Environmental Impact Statement

Prepared For

212, 214 & 216 Ernston Road
Tax Lots 23-25 & 28, Block 444.04
Borough of Sayreville
Middlesex County, New Jersey

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1.0 DESCRIPTION OF THE PROPOSED PROJECT

1.1 Introduction

This Environmental Impact Statement (EIS) has been prepared by AWZ Engineering, Inc. (AWZ) for the proposed development project located at 212, 214 & 216 Ernston Road, Block 444.04, Lots 23, 24, 25 & 28, located within the Borough of Sayreville, Middlesex County, New Jersey. This EIS has been prepared in conformance with the requirements set forth by the Borough of Sayreville.

Refer to Appendix A for Site Location Maps for a visual description of the project area.

1.2 Existing Site Conditions

The site is located in the southerly section of the Borough of Sayreville. The access to the site is through Ernston Road. The total area is approximately 2.49-acres. The current zoning of the site is R-7 (Residential District) zone and abuts R-5 (Residential) zone to the north side.

The existing site comprises 3, 2 1/2-story, frame dwellings, a detached garage, multiple sheds, a 1-story office and a cover prayer area. Additionally, there are concrete, asphalt and gravel parking areas. The rear northerly section of the lot consists of mostly woodlands. The site is surrounded by a mixtures of commercial and residential sites.

1.3 Proposed Project Description

The proposed site improvements at the site include the demolition and removal of all existing features and the construction of a two-story house of worship. The proposed building footprint will be approximately 23,082.52 square feet in size. Also included are parking and traffic circulation improvements, asphalt pavement and perimeter/interior curbing. The proposed impervious area of the site will be approximately 44.83%. A total of 109 parking spaces including 6 handicap stalls are proposed.

New utility connections are proposed for sewer, electric, gas and water.

A combination of underground and above retention systems will provide the required detention of the peak flows for the design storm events. Also, NJDEP approved Storm filters will address the water quality requirements for the removal of total suspended solids.

1.4 Approvals, Permits and Certifications Required

The following permits may be required or have been obtained for the project:

- Borough of Sayreville Planning Board Approval;
- Freehold Soil Conservation District Erosion and Sediment Control Permit;
- Municipal Utilities Authority; and
- Local Construction Permits.
- Middlesex County Health Department

2.0 DESCRIPTION OF THE ENVIRONMENT

The site is located in the southerly section of the Borough of Sayreville. The access to the site is through Ernston Road. The total area is approximately 2.49-acres. The site is situated on Block 444.04, Lots 23, 24, 25 & 28, located within Middlesex County, New Jersey. Refer to Appendix A for Site Location Maps which graphically depicts the site location.

2.1 Natural Resources

This section provides a general description of the existing natural environment that potentially would be affected by implementation of the proposed project.

2.1.1 Land Resources

2.1.1.1 Soils

As per National Resources Conservation Service (NRCS) Soil Survey, the existing soil within the majority of the proposed development is composed of the following:

Map Unit: DouC – Downer-Urban Complex, 5 to 10 percent slopes

Soil Components: Downer and similar soils (60%) and urban land (30%). Downer soil is a deep well-drained soil developed from acid, loamy Coastal Plain sediments. They are found on rolling landscapes, terraces and uplands with up to 30% slope in some places, but less than 5% slope is most common. The parent material consists of loamy fluviomarine deposits and/or gravelly fluviomarine deposits. Depth to restrictive feature is greater than 80 inches. Depth to water table is about 48 to 122 inches from existing topography. Non irrigated land capability classification is 3e. The capacity of the most limiting layer to transmit water is moderately high to high (0.6 to 6 in/hr.). This soil does not meet hydric criteria and it is classified as hydrologic soil group A (HSG A).

The NRCS soil ratings, description and properties are provided in Appendix B.

2.1.1.2 Areas of High Water Table

As per the NRCS soil survey data, the natural drainage class of the soils ranges from moderately high to high drained and the water table is about 48 to 122 inches below the surface. The soils are not flooded or ponded and does not meet or show hydric criteria.

2.1.1.3 Site Geology

The area geology is important for several reasons; mainly that the physical and chemical properties of the land determine the quantity and quality of ground water the aquifers yield. They also control how groundwater recharges and moves through the aquifers, how contaminants seep into and move through the soil and groundwater, and where natural hazard likes radon, sinkholes and seismic instability may occur. Finally, these properties establish where geologic resources such as sand, gravel, peat, clay, quarry rock and mineral ores are located. Geologic properties also determine the suitability of an area for the use of septic systems, the management of stormwater and surface runoff, and the stability of foundations for buildings, bridges, tunnels, and other structures. The Borough of Sayreville is located within the Coastal Plain Province.

Coastal Plain – It is the largest physiographic province in New Jersey. The Coastal Plain province is 4,677 square miles and covers Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Monmouth, Ocean and Salem Counties and parts of Mercer and Middlesex. It is widens towards the southeast and consists of unconsolidated gravel, sand, silt and clay and ranges in age from the upper Lower Cretaceous to the Miocene (90 to 10 million years old). From the Piedmont boundary, the plain is shaped like trough, extending from the Raritan Bay to Trenton. Near Monmouth Junction, where the trough floor forms a saddle it reaches an elevation of about 80 feet. East of this depression is the drainage divide between the Delaware River and the Atlantic Ocean. The maximum elevation of the Coastal Plain, located at Crawford Hill is 391 feet. The streams that flow northwest to the Delaware have narrow valleys, are shorter and have a steeper gradient than the streams that flow southeast. The Highlands of Navesink at 266 feet above sea level is the highest point directly on the coast.

The geology of a place can be classified into two layers: the surficial geology, which extends from a few to a few hundred feet in depth; and bedrock geology, which is the underlying rock extending deeper into the Earth's crust. The geology map shows the various types of surficial materials and bedrock formations in the Borough of Sayreville.

Surficial and Bedrock Geology – The site is located within the South Amboy quadrangle. Surficial materials in the South Amboy quadrangle include wetland, hillslope, windblown, estuarine, beach, and glacial deposits, several generations of fluvial deposits, and weathered bedrock materials. These material discontinuously overlie coastal Plain and bedrock formations. They are as much as 100 feet thick but are generally less than 30 feet thick. They occur within a landscape sculpted by three episodes of valley incision.

The South Amboy quadrangle is underlain by unconsolidated Coastal Plain formations that overlie shale, siltstone, diabase, and metamorphic rocks of the Piedmont. The Coastal Plain formations include sand, silt, clay, and glauconite sand laid down in coastal, nearshore marine, and continental shelf settings 95 to 75 million years ago. The shale and siltstone were laid down in lakes and floodplains in a continental rift basin about 230 to 185 million years ago. They were later intruded by a diabase sill. The shale, siltstone, and diabase lie on metamorphic rocks of pre-Mesozoic age.

The topography of the Coastal Plain generally is flat to very gently undulating. However, erosion-resistant gravel or iron-cemented sediment underline upland areas and isolated hills, such as the Atlantic Highlands, Telegraph Hill, Mount Holly, and Arneys Mount.

Coastal Plain Sediments have been mined in the past for bog iron, glass sand, foundry sand, ceramic and brick clay, the mineral glauconite for use in fertilizer, and titanium from the mineral ilmenite in sand deposits. Today the Coastal Plain sediments continue to supply glass sand and are extensively mined for sand and gravel construction material. The sand formations are productive aquifers and important groundwater reservoirs.

2.1.1.4 Topography

Based on the field topographic survey, performed by Fouad Ait Arab, P.L.S, dated 01/15/2023, the site topography is slopes down towards the westerly side. A topographic map that depicts the project area is presented in Appendix A.

2.1.2 Water Resources

2.1.2.1 Surface Water Resources

NJDEP's Surface Water Quality Standards (NJAC 7:9B) specifies classification codes and water quality standards for waterways within their jurisdiction. This section identifies those water resources in the project area that fall within the classifications established by NJDEP.

The project area is located in the Lower Raritan, South and Lawrence Watershed Management Area (WMA 9). WMA 9 is located in the state's Piedmont and Coastal Plain physiographic provinces. Major water bodies include the main stem of the Raritan River, the South River and Lawrence Brook within Middlesex, Somerset and Monmouth Counties. A New Jersey Watershed Management Area Map that depicts the project area is presented in Appendix A.

2.1.2.2 Groundwater Resources

Sole-source aquifers are defined by the U.S. Environmental Protection Agency (USEPA) under regulations in the Safe Drinking Water Act of 1974 [Section 1424(e)]. Sole-source aquifers are those aquifers which contribute more than 50% of the drinking water to a specific area and the water would be impossible to replace if the aquifer were contaminated. The USEPA defines three different regions as part of its sole-source aquifer program. The three areas are the recharge zone, the stream-flow source zone, and the project review area. The recharge zone is the area through which water recharges the aquifer. The stream-flow source zone is an area upstream of the sole-source aquifer that contributes stream flow to the aquifer. The project review areas are areas in which all the federally funded projects are reviewed by the USEP.

The project area is located in the Coastal Plain sole-source aquifer. The Coastal Plain sole-source aquifer is formally known as the "New Jersey Coastal Plain aquifer system". The recharge zone includes all upstream portions of the Delaware River watershed in New Jersey, Pennsylvania and New York. USEPA limits its project-review are to recharge zone and that portion of the stream-flow source zone that lies within two miles of the main stem Delaware River.

A New Jersey Sole-Source Aquifer Map that depicts the project area is presented in Appendix A. Due to the proposed development at the site; no adverse effect to the groundwater recourses is anticipated.

2.1.2.3 Floodplains

All watercourses in the State of New Jersey are regulated by the NJDEP and are designated as being either delineated or non-delineated. For a stream to be designated as delineated, a 100-year flood discharge and a flood hazard area have been established and officially adopted by the NJDEP Bureau of Floodplain Management. All other streams are considered to be non-delineated. There are no onsite watercourses.

According to the NJDEP GIS Resource Data, no portions of the subject property are located within the USGS documented flood-prone areas. The Federal Emergency Management Agency (FEMA) indicates that both the 100-year and 500-year floodplains are located outside the subject property. See Appendix A for a FEMA Flood Map of the project area. The locations of the noted floodplains are outside the project site and any

proposed site development. Therefore, no effect to the floodplains is anticipated.

2.1.2.4 Wetlands

Wetlands are defined under Federal regulations [33 CFR 328.3(b)] as, "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

Wetlands generally include swamps, marshes, bogs, and similar areas. The State regulatory definition, contained in NJAC 7:7A-1.4, is quite similar, identifying wetlands as those areas that are "inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation...." It is important to note that both definitions impart three necessary characteristics for an area to be considered a regulated wetland: hydrophytic vegetation, hydric soils, and wetland hydrology. These three parameters were utilized in identifying wetland resources on maps and in field investigations for the project.

A Wetlands site assessment of the site was conducted by LRV Associates on April, 2022. The purpose of the investigation was to determine the absence or presence of wetlands and/or State open waters within the property. Field investigations indicated the absence of wetlands, State open waters or wetland transition areas within the property limits.

2.2 Solid Waste Disposal

Solid waste disposal will be by contracted with a private disposal firm. Trash collection area will be in an enclosed area. Recyclable materials will be separated and collected in accordance with all applicable governmental requirements.

2.3 Traffic

A traffic evaluation analysis of the area has been performed. Please, refer to the Traffic Report.

2.4 Air Quality

The amendments to the Clean Air Act were passed in 1970, and allowed USEPA to delegate responsibility to state and local governing bodies. This allowed each state/local government the opportunity to prevent and control air pollution at the source. The 1970 amendments (Clean Air Act Amendments; CAAA) mandated that the USEPA establish ceilings for certain pollutants based upon the identifiable effects each pollutant may

have on public health and welfare. Subsequently, the USEPA promulgated the revised regulations which set National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), lead (Pb), sulfur dioxide (SO_2), total suspended particulates (TSP), and inhalable particle matter smaller that 10 micrometers (PM-10). These pollutants are collectively referred to as "criteria pollutants" and are shown in Table below.

U.S. EPA - National Ambient Air Quality Standards

Pollutant	Averaging Period	New Jersey Primary	New Jersey Secondary	National Primary	National Secondary
Carbon Monoxide	8 hour average 1 hour average	9.0 ppm 35.0 ppm	9.0 ppm 35.0 ppm	9.0 ppm 35.0 ppm	9.0 ppm 35.0 ppm
Ozone	Max. Daily 1-hr avg. 1 hour average 8 hour average	0.12 ppm - -	- 0.08 ppm -	0.12 ppm - 0.08 ppm	- 0.12 ppm 0.08 ppm
Nitrogen Dioxide	12-month arith. mean	0.05 ppm	0.05 ppm	0.053 ppm	0.053 ppm
Lead	3 month average Quarterly Mean	1.5 ug/m^3 -	1.5 ug/m^3 -	- 1.5 ug/m^3	- 1.5 ug/m^3
Sulfur Dioxide	12-month arith. mean 24 hour average 3 hour average	0.03 ppm 0.14 ppm -	0.02 ppm 0.10 ppm 0.5 ppm	0.030 ppm 0.14 ppm -	- - 0.5 ppm
Total Suspended Particulates	12-month geom. mean 24 hour average	75 ug/m^3 260 ug/m^3	60 ug/m^3 150 ug/m^3	- -	- -
PM-10	Annual arith. mean 24 hour average	- -	- -	50 ug/m^3 150 ug/m^3	50 ug/m^3 150 ug/m^3
PM 2.5	Annual arith. mean 24 hour average	- -	- -	15 ug/m^3 65 ug/m^3	15 ug/m^3 65 ug/m^3

Source: New Jersey Department of Environmental Protection, 2000

The New Jersey state standards and NAAQS are divided into two types of criterion. The primary standards define air quality levels intended to protect the public health with an adequate margin of safety. The

secondary standards define levels of air quality intended to protect the public welfare from any known or anticipated adverse effects of a pollutant (e.g., soiling, vegetation damage, material corrosion).

Section 107 of the 1970 CAAA requires the USEPA and states throughout the country to identify those areas not meeting the NAAQS. An area, which does not meet a standard, is referred to as in "non-attainment." The entire State of New Jersey is in non-attainment for ozone. In recent years, documented ozone levels have been decreasing. In 1997, the USEPA created more stringent ozone standards and therefore New Jersey will most likely violate these standards for many more years.

Although the USEPA has the ultimate responsibility for protecting ambient air quality, state and local governments have primary responsibility for air pollution prevention and control. The CAAA require states to submit a State Implementation Plan (SIP) describing how they will attain and maintain air quality standards in non-attainment areas. The SIP must be approved by USEPA for each non-attainment criteria pollutant. The NJDEP is responsible for implementing New Jersey's SIP. In order for projects to comply with the CAA and CAAA, they must conform to the attainment plans documented in the SIP.

The project does not cause or contribute any new violation of any standard, does not increase the frequency or severity of any existing violation of any standard, and does not delay the timely attainment of any standard or any required interim emission reductions or other milestones. Therefore, the proposed project conforms to the governing SIP and in turn conforms to the Clean Air Act Amendments of 1990. However, demolition/construction-related activities can result in short-term impacts to ambient air quality. These impacts are typically related to fugitive dust emissions in and around the site as a result of demolition/construction operations. Fugitive dust emissions typically occur during building demolition, ground-clearing, site preparation, grading, stockpiling of materials, on-site movement of equipment, and material transportation. Fugitive dust emissions are greatest during dry periods, during periods of intense construction activity, and under high wind conditions.

Other potential air quality impacts from these activities are usually insignificant when equipment is well maintained and operated in well-ventilated areas. The potential for impacts will be short-term, occurring only while demolition or construction work is in progress, and local conditions are appropriate.

2.5 Noise

Certain critical factors affect noise and the way it is perceived by the human ear. Such factors include the acoustical level (noise), frequency and the length of the exposure period. The sound or noise level is

measured in units of decibels (dB). Due to the complex manner in which the human ear functions, measurement of different noise sources does not always correspond to relative loudness or annoyances. Therefore, different scales have been developed to furnish guidance in evaluating the importance of different noise sources. The "A" weighted scale (units expressed as dBA) has been widely accepted for noise to compare well with human reactions.

The dBA descriptor can be applicable for noise levels at one single moment. Since very few noise sources are constant, an alternative way of describing noise over a period of time was needed. One way of describing fluctuating sound is to address it as if the noise occurred at a steady, unchanging level over a specific time period. For this condition, the widely used descriptor accepted to express noise levels has become the L_{Aeq} or an A-weighted equivalent noise level. The L_{Aeq} is the equivalent steady-state sound level, which in a specific period of time contains the same acoustic energy as the time-varying sound level during that same period.

The Noise Abatement Criteria (NAC), shown in Table below, defines noise level guidelines for different land-use activities. Noise sensitive sites within the project limits include the residential dwellings adjacent to the project area. The existing threshold for noise activities associated with similar noise sensitive sites is 55 dBA (L_{Aeq}) with abatement criteria of 67 dBA (L_{Aeq}). Existing exterior noise levels were not monitored as part of the project; however, background noise levels at the site would be consistent with similar suburban settings, which range from 55-60 dBA measured over a 24-hour period (USEPA, 1974).

Threshold for Noise Interference And

Noise Abatement Criteria (dBA)

Activity Category	**Threshold of Noise Interference**		**Noise Abatement Criteria**		**Description of Activity Category**
	L_{10}	**L_{Aeq}**	**L_{10}**	**L_{Aeq}**	

Activity Category	Threshold of Noise Interference		Noise Abatement Criteria		Description of Activity Category
A	48	45	60	57	Tracts of land on which serenity and quiet are of extra-ordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks, open spaces, or historic districts which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	58	55	70	67	Picnic areas, recreation areas, playgrounds, active sports areas, and (exterior) parks which are not included in Category A and residences, motels, public meeting rooms, schools, churches, libraries, and hospitals.
C	63	60	75	72	Developed lands, properties or activities not included in Categories A (exterior) or B above.
D	--	--	--	--	Undeveloped Lands as described in 11a and c of Federal Aid Highway Program Manual Volume 7, Chapter 7, Section 3.
E	43	40	55	52	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums (interior).

Source: Federal Highway Administration

Based on the proposed design for this project, the following conclusions have been made regarding noise impacts associated with the project:

- Temporary noise increases, above background noise, are anticipated during the construction phase;
- The proposed increases in traffic that would result from the proposed project would not increased noise impacts above background noise associated with this area of the Township.
- The proposed use is not anticipated to generate any continuous airborne sound with a sound intensity in excess of 50 dBA with the exception of the heating, ventilation and air conditioning system (HVAC). Typical HVAC systems can generate sound intensities ranging from 50 to 75 decibels at the source.

2.6 Water Supply

The project site is currently being serviced by municipal water service along Ernston Road, in front of the site. The proposed project will continue to be serviced by the municipal system via a proposed water connection. The public water system has the capacity and can successfully meet any additional water demand.

2.7 Sewerage Facilities

The proposed project will be tied to the municipal sewer system utilizing a proposed connection. The existing municipal sewer system has the capacity and will continue to meet the sewer demand from the proposed improvements. Approximate sizes and locations are shown on the plans.

2.8 Stormwater

In accordance with the NJDEP Stormwater Management Rules, N.J.A.C. 7:8, there are new means and methodology required to handle the conveyance, treatment, and discharge of Stormwater. Specifically all major developments must meet four primary design requirements; nonstructural stormwater strategies, groundwater recharge standards, stormwater quality standards (Total Suspended Solid requirements) and peak reduction factors for stormwater quantity control options.

The project is classified as major development (addition of more than ¼-acre of impervious surface and/or more than 1-acre of land disturbance). The storm water management system for the project is designed to minimize the impacts of the developed areas on the downstream discharge points in accordance with the NJDEP, the Borough of Sayreville requirements and generally accepted engineering practices.

A combination of underground and above retention systems will provide the required detention of the peak flows for the design storm events. Also, NJDEP approved Storm filters will address the water quality requirements for the removal of total suspended solids.

3.0 PROBABLE ENVIRONMENTAL IMPACTS

3.1 Land Resources

3.1.1 Soils

Construction of the project would result in soil disturbance. Currently the site comprises of mostly impervious areas with multiple structures and concrete/asphalt ad gravel areas. The proposed project will result in site clearing, grading and excavation in order to accommodate the proposed improvements.

3.1.2 Geology

The implementation of this project will not result in adverse impact on the geologic resources of the area. Based on current plans, construction activities associated with the project include site clearing, grading and excavation to accommodate the proposed improvements. A majority of the excavation would likely be contained within the upper most layers of surficial material and the bedrock will not likely be encountered and impacted by the proposed project.

3.1.3 Topography

Implementation of the project may result in minor impacts to onsite topography. Based on current plans, construction activities associated with the project include site clearing, grading and excavation within the previously non-disturbed areas in order to accommodate the proposed improvements. A majority of the excavation would likely be contained within the upper most layers of surficial material and no significant cuts and fill are proposed within portions of the proposed project.

3.2 Water Resources

3.2.1 Surface Water Resources

Since there is no presence of a stream within the project area, there will be no impact to any aquatic resources located on or adjacent to the site.

3.2.2 Ground Water Resources

As previously stated, the proposed project will be connected to the existing water main via proposed connection to meet the water demand as a result of this project.

3.2.3 Flood Plains

According to FEMA flood maps, no floodplains are associated or are located on the subject property. As such, the locations of the noted floodplains are outside the proposed site development. Therefore no effect to these floodplains is anticipated

3.2.4 Wetlands

A Wetlands site assessment of the site was conducted by LRV Associates on April, 2022. The purpose of the investigation was to determine the absence or presence of wetlands and/or State open waters within the property. Field investigations indicated the absence of wetlands, state open waters or wetland transition areas within the property limits.

Also, an NJDEP GeoWeb data query for the project site was performed. Information regarding Category One Waterways, threatened and endangered species and forested and emergent wetlands are available through GeoWeb. The result of GeoWeb does not indicate the presence of a stream. Moreover, it does not show any evidence of critical environmental and historic sites or natural heritage priority sites within or nearby the property boundaries.

3.3 Terrestrial Resources

3.3.1 Vegetation

As part of the proposed improvements, site clearing of the existing vegetated areas is anticipated. However, a large area of the site will be landscaped and the existing perimeter vegetation will be preserved to provide a natural buffer area. In addition, any vegetation loss will be compensated in accordance with the Borough's requirements.

3.3.2 Wildlife

Based on NJDEP GeoWeb, there are no known threatened and endangered species within the project area. The construction activities could result in the temporary and permanent loss of habitat and possible mortality of less mobile, burrowing, and/or denning species of common wildlife such as small rodents and snakes. During the construction period, resident species and transient wildlife may seek refuge in adjacent habitats until the project is completed. Following construction, wildlife species are expected to resume their normal patterns of habitation consistent with post-construction habitat availability in and around the area.

3.4 Solid Waste Disposal

As previously stated, solid waste disposal will be by contracted either by a private disposal firm. Trash collection area has been provided for the facility. Recyclable materials will be separated and collected in accordance with all applicable governmental requirements. As such, solid waste disposal should not have a detrimental affect on the project site or surrounding area.

3.5 Traffic

As previously stated, a traffic evaluation analysis been performed. Please, refer to the Traffic Report.

3.6 Air Quality

Impacts to air quality as the result of construction of any proposed projects will consist of temporary impacts. Temporary impacts are those that occur during construction and would be limited to increased particulates (dust). Permanent impacts include increases of particulates and emissions generated from daily operations of

a proposed project. During construction of the proposed project, an increase of dust may result; however, any increase would be temporary and dust levels would recede to normal upon completion of construction.

No production processes (manufacturing of goods, food preparation) will be undertaken within the site. Therefore, the generation of emissions associated with production activities will not result. Operational impacts to air quality generated by the proposed project would be limited to emissions generated by vehicular traffic associated with the normal facility operations. As such, long-term impacts to air-quality at the project site or within the region are not anticipated from implementation of the proposed improvements.

3.7 Noise

As stated above, the proposed use is not anticipated to generate any continuous airborne sound with a sound intensity in excess of 50 dBA with the exception of the heating, ventilation and air conditioning system (HVAC). Typical HVAC systems can generate sound intensities ranging from 50 to 75 dBA at the source. The distance from the HVAC source to the property line will abate the sound intensity below 50 dBA. Sound intensity decreases inversely with the square of the distance from the source. For example, if the distance from the source is doubled, then the intensity is quartered. After converting decibels to watts per square meter and performing the inverse square law calculations, each doubling of distance reduces the intensity in decibels by 6 dBA.

The area adjacent to project site will experience a temporary increase in noise levels during the construction phase. Specific projects such as clearing, grading, paving and structural enhancements are all activities known to produce high noise levels. Equipment such as bulldozers, scrapers, backhoes, graders, loaders, cranes and trucks will be used in the construction but are subject to construction noise specifications. Construction noise levels for residences and commercial/light industrial establishments can reach 90 to 95 dBA during some phases of construction. Examples of some noise levels from typical construction equipment are shown below. Although there will be temporary noise as a result of this project, construction will be limited to daylight hours and will be kept to a minimum whenever possible.

Noise Level (dBA) at 50 feet From Various Construction Equipment

Equipment	Noise Level (dBA)
Concrete Mixer	85
Concrete Pump	82
Crane	83

Derrick	88
Front Loader	79
Back Hoes	85
Dozers	80
Tractors	80
Scrappers	88
Graders	85
Truck	91
Paver	89
Pumps	76
Generators	78
Compressors	81
Pile Drivers	100
Jackhammers	88
Rock Drills	98
Saw	78
Vibrators	76

3.8 Water Supply

As previously stated, the project site will continue to be serviced by the municipal water system via proposed water connection. The public water system has the capacity and can successfully meet any additional water demand of the proposed project.

3.9 Sewerage Facilities

As previously stated, the proposed project will be tied to the municipal sewer system utilizing a proposed sewer connection. The existing municipal sewer system has the capacity and will continue to meet the sewer demand from the proposed improvements.

3.10 Stormwater

As previously stated, the project is classified as major development (addition of more than ¼-acre of impervious surface and/or more than 1-acre of land disturbance). The storm water management system for the project will be designed to minimize the impacts of the developed areas on the downstream discharge points

in accordance with the NJDEP, the Borough of Sayreville requirements and generally accepted engineering practices.

A combination of underground and above retention systems will provide the required detention of the peak flows for the design storm events. Also, NJDEP approved Storm filters will address the water quality requirements for the removal of total suspended solids.

3.11 Historic Sites and Structures

There are no historic sites and structures present on or adjacent to the property.

3.12 Lighting and Illumination

The proposed project will utilize efficient LED lighting throughout the site in accordance with Illuminating Engineer's Society (I.E.S.) Standards. No spotlights or other types of artificial lighting are anticipated to create sky reflection, glare or be directed beyond the property lines or exceed the Borough of Sayreville lighting ordinance requirements.

A computer-generated lighting analysis is prepared and presented on the lighting plan that will accompany the site plan application. The lighting plan provides the results of the analysis in the form of a grid, with each point in foot-candles.

3.13 Vibration

The proposed use is not anticipated to cause any vibration at or beyond the lot boundaries. During construction, temporary vibration is expected. Vibration is expected during compaction of soil. This type of vibration would be generated for any type of development at the site. Exceedance of the vibration permitted by the Borough of Sayreville Ordinance is not anticipated for this project.

4.0 MITIGATION OF ADVERSE ENVIRONMENTAL IMPACTS

4.1 Land Resources

4.1.1 Soils

Best Management Practices (BMPs) will be utilized for the project. During construction, the practice of minimizing the time period during which ground surfaces are exposed will reduce construction-related erosion. Also, implementation of the Soil Erosion and Sediment Control Plan will reduce impacts to onsite soils, adjacent properties and water courses. This would include installation of silt fencing and/or staked hay-

bales around the limits of construction, inlet protection and stabilize construction pad. Potential contamination of groundwater could possibly occur as a result of leaking construction equipment and/or accidental spills. Proper maintenance procedures on the construction site would avoid most leaks and mishaps. Any spills (oil, gasoline, brake fluid, transmission fluid, etc.) would be contained immediately and disposed of properly, off-site, in accordance with State (NJDEP) and Federal (USEPA) protocol.

4.1.2 Geology and Topography

Impacts to geologic resources are not anticipated to occur within the project study area; therefore, no mitigation measures are required.

4.2 Terrestrial Resources

4.2.1 Vegetation

As previously stated, as part of the proposed improvements, site clearing of the existing vegetated areas is anticipated. In addition, any vegetation loss will be compensated in accordance with the Borough's requirements.

4.2.2 Wildlife

It is expected that during construction, the majority of wildlife species utilizing the areas of the site to be disturbed will be displaced. Upon completion of construction, some may return to the undisturbed areas. It is likely that the remainder will relocate to the remaining undeveloped areas located off-site.

4.3 Air Quality

Temporary impacts to air quality during construction would be mitigated through the application of various control measures to minimize the amount of construction dust generated. These measures would include applying water or other suitable moisture-retaining agents on areas of exposed soils, covering haul trucks carrying loose material, or treating materials likely to become airborne and that would contribute to air pollution if left untreated. Also, maintenance and protection of traffic patterns would be implemented during construction to limit disruption of traffic and to ensure that adequate roadway capacity is available to general traffic during peak periods.

4.4 Noise

There would be no significant long-term effects on noise within the project area; therefore, no mitigation would be required. Methods to control the temporary increase in ambient noise generated during construction would include ensuring that construction equipment and motor vehicles meet specified noise emissions

standards, limiting construction activities to times permitted by Township ordinance and handling/transporting construction material in such a manner as to not create unnecessary noise. Equipment such as bulldozers, scrapers, backhoes, graders, loaders, cranes and trucks will be used during construction but are subject to construction noise specifications.

5.0 CONCLUSIONS

As per the performance standards in the Borough of Sayreville ordinance, the development of the subject property, as proposed, is not predicted to have any detrimental impacts to surrounding areas or the general public. The proposed development will create a more aesthetically pleasing use at the site and will continue to provide a convenient service to the residents of the Borough.

Unavoidable temporary impacts associated with project construction could include diminished air quality, increased noise levels, increases in traffic, and possible soil erosion. Unavoidable permanent adverse environmental impacts associated with project could include introduction of additional impervious surfaces (proposed building, asphalt parking areas) on a site that presently contains mostly pervious surfaces. Mitigation measures for these unavoidable impacts are implemented to ensure impacts are not significant.

The proposed project represents the most appropriate utilization of the project site given the current zoning and surrounding land uses. The project was designed to minimize significant impacts to environmentally sensitive areas on the project site. This environmental impact statement concludes that the majority of the impacts associated with the proposed project are minor in their nature and that the adverse environmental impacts that do exist, are minimal and are being handled in the most appropriate manner.

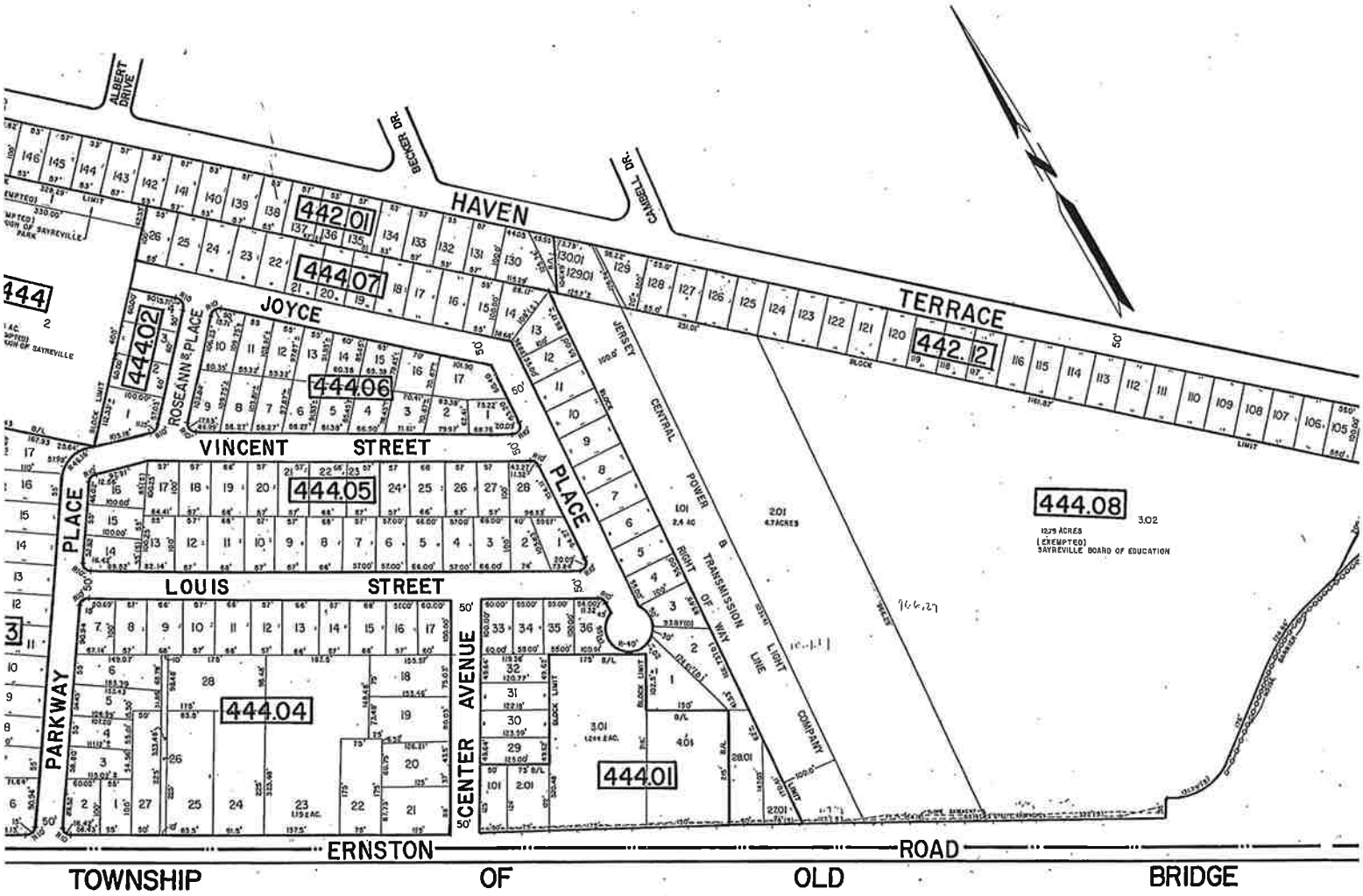
6.0 REFERENCES

- Site Plan for 216 Ernston Road, Sayreville, NJ, Prepared by AWZ Engineering, Inc., February, 2023.
- 2023 Google – Map Data@2023Google.
- United States Geologic Survey (USGS), 1995, 7.5 Minute Topographic Map of Sayreville, New Jersey.
- United States Department of Agriculture, Soil Conservation Service, Web Soil Survey of Sayreville, Middlesex County, New Jersey.
- Stanford, S.D. 1998, NJGS Information Circular: "Geologic Mapping in New Jersey". New Jersey Geological Survey, Trenton, NJ
- Dalton, Richard. 2003. NJGS Information Circular: "Physiographic Provinces of New Jersey". New Jersey Geological Survey, Trenton, NJ
- New Jersey Department of Environmental Protection, Bureau of Geographic Information Systems, Interactive Mapping (GeoWeb).
- New Jersey Department of Environmental Protection, Division of Watershed Management, Work plan for Watershed Management Area 9.
- New Jersey Department of Environmental Protection, New Jersey Geological Survey, Geologic Map of New Jersey, 1992.
- United States Environmental Protection Agency, Region II, Groundwater Management Section, Sole Source Aquifer Program, December 1990.
- Federal Emergency Management Administration (FEMA), Map Service Center, Digital Fire Insurance Rate Map (DFIRM) Database.
- L.R.V. Associates, Wetlands Investigation Report, 216 Ernston Road, Old Sayreville, NJ, Dated 2022.

APPENDIX - A

SITE MAPS

SHEET 117



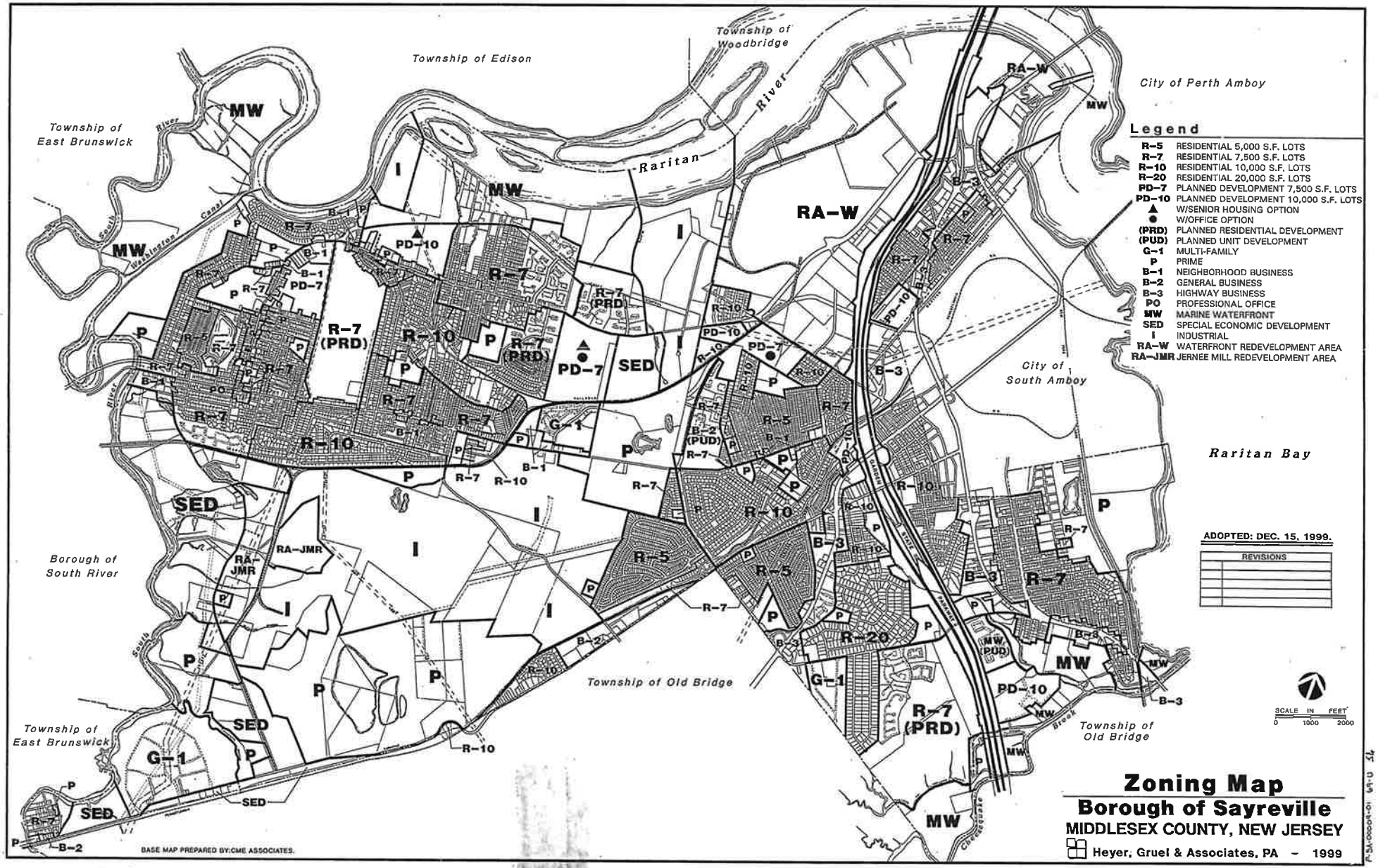
BORO
MIDI
RAYMON
DAVID

AREA MAP


Bordentown Avenue Park
Holly Dr
Karen St
Kierst St
Pinetree Dr
Johnson Ln
Singer Ct
Roseann Pl
Vincent St
Joyce Pl
Haven Terrace
Frederick Pl
Florence Dr
Louis St
Parkway Pl
Gulf
Princess Nails
Edward Jones - Financial Advisor:...
216 Ernston Rd, Parlin, NJ 08859
Garden Friends
Bordentown Ave
Ernst Memorial Cemetery
Scoliosis Technologies
Apex Dental
Ernston Rd
Rutgers Rd
Christ Church Cemetery
Samsel Upper Elementary School
Georgetown Rd
Villanova Rd
Garden State Blinds
Window treatment store
615
Jersey Strong Pool Inspection
Princeton Rd
Dartmouth Rd
Pride Landscape Supply
Landscaping supply store
Dana Estates Dr
Marshalls
Department store
Pankaj Puri
Mike's Pizza
Pizza · $$
Rafa118
Harvard Rd
Google
Saint Bernadette Parish

USGS TOPOGRAPHIC MAP

SAYREVILE, NJ



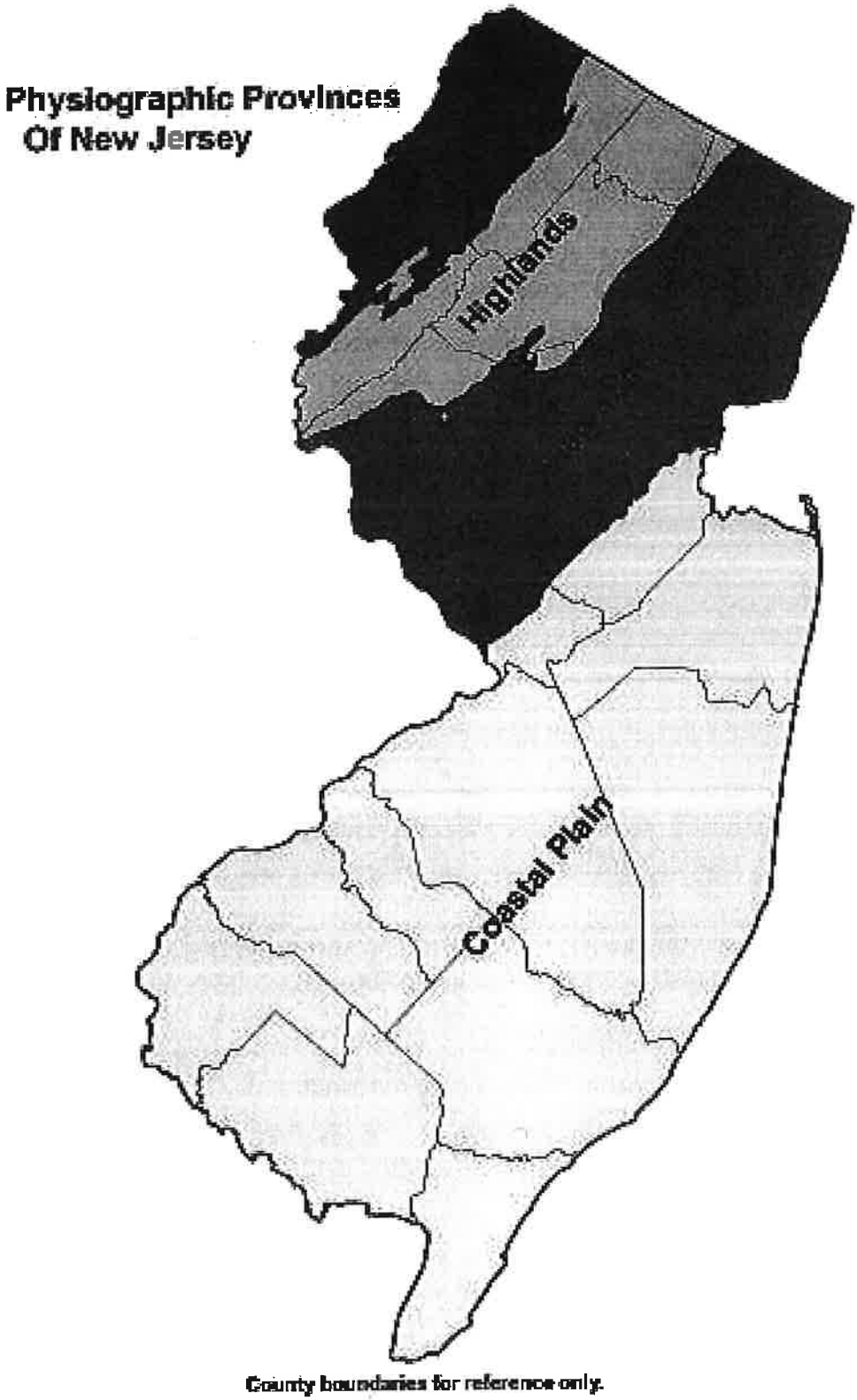
Zoning Map

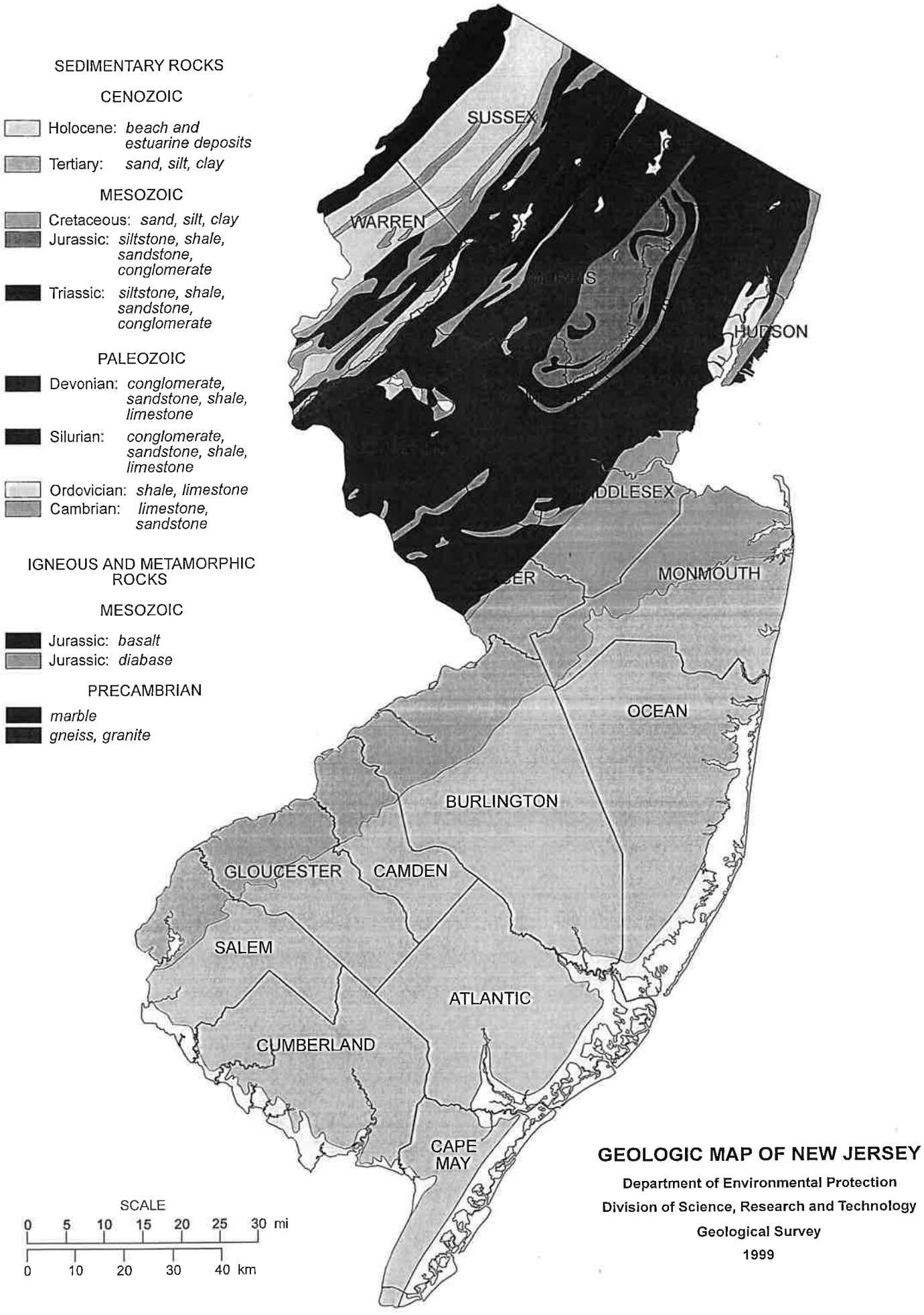
Borough of Sayreville

MIDDLESEX COUNTY, NEW JERSEY

Heyer, Gruel & Associates, PA – 1999

NJ PHYSIOGRAPHIC PROVINCES MAP





GEOLOGIC MAP OF NEW JERSEY

Department of Environmental Protection

Division of Science, Research and Technology

Geological Survey

1999

THE GEOLOGY OF NEW JERSEY

For an area of its size, New Jersey has a uniquely diverse and interesting geology. The state can be divided into four regions, known as physiographic provinces, which have distinctive rocks and landforms.

The **Valley and Ridge** Province is underlain by faulted and folded sedimentary layers of sandstone, shale, and limestone that range in age from Cambrian to Devonian (570 to 345 million years old). These rocks originated as sand, mud, and lime sediment deposited in former seas and floodplains. During Ordovician time (approximately 450 million years ago) and again during Pennsylvanian and Permian time (approximately 300 million years ago) the rocks were deformed by compression into folds and thrust along faults. As a result of the deformation, the originally flat sedimentary layers were tilted and now outcrop as linear belts.

Alternation of belts of erosion-resistant sandstone and easily-eroded shale and limestone creates the long, parallel northeast-southwest trending ridges and valleys characteristic of this province. Resistant sandstone and siltstone layers underlie Kittatinny Mountain and Walpack Ridge; shale and limestone underlie the valley of Flat Brook, the Delaware Valley upstream from the Delaware Water Gap, and the broad valley between Kittatinny Mountain and the Highlands to the east.

The limestone is quarried for construction material and cement aggregate. Some of the limestone units yield large quantities of ground water. The shales and sandstones and some limestone units are generally less productive aquifers.

On the eastern edge of the Valley and Ridge Province, along a line from Franklin through Andover to the Delaware River just north of Phillipsburg, an irregular escarpment averaging 500 feet in height marks the boundary of the **Highlands** Province. The Highlands are underlain predominantly by granite, gneiss, and small amounts of marble of Precambrian age. These rocks, the oldest in New Jersey, were formed between 1.3 billion and 750 million years ago by melting and recrystallization of sedimentary rocks that were deeply buried, subjected to high pressure and temperature, and intensely deformed. The Precambrian rocks are interrupted by several elongate northeast-southwest trending belts of folded Paleozoic sedimentary rocks equivalent to the rocks of the Valley and Ridge Province.

The granites and gneisses are resistant to erosion and create a hilly upland dissected by the deep, steep-sided valleys of major streams. The belts of sedimentary rock form long, parallel ridges and valleys (for example, Bearfort Mountain, Long Valley, and the Musconetcong Valley) that extend through the province.

The Highlands contain magnetite iron ore deposits that formerly supplied an industry of national importance. A valuable and mineralogically unique zinc ore in the Franklin Marble at Ogdensburg was also mined. In places the rocks of the Highlands are quarried for crushed stone. The Precambrian rocks are generally unproductive aquifers except where they are fractured or weathered. The more productive aquifers of the region are the glacial deposits and some of the Paleozoic sedimentary rocks.

Rocks of the **Piedmont** Province are separated from the rocks of the Highlands Province by a series of major faults, including the Ramapo Fault. The more resistant gneisses and granites on the upthrown northwest side of the faults make a prominent escarpment, 200 to 800 feet in height, extending from Mahwah through Boonton and Morristown to Gladstone, and from there westward in an irregular line to the Delaware River near Milford.

South and east of this escarpment, interbedded sandstone, shale, conglomerate, basalt, and diabase of the Piedmont Province underlie a broad lowland interrupted by long, generally northeast-southwest trending ridges and uplands. The rocks of the Piedmont are of Late Triassic and Early Jurassic age (230 to 190 million years old). They rest on a large, elongate crustal block that dropped downward in the initial stages of the opening of the Atlantic Ocean — one of a series of such blocks in eastern North America. These down-dropped blocks formed valleys known as rift basins. Sediment eroded from adjacent uplands was deposited along rivers and in lakes within the basins. These sediments became compacted and cemented to form conglomerate, sandstone, siltstone, and shale. They commonly have a distinctive reddish-brown color.

In the course of rifting, the rock layers of the Piedmont became tilted northwestward, gently folded, and cut by several major faults. Volcanic activity was also associated with the rifting, as indicated by the basalt and diabase interlayered with the sandstone and shale. Diabase is a rock formed by the cooling of magma at some depth in the crust; basalt is formed by cooling of an identical magma that has been extruded onto the surface as lava. Both basalt and diabase are more resistant to erosion than the enclosing sandstone and shale and therefore they form ridges and uplands. The Palisades, Rocky Hill, Sourland Mountain, and Cushetunk Mountain are underlain by diabase layers. The Watchung Mountains, Long Hill, and Hook Mountain are underlain by basalt layers. Valleys and lowlands between these ridges are underlain by shale and sandstone.

The basalt and diabase are extensively quarried for crushed stone. In the past, "brownstone" was widely quarried from sandstone units. Also, minor quantities of copper were extracted from sandstone and shale associated with the diabase and basalt. The basalt and diabase generally are poor aquifers but the sedimentary rocks are, in places, capable of yielding large quantities of water.

Southeast of a line roughly between Carteret and Trenton, unconsolidated sediments of the **Coastal Plain** Province overlap rocks of the Piedmont Province. These sediments, which range in age from Cretaceous to Miocene (135 to 5.3 million years old), dip toward the coast and extend beneath the Atlantic Ocean to the edge of the Continental Shelf. The Coastal Plain sediments thicken southeastward from a featheredge along the northwestern margin of the province to approximately 4,500 feet near Atlantic City to a maximum of more than 40,000 feet in the area of the Baltimore Canyon Trough, 50 miles offshore from Atlantic City. The sediments consist of layers of sand, silt and clay deposited alternately in deltaic and marine environments as sea level fluctuated during Cretaceous and Tertiary time. These layers of sediment outcrop in irregular bands that trend northeast-southwest. Wide areas of the Coastal Plain are covered by a thin veneer of Late Tertiary and Quaternary sand and gravel deposited by rivers.

The topography of the Coastal Plain generally is flat to very gently undulating. However, erosion-resistant gravel or iron-cemented sediment underlie upland areas and isolated hills, such as the Atlantic Highlands, Telegraph Hill, Mount Holly, and Arneys Mount.

Coastal Plain sediments have been mined in the past for bog iron, glass sand, foundry sand, ceramic and brick clay, the mineral glauconite for use in fertilizer, and titanium from the mineral ilmenite in sand deposits. Today the Coastal Plain sediments continue to supply glass sand and are extensively mined for sand and gravel construction material. The sand formations are productive aquifers and important ground water reservoirs.

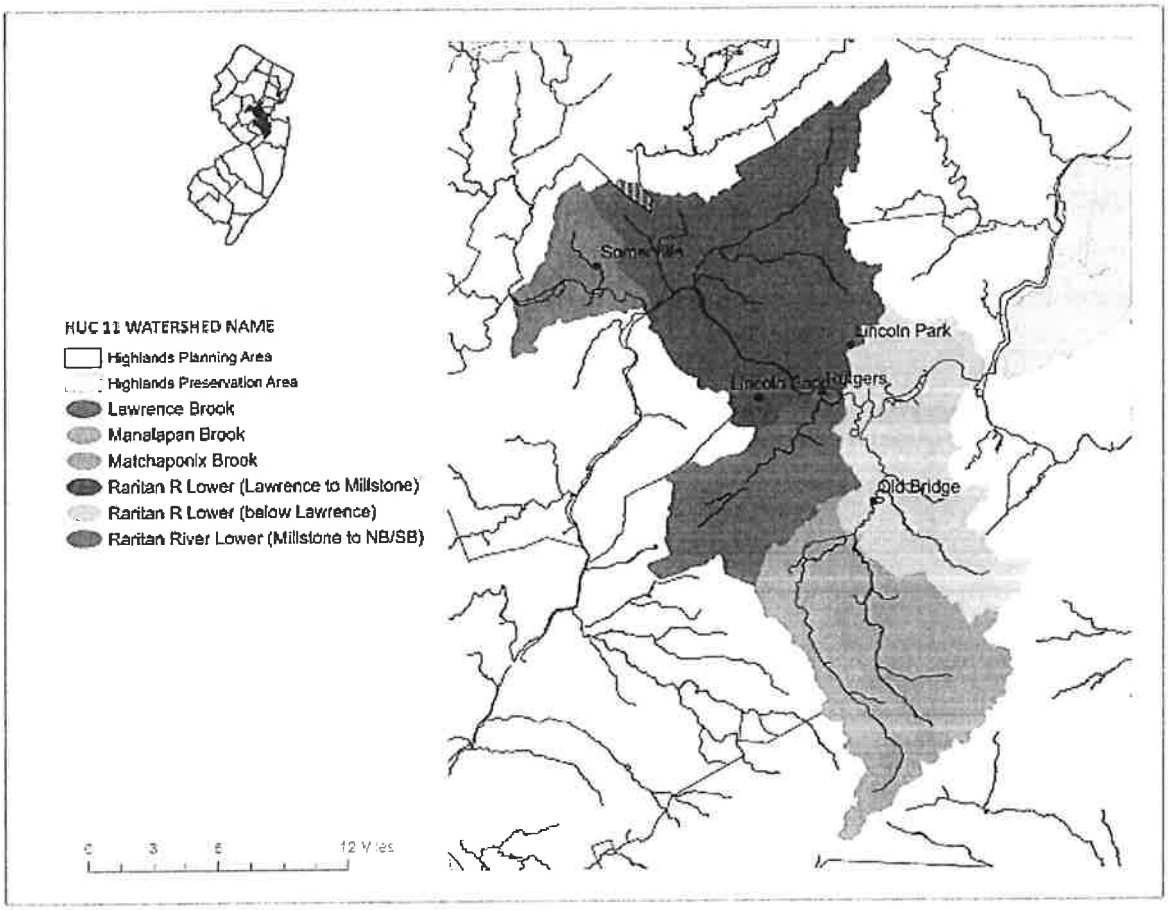
Within each of these physiographic provinces there have been major changes during the past two million years. In this time New Jersey has undergone three glaciations. The last glacier (the late Wiconsinan advance) began to melt back from its maximum extent approximately 20,000 years ago. North of the limit of the last glaciation much of the surface is covered by glacial deposits. Upland areas in this region are thinly draped with till, an unsorted mixture of sand, clay and boulders deposited directly from the glacier. Valleys and lowlands are filled with up to 350 feet of sand and gravel deposited from glacial meltwater and silt and clay that settled in glacial lakes. The sand and gravel deposits are important sources of construction material, and productive aquifers are found where sand and gravel occur in buried or filled valleys. South of the limit of Wisconsinan glaciation, there are discontinuous patches of till from older glaciations. These deposits occur on uplands and are found as far south as the Somerville area.

During each glaciation, sea level dropped as water from the oceans was transferred to ice sheets. Rivers extended and deepened their valleys to conform to the lower sea levels. When the ice sheets melted, sea level rose, flooding the deepened valleys and establishing new shorelines. The present configuration of the coast is the result of the rapid post-glacial rise in sea level, which slowed approximately 6,000 years ago. Many of the estuaries along the coast are the drowned lower reaches of former river valleys. To the east of the mainland, barrier islands were formed, and continue to be shaped, by erosion and deposition of beach sand by waves and currents. Mud and sand transported by rivers and from offshore is gradually filling the bays and estuaries between the mainland and the barrier islands, creating extensive wetlands.

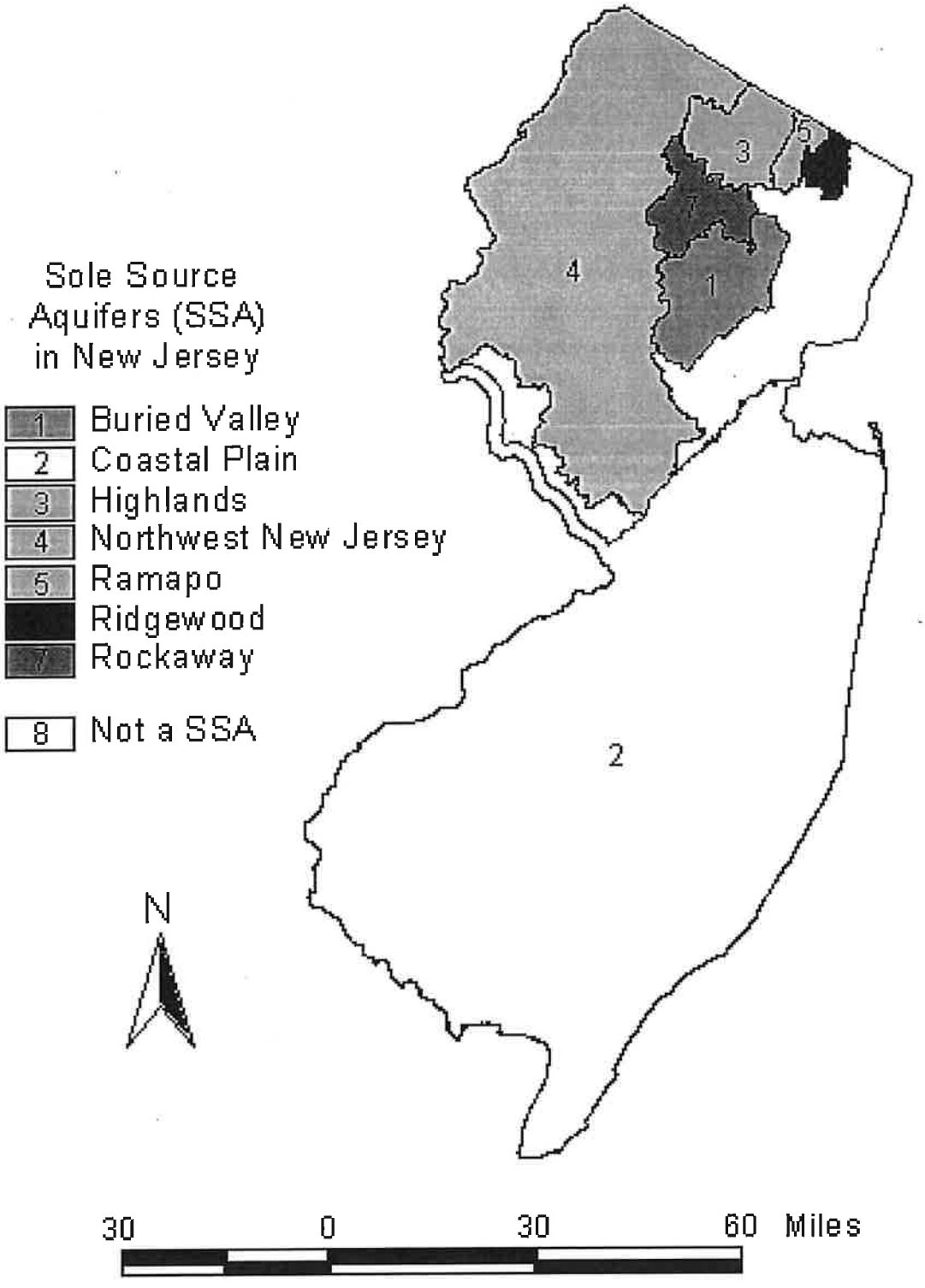
NJ WATERSHED MANAGEMENT AREA MAP

WATERSHED MANAGEMENT AREA 9

LOWER RARITAN, SOUTH AND LAWRENCE



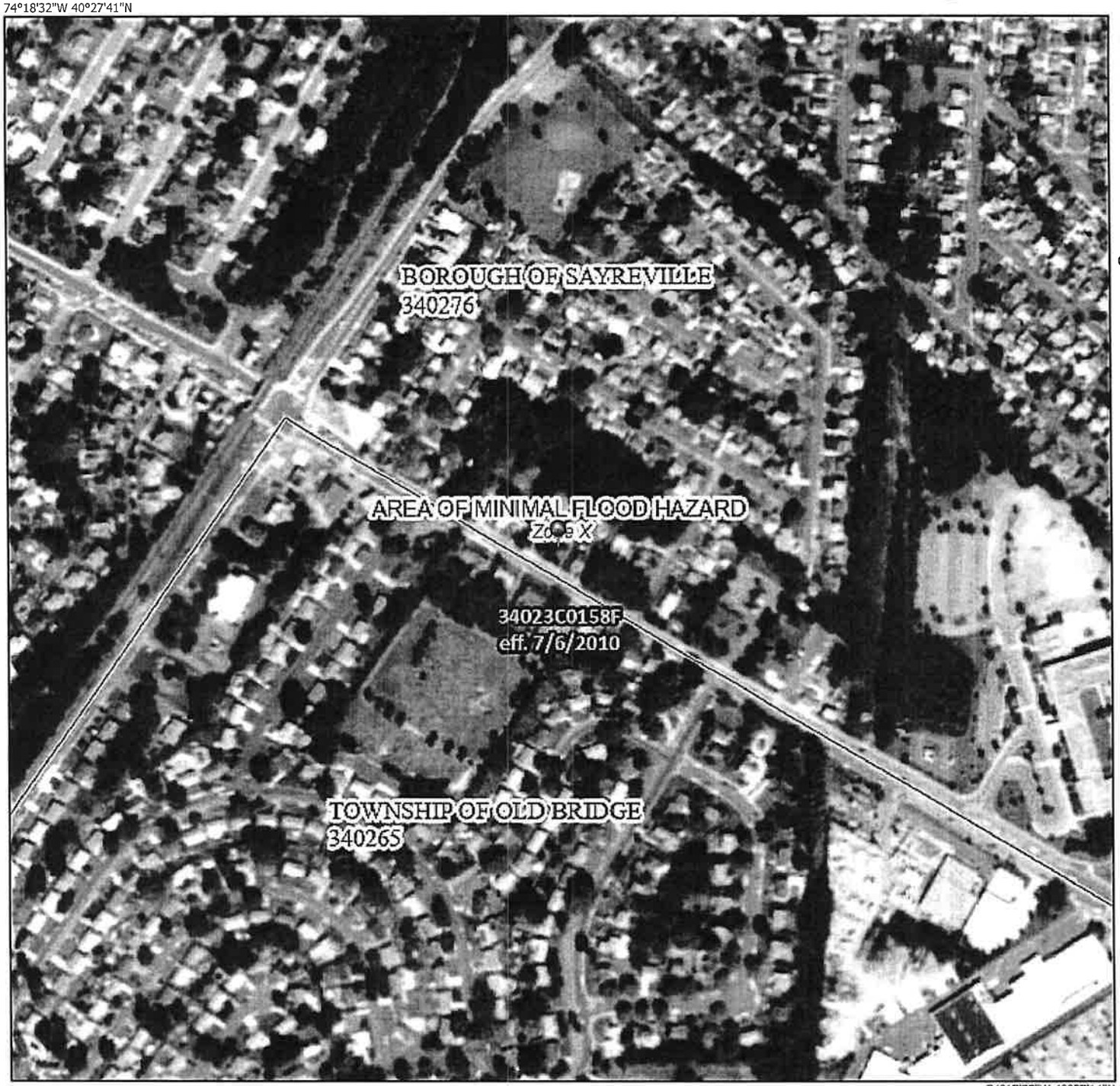
NJ SOLE-SOURCE AQUIFER MAP



National Flood Hazard Layer FIRMette

FEMA

74°18'32"W 40°27'41"N



74°17'55"W 40°27'14"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile *Zone*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 — Cross Sections with 1% Annual Chance
- 17.5 — Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

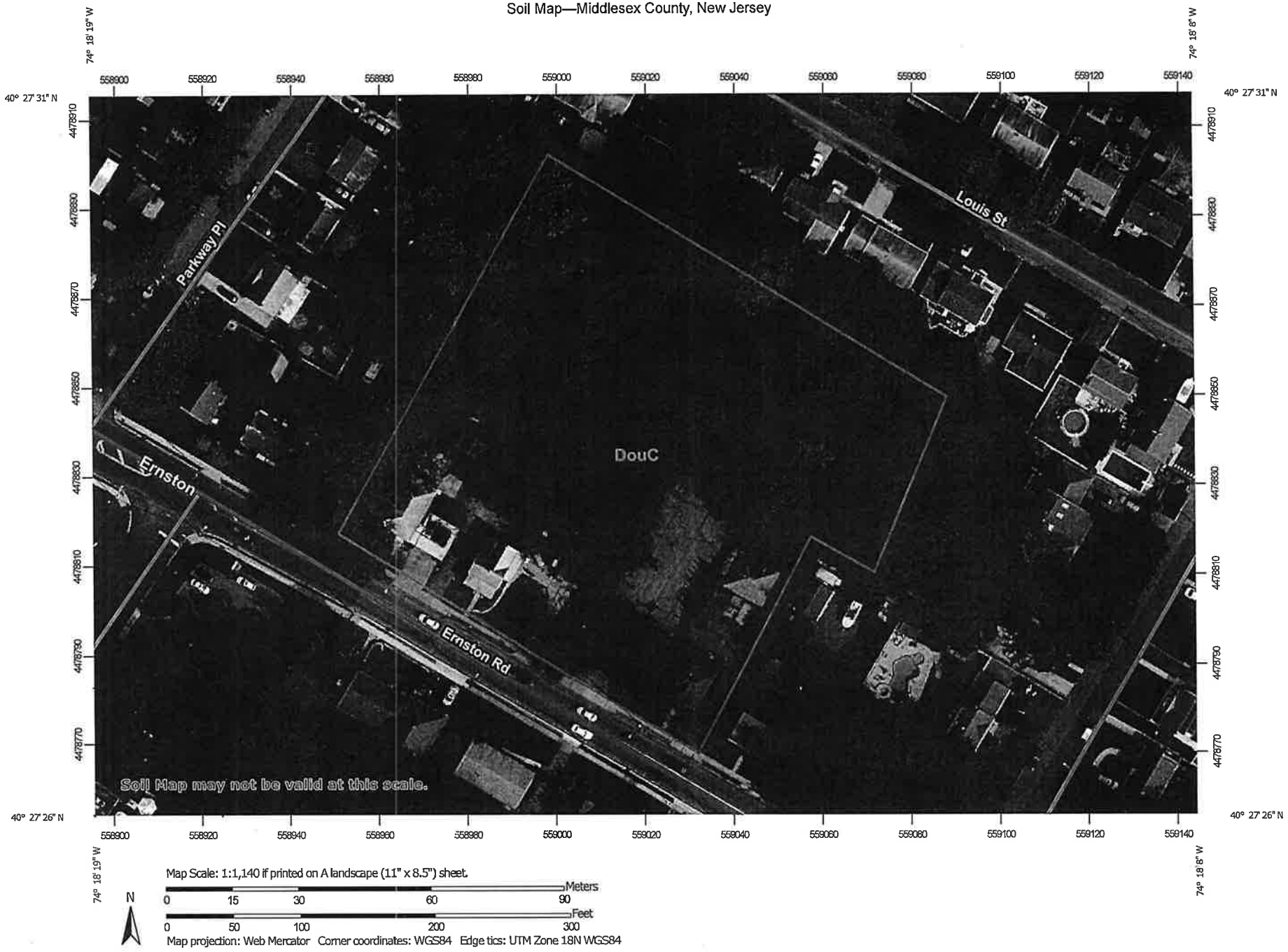
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/3/2023 at 11:14 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX – B

NRCS SOIL SURVEY INFORMATION



Map Scale: 1:1,140 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, New Jersey
Survey Area Data: Version 17, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 14, 2020—Oct 8, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DouC	Downer-Urban land complex, 5 to 10 percent slopes	2.4	100.0%
Totals for Area of Interest		**2.4**	**100.0%**

Middlesex County, New Jersey

DouC—Downer-Urban land complex, 5 to 10 percent slopes

Map Unit Setting

National map unit symbol: 4jvg
Elevation: 10 to 330 feet
Mean annual precipitation: 28 to 59 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 161 to 231 days
Farmland classification: Not prime farmland

Map Unit Composition

Downer and similar soils: 60 percent
Urban land: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Downer

Setting

Landform: Low hills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy fluviomarine deposits and/or gravelly fluviomarine deposits

Typical profile

A - 0 to 8 inches: loamy sand
E - 8 to 13 inches: loamy sand
Bt - 13 to 30 inches: sandy loam
C - 30 to 60 inches: stratified gravelly sand to sandy clay loam

Properties and qualities

Slope: 5 to 10 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: About 48 to 122 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Urban Land

Setting

Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Typical profile

C - 0 to 60 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Minor Components

Fort mott

Percent of map unit: 5 percent
Landform: Terraces, ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear, convex
Across-slope shape: Linear
Hydric soil rating: No

Sassafras

Percent of map unit: 5 percent
Landform: Knolls, low hills
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: Middlesex County, New Jersey
Survey Area Data: Version 17, Aug 31, 2021