

SECTION 3.0 ENVIRONMENTAL SETTING

The APE is located within the Upper Coastal Plain Physiographic Province and Coastal Zone geographic region in an area that is nearly level to gently sloping at an approximate elevation of 0-15 feet above mean sea level (Figure 3.1; see Figure 1.2). The APE is situated on a terrace drained by an unnamed minor tributary of the Delaware River, which bisects the West Seventh Street portion of the APE (see Figure 1.2). The APE is underlain by Cretaceous Period Potomac Formation lignitic silts and clays and interbedded quartz sands and gravels (Woodruff and Thompson 1975). Four soil types are mapped within the APE: Hambrook-Urban land complex, 0-5 percent slopes (HkB), Mattapex-Urban land complex, 0 to 5 percent slopes (MuB), Udorthents, wet substratum, 0 to 2 percent slopes (UwA), and Urban land (Up) (NRCS 2008; Figure 3.2). Hambrook-Urban land complex, 0-5 percent slopes (HkB) soils contain approximately 35 percent Urban land and 45 percent Hambrook soils, which are formed in loamy fluviomarine deposits found on uplands and flats on coastal plains. A typical HkB soil profile is described as a sandy loam surface stratum underlain by 10-cm loam intermediate stratum and a sandy clay loam subsoil. These soils are well drained, permeability is moderately high, and available water capacity is moderate (NRCS 2008). HkB soils have a moderate potential for frost action and a low potential for whole soil erosion. Mattapex-Urban land complex, 0 to 5 percent slopes (MuB) soils contain approximately 40 percent Urban land and 50 percent Mattapex soils, which are formed in silty eolian deposits over fluviomarine sediments found on uplands and flats on coastal plains. A typical MuB soil profile is described as a silt loam surface stratum underlain by 10-cm silt loam intermediate stratum and a silt loam subsoil. These soils are moderately well drained, permeability is moderately low, and available water capacity is moderate (NRCS 2008). MuB soils have a high potential for frost action and a moderate potential for whole soil erosion. Udorthents, wet substratum, 0 to 2 percent slopes (UwA) soils are composed of fluviomarine sediments found on fills, uplands and flats. A typical UwA soils profile is described as a thin loamy surface stratum underlain by a sandy loam subsoil. These soils are moderately well drained, permeability is moderately low, and available water capacity is moderate (NRCS 2008). UwA soils have a moderate potential for frost action and a moderate potential for whole soil erosion. Urban land (Up) is a miscellaneous mapping unit where impervious surfaces and built environment compose 85 percent of the land surface.

Historically, the APE has been used for a mix of industrial and agricultural purposes. Country estates, such as the eighteenth-century Stonum, home of George Read, formerly occupied the area south and west of New Castle. Suburbanization of the APE began in the mid-twentieth century and has continued to the present as former industrial sites are redeveloped as high density housing. The vegetation in the APE consists of manicured lawn within ornamental landscaping. Many areas of the APE are paved for parking, drives, and existing concrete and brick sidewalks that front commercial and residential properties.

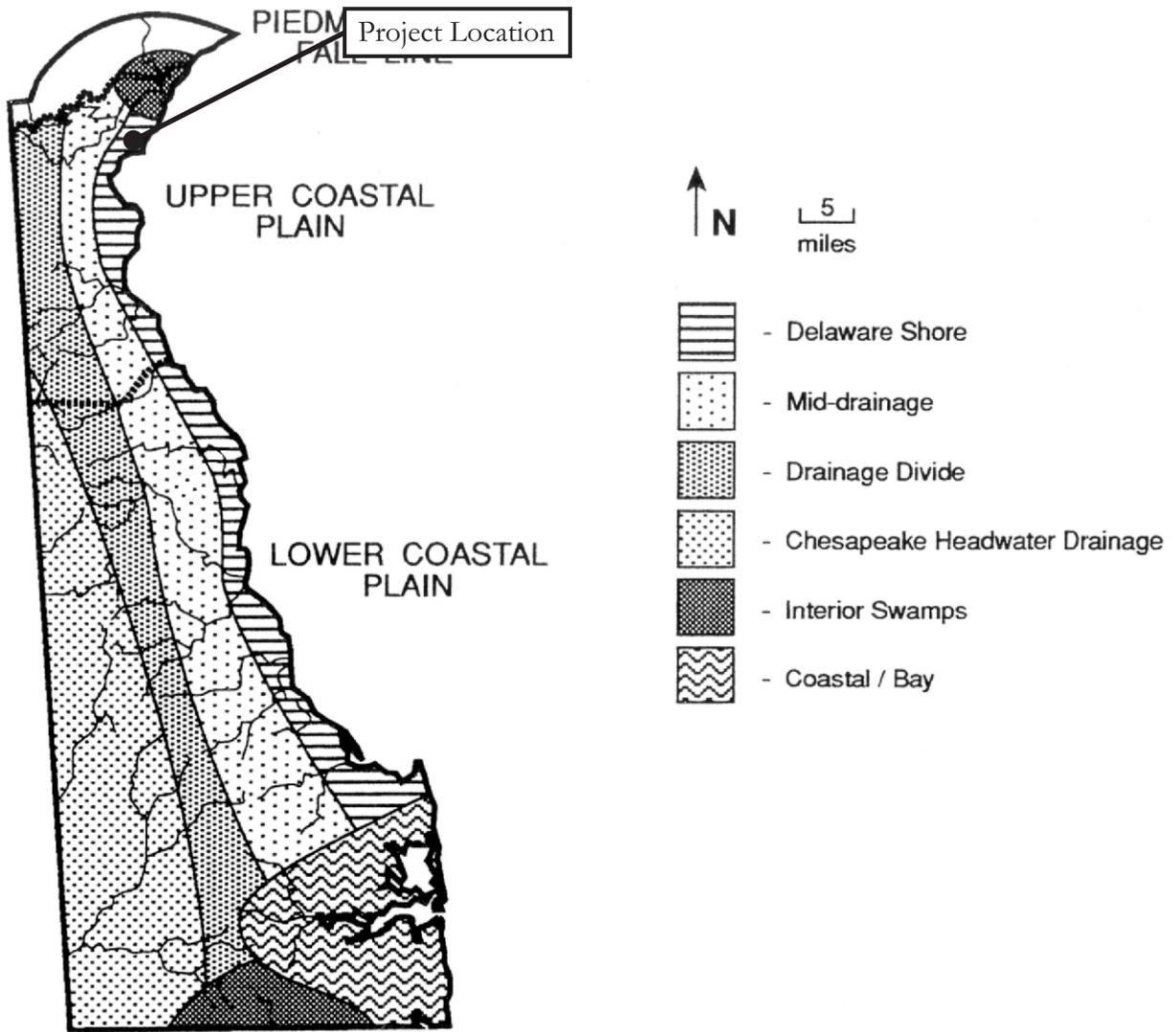


Figure 3.1:
 Physiographic Provinces Map
 (Delaware Physiographic Zones, redrawn from Custer 1986).

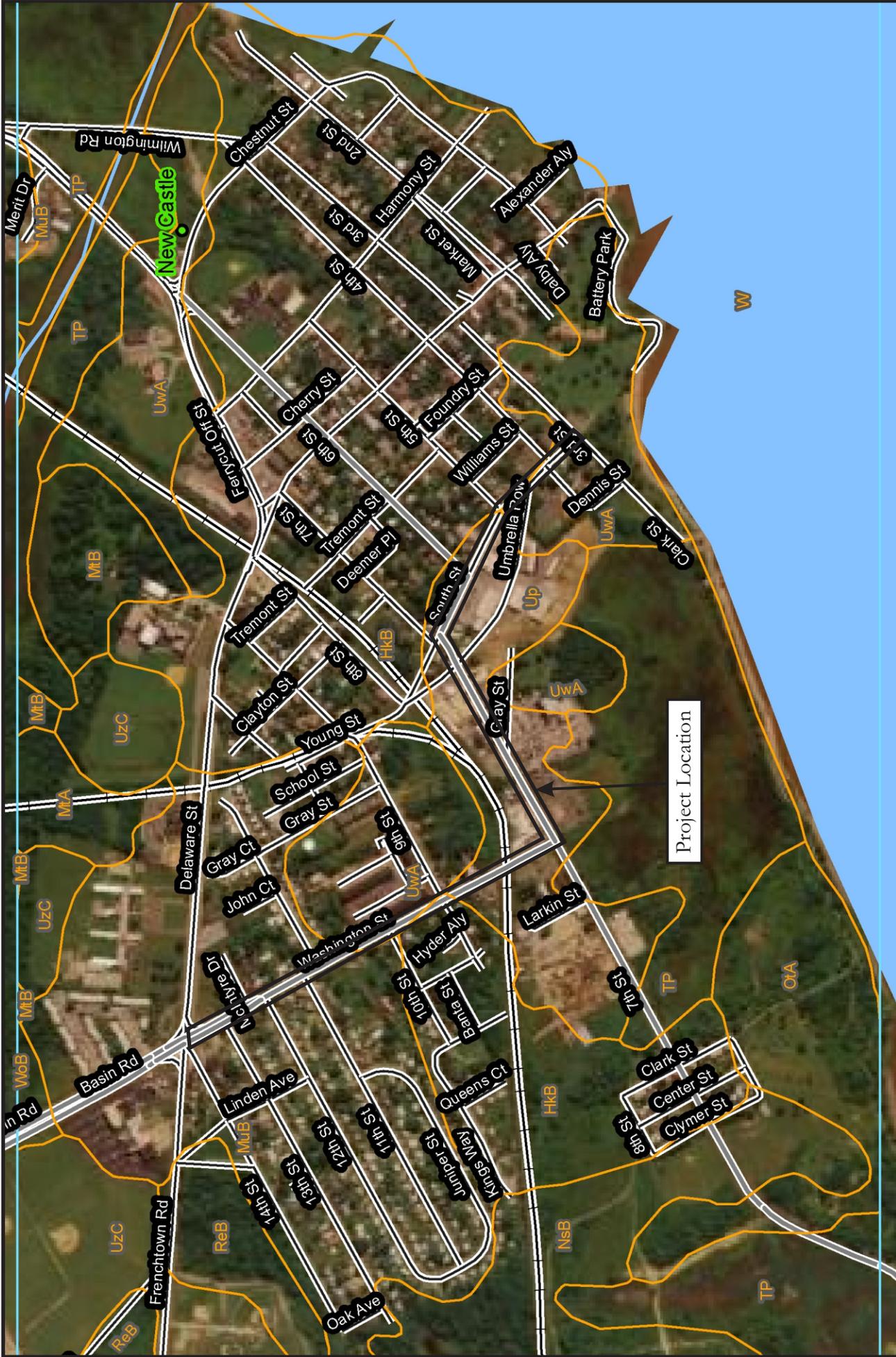


Figure 3.2:

Soils Map (from 2008 Natural Resources Conservation Service, Web Soil Survey, <http://websoilsurvey.nrcs.usda.gov>).

