and sands that formed during periods of marine transgression and fluvial erosion; whereas, the Piedmont is characterized by clays, marls, as well as soft shales, argillites, sandstones, and siltstones that formed during periods of glacial modification and geological plate movements (Wolfe 1977). The bedrock that underlies the Study Area is composed of Upper Cretaceous-aged upper clayey silt (Woodbridge Clay Member) and lower sand (Farrington Sand Member). Surficial sediments consist of Late-Wisconsinan-aged Rahway Till, composed of sandy, sandy-to-silty and silty-to-clayey deposits (Drake et al. 1996; Stone et al. 2002).

The topographic setting is linear, north-south trending ridge located 200 feet south of a water course, formally known as the Meeting House Brook. Elevations range from 21 feet above mean sea level (AMSL) in the east side of the Study Area to 12 feet AMSL in the western side of the Study Area. The channelized brook drains into Woodbridge Creek, located 916 feet east of the Study Area. Prior to infilling, marshland associated with the creek was distant roughly 630 feet east of the Study Area. Woodbridge Creek feeds into Arthur Kill, which drains into Raritan and Sandy Hook bays, and ultimately the Atlantic Ocean.

Soils within the Study Area are composed of Boonton-Urban land complex, 0 to 8 percent slopes (BouB) (Figure 3.1). Boonton soils are typically well drained and are located on ground moraines (Natural Resources Conservation Service 2014). A typical soil profile consists of a 0.65-foot thick brown (10YR 4/3) silt loam plowzone (Ap), over an 0.59-foot thick dark yellowish brown (10YR 4/4) fine sandy loam topsoil and subsoil interface (BA), followed by two subsoil layers (Bt1 and Bt2) composed of a 0.65-foot thick brown (7.5YR 4/4) gravelly loam and an 0.59-foot thick brown (7.5YR 4/4) gravelly fine sandy loam that caps a 1.7-foot thick Btx composed of a dark reddish brown (5YR3/4) gravelly sandy loam over a substratum (Cd) of dark reddish brown (5YR 3/4) gravelly sandy loam (Natural Resources Conservation Service 2014).



Figure 3.1: Soil Map (NRCS 2014).