ENVIRONMENTAL ASSESSMENT

for:

295 CEDAR GROVE LANE

Block: 508.02
Lot: 12
Township of Franklin
Somerset County, New Jersey

Prepared By:

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INTRODUCTION

The following Environmental Assessment has been prepared by Menlo Engineering Associates, Inc. pursuant to the *Township of Franklin Land Development Ordinance* (Chapter 112-24A), requiring an applicant to complete an environmental quality review for any subdivision or site plans that:

1. Covers more than 75% of the site with improvements.
2. Proposes a building with more than 5,000 square feet: or,
3. Paves more than 5,000 square feet.

This report addresses potential impacts resulting from the construction of a 14-lot subdivision. This report has been prepared because of an investigation of the site's features and a review of available published data. The published information consulted for this report may be viewed within the reference section. This report is intended to be reviewed in conjunction with the project Development Plans prepared by Menlo Engineering Associates, Inc., dated December 14, 2023.

EXECUTIVE SUMMARY

The applicant proposes subdividing this 16.54-acre parcel in Franklin Township, Somerset County into fourteen lots: Block 508.02, Lot 12 is located approximately 1,000 feet east of the Amwell Road intersection in the northeast portion of the Township. Single family dwellings are adjacent to the parcel both southwest and directly across Cedar Grove Lane.

The project proposes developing the 16.4-acre parcel into fourteen conforming single family residential lots. The tract is located in the R-40 Zone, where single family dwellings are a permitted use. The proposal meets the majority of the bulk requirements for the zone, including impervious coverage and residential buffer requirements.

The tract is comprised of secondary woodlands in the western half of the site, and remains of two buildings, an existing dwelling and a circular driveway in the eastern half. The woods are in different successional stages of converting the former farmland back to natural woodland.

The vegetation communities identified onsite are typical communities found throughout Franklin Township and the Central Jersey Piedmont. As with all forms of development that require improvements and tree removal, habit loss occurs. Mitigation measures, such as the implementation of a landscape plan and tree replacement aids in offsetting this unavoidable impact.

The nearest water course to the parcel is the Steep Hill Brook, located approximately 2,000 feet to the southwest. The plans indicate there are no 100-year floodplains and the associated Delaware and Raritan Canal Commission (DRCC) required 100-foot buffers to those floodplains. The project includes a stormwater management plan in conformance with the current NJDEP Stormwater Management Rules, therefore, the project will not cause or result in adverse impact on a downstream receiving water body.

The design program and project development planning minimize the adverse impacts to the immediate and adjacent baseline environmental conditions to the greatest extent practicable. These baseline conditions

were compiled from local published information, and various Federal, State, and County documents and a site inspection. Potential impacts were evaluated for the period during construction activities and upon occupation of the completed of the facility.

The proposal meets the majority of the zoning criteria, and it is of an intensity that is consistent with the Township's Master Plan Zoning Standards. The R-40 Residential Zone restricts the lot (building) cover to a maximum of 10% and maximum impervious cover to 20%. Therefore, the application meets the anticipated impacts contemplated by the current zoning. The development aids in meeting the demand for new housing in the community .

The construction and development of this parcel, as with any form of development, will result in certain unavoidable impacts. These unavoidable impacts have been minimized through mitigation measures employed by the applicant within the development program and all necessary permits will be obtained from the various reviewing agencies prior to construction.

1.0 PROJECT LOCATION AND DESCRIPTION

The applicant proposes subdividing this tract of a 16.54-acre vacant parcel into fourteen new single-family lots. The parcel is in the northern reaches of Franklin Township, Somerset County, New Jersey, and the municipal tax map identifies the property as Block 508.02, Lot 12. The tract occupies 451 feet of frontage along Cedar Grove Lane. Vehicular access to the property is approximately 1,000 feet north of Amwell Road. The site is located approximately twenty miles northeast of Trenton and three miles west of New Brunswick.

The parcel falls within an area zoned as R-40 Single Family Residential Zone permitting single-family lots 40,000 square feet and larger. The zone lists conditional uses including, public utility installations, schools, wireless communication antennas, as well as offices in the R-40 area. The proposed application includes frontage for the construction of fourteen new conforming single family dwelling lots. This represents a permitted use with the R-40 District.

No wetland areas are shown on the site plan. A New Jersey Department of Environmental Protection (NJDEP) Letter of Interpretation confirming this finding was received by Menlo Engineering on December 11, 2023. A copy of the Letter of Interpretation is included in the appendix of this report.

The residential subdivision combined disturbance requires the removal of 9.7 acres of trees. The tree removal is minimized to an extent practicable, encompassing only the area necessary to construct the access drive, the single-family dwellings, and the stormwater management facilities required by the NJDEP to manage the stormwater runoff. The property consists of a younger plant community dominated by pioneer species such as Eastern red cedars, red maples, and black cherry and includes sporadic oaks, maples, ash and sassafras trees. The woodlands are indicative of early to mid-stage successional communities returning the previously farmed land to Piedmont upland woodland.

The development's stormwater management plan is designed according to the Franklin Township's Land Use Regulations, Middlesex County and the NJDEP Stormwater Regulations. The system restricts the post-development peak flows to match or reduce the pre-development discharge rates, captures, and treats the vehicular use pavement runoff and replicates the pre-construction groundwater recharge in the post development condition thereby resulting in no net loss of groundwater recharge. The project will not cause any off-site flooding or adverse impacts to any downstream receiving bodies.

The project requires connections to the full spectrum of the surrounding infrastructure networks. Existing sanitary sewer facilities are located within the Birch Glen development which is East of Cedar Grove Lane. The existing facilities, which remain to be constructed by the Birch Glen developer, will consist of an 8" diameter PVC sewer main. The sewer system ultimately conveys its flow to the Birch Glen pumping station. The project proposes the construction of a sanitary sewer extension of 2,190 linear feet of 8-inch diameter PVC to provide service to the proposed development.

No Flood Hazard Individual Permit required for the stormwater outfall. The remaining utility connections, including public water will be via extensions of the services found along Cedar Grove Lane. Finally, the development plans depict new plantings to provide an aesthetically pleasing landscape design. Plantings will include ornamental, shade and evergreen trees, and shrubs and ornamental herbaceous

vegetation. These plantings serve to provide continuity throughout the development and provide limited cover for generalist wildlife species, which may visit or rest on-site.

The applicant's design philosophy is constructing new single-family dwellings with minimal environmental effects, while constructing a viable, attractive development. To achieve this goal, the project team thoroughly evaluated lot arrangements in relationship to the overall development potential and the associated impacts. The application presented herein represents a solution that achieves the minimum required program, while producing impacts to a magnitude of similar projects and the established zone. In addition, the project has been designed utilizing the Franklin Township Ordinance as guide for development. The single-family development will require minimal bulk standard relief. The combined project will not result in any significant adverse impacts.

The application provides an appropriate level of development for an underdeveloped parcel adjacent to single-family dwellings. The plan furthers the planning goals for the region by providing non-industrial, residential use within an area completely developed with single-family dwellings while taking the site's constraints into consideration. The project meets the goals and objectives of the Franklin Township Master plan. The project site is removed from the municipal boundary therefore has no impact on the surrounding municipalities or Master Plans. The site falls within an area indicated on the NJDEP *NJ-Geo-Web* as a Suburban Planning Area (PA-2), which are areas suited for further development.

2.0 SITE DESCRIPTION AND INVENTORY

2.1 Natural Resources

Natural resources include geologic formations, soil formations and types, topography, surface and subsurface hydrologic features, vegetation, and wildlife.

2.2 Geology

The site's underlying geology is consistent with that of Franklin Township and southern Somerset County. The site is found in the Triassic Lowland comprised of the Passaic formation. The region's surficial formation is reddish brown, Brunswick shale or siltstone and mudstone, which are mildly folded and faulted. The solid shale bedrock is found to be at a depth greater than 3½ feet. The *Soil Survey of Somerset County* indicates bedrock depth for the Birdsboro soils at between 1.0 to 1.5." As evidenced by the adjacent and previous site construction activities, bedrock was not a hindrance during the construction.

2.3 Soils

Soils mapped on-site primarily within the *Soil Survey of Somerset County, New Jersey* include (BhnB) Birdsboro silt loam, 2 to 6 percent slopes, (PenB) Penn silt loam, 2 to 6 percent slopes (LbtA)Landsdowne silt loam, 0 to 2 percent slopes and Royce silt loam (RoyB) 2 percent slopes. The following table demonstrates the limitations of the on-site soils for development:

Limitations	BhnB	PenB	RoyB	LbtA
Mapped percentage of site	22.3%	19.1%	50.9%	5.3%
Depth to bedrock	1.0'-1.5'	1.5-3.5'	3.5-6'	> 3.5
Seasonal High-Water Table	> 4.0'	0.5-3.0'	1.0-3.0'	1.0'-2.5'
Permeability	2.0-6.0"/hr	0.6-2"/hr.	2.0-6.0"/hr.	0.6-2.0"/hr.
pH	4.5-5.5	4.5-6.0	4.5-5.5	5.1-6.0
Foundations/with basements	Moderate	Severe	Severe	Severe
Roads & Streets	Severe	Severe	Severe	Severe
Lawns/landscaping	Severe	Moderate	Slight	Moderate

2.4 Hydrology, Water Quality, Flood Hazard Areas

The New Jersey Freshwater Wetlands Maps, as depicted on the NJDEP *NJ-GeoWeb* interactive website, depict the subject parcel as absent of regulated wetland areas. MEA representatives field evaluated the site in comparison to the limits of wetland areas mapped by NJDEP and filed an application for a Presence/Absence determination. This was confirmed with the receipt of a Letter of Interpretation from NJDEP, dated December 11, 2023.

The site drains from the higher elevations (133) found along the northwest perimeter down to the lower elevations (123) southeast.

The Soil Conservation Service Soil Survey maps are used for hydrological soil group classification. Existing and proposed conditions are calculated for the 2, 10, 25 and 100-year flows. On-site storm sewer collection system is sized for the 25-year storm and employed the Rational Method for design calculations.
A large stormwater infiltration basin will be constructed to address the increased residential subdivision's runoff, at the southeast corner of the site. The proposal will retain the existing hydrologic characteristics under the post construction condition as required by NJDEP Stormwater Management Rules. The Rules require matching the drainage areas, controlling volume and rates and stipulate no net reduction of ground water recharge in the post developed condition. The site maintains 100 percent of the average annual pre-construction groundwater recharge.

According to the Stormwater Management Rules at N.J.A.C. 7:8, a "major development" must include stormwater management measures that reduce the average annual total suspended solids (TSS) load in the development site's post-construction runoff by 80%. The proposed development utilizes four Aqua-Ponic Stormwater Biofiltration Systems to achieve the required TSS removal.

2.5 Topography

The partially undeveloped gentle to moderate sloping parcel does not contain any significant topographical features. The site drains from the higher elevations (133) found along the northwest perimeter down to the lower elevations (123) southeast.
With the exception of the stormwater outfalls and the sanitary sewer crossing, topography adjacent to the site will remain undisturbed by the project.

2.6 Vegetation and Wildlife

2.6.1 Vegetation

The previously disturbed, former farmland includes a vegetative community representing of succession converting former farmland back to woodlands. The site is a younger pioneer community comprised of Eastern red cedars and red maples, black cherry, and black locust community with sporadic hardwoods such as oaks, ash, red maple. Based on a review of historical aerials, the farming operation appears to have ceased on this site decades ago. The 16.54-acre site contains a woodland 75 percent canopy at this point. The wooded areas are typical of a low gradient Piedmont upland woodland. The site contains individuals ranging from less than 6-inches D.B.H. up to greater than 20" D.B.H. individuals scattered in the treed areas. MEA representatives did not observe any outstanding or unusual species or specimens during the tree inventory.

Invasive materials dominate the sites' understory. The limited shrub understory typically contains multiflora rose (*Rosa multiflora*) and fragrant honeysuckle (*Lonicera fragrantissima*), Russian olive (*Elaeagnus augustifolia*) and black haw viburnum (*Viburnum prunifolium*).

The woodland community's herbaceous stratums include poison ivy (*Toxicodendron radicans*), Japanese honeysuckle (*Lonicera japonica),* Japanese stiltgrass, (*Microsetegium vimineum),* Wineberry *(Rubus phoenicolasius)* as well as natives such as, snakeroot, golden rods, and small white aster. No unusual or rare plant species were observed during the site inspections.

2.6.2 Wildlife

Suburban disturbed sites are not typically habitats suitable for a diversity of wildlife. The following list of wildlife can be expected to be present or visit urban disturbed areas:

Mammals:

Common Name	Botanical Name
opossum	*Didelphis virginiana*
raccoon	*Procyon loter*
striped skunk	*Mephitis mephitis*
eastern cottontail	*Sylvilagus flezridanus*
little brown bat	*Myotis lucifugus*
eastern chipmunk	*Tamias striatus*
white-footed mouse	*Peromyscus leucopus*
red-backed vole	*Clethrinonomys gapperi*
white-tail deer	Odocoileus virginianus

Birds:

Common Name	Botanical Name
catbird	*Dumetella carolinensis*
American robin	*Turdus migratorius*
blackcapped chickadee	*Parus atricapillus*
brown-headed cowbird	*Molothurs ater*
crow	*Cocrus brackyshynchus*
bluejay	*Eyancitta cristata*
tufted titmouse	*Parus bicolor*
turkey vulture	*Cathartes aurea*
northern mockingbird	*Mimus polygluttis*

During our site inspections, a few of the above-mentioned bird species were sighted and heard in the vicinity. However, the sightings were limited to members on this list and no sightings of other mammals or amphibians were recorded. The limited diversity of the wildlife on-site arises from the relative uniformity in habitat and the intensity of the surrounding land uses.

2.6.3 Endangered or Threatened Species

No evidence or sightings of any endangered or threatened species was recorded during the site inspections. The project area has a low probability index due to the degraded, previously disturbed habitat and the intensity of the surrounding human activity. Furthermore, the NJDEP *NJ-GeoWeb* interactive mapping indicates that there are no records for rare plants, animals, or natural communities on the site.

2.7 Wetlands

Based on MEA representatives site investigations, there are no regulated features pertinent to the NJDEP. MEA submitted an application for a Letter of Interpretation Presence/Absence determination which was confirmed by NJDEP and received by Menlo Engineering on December 11, 2023. No NJDEP permitting is anticipated for this application. A copy of this Letter of Interpretation is contained in this report's appendix.

2.8 Man-Made Resources

Human made resources include existing on-site land use, adjacent land use, access and transportation patterns, zoning, Master Plan delineations, and community facilities. Single family homes surround the project on all sides of the property, and across Cedar Grove Lane.

The proposed use provides an appropriate development for an underdeveloped parcel bound by a compatible single-family homes. The plan furthers the planning goals for the region by providing single family residential lots in an area specifically zoned for residential uses while taking the site's constraints into consideration.

The proposed single-family subdivision contains fourteen single family lots. The project meets the goals and objectives of the Franklin Township Master Plan. The project site is located a significant distance from the municipal boundary that new dwellings will have no direct impact on the surrounding municipalities or Master Plans. The site falls within an area indicated on the NJDEP *NJ-GeoWeb* as a Suburban Planning Area (PA-2), which is an area suited for further development.

2.9 Utilities

The tract falls within a highly developed area; therefore, both electric and gas companies expect to have ample service available for the building expansion. Previous contacts with the various utility companies involved did not identify any capacity or allocation problems.

The Franklin Township Department of Public Works supplies water to the site and the surrounding neighborhood. The plans indicate tapping into the water main along Cedar Grove Lane, adjacent to the property. A new 8-inch water main will be extended to the existing main within to serve the (14) new single-family dwellings. New fire hydrant locations will be coordinated with Franklin Township Fire Department.

2.10 Cultural and Historic Resources

According to the *New Jersey & National Registers of Historic Places* (last update 12/2022) posted on the NJDEP Historic Preservation Office website, the site is neither adjacent to, nor contains any historic places or structures. Additionally, because the site constitutes a previously developed parcel, there is a low probability that it contains any significant archeological sites.

2.11 Pollution Problems

Information found on the NJDEP *NJ-GeoWeb* indicates there are no identified contaminated sites within the immediate proximity of the property. The Middlebush Service station located on Amwell Road to the south is the closest, with the closest Environmental Concern site (receptor addressed) being approximately two miles away at Delmonico Avenue and Wheeler Place (potable well contamination).

Water and sanitary wastewater facilities are available to the region, which significantly reduces groundwater contamination. The project does not include the use of private well water or a septic system; therefore, pollution potential or exposure is extremely limited. A subsurface collection system conveys the stormwater

produced by the new residential subdivision to an above-ground infiltration basin that treats the runoff for quality through soil infiltration, retaining the water quality storm event while controlling the discharge rate entering the tributary along the southeast property line. The stormwater management program for the project ensures that the project will not increase any downstream flooding event, improves the exiting stormwater quality, and matches the predevelopment groundwater recharge rates in the post development condition.

Soil erosion and sedimentation are not currently an issue, as the site is well-vegetated, providing stabilization to the soil. As a course of construction, the project will implement all the required aspects of a standard Soil Erosion and Sediment Control Plan reviewed and approved by the local Soil Conservation District. Air quality is consistent with central New Jersey and, since the project does not include new industrial use, will not be a factor in the development of the site.

3.0 SITE IMPACT ASSESSMENT

The implementation of the proposed development does not result in impacts that exceed the anticipated unavoidable impacts deemed appropriate for the zone. As with all development, unavoidable impacts occur, the project plans include mitigation measures to reduce those unavoidable impacts to the extent practical.

3.1 Soil Erosion and Sedimentation

Any activity exposing soil results in an increase in sedimentation and erosion due to surface runoff. With the construction of this project, it is imperative that a soil erosion and sediment control plan be developed to ensure averting transportation of soil off-site during construction. The soil erosion and sediment control plan prepared for this application will be submitted to the Somerset-Union Soil Conservation District for review and approval. The Soil Erosion & Sediment Control plan incorporates mitigation measures controlling soil erosion and off-site sediment transportation during construction. The measures include silt fence, inlet protection, construction entrance, and temporary and permanent seeding.

In addition, if a project requires temporary stockpiles on-site, they will have sediment barriers so that, during the regrading of the site, stockpiled soils are prevented from eroding and transported off-site. The installation of a construction entrance stabilizes, if not totally alleviates, soil tracking by trucks off the subject site. Finally, the site's gentle topography aids in reducing the erosion potential of the site's soils.

Certain soils within Somerset County are described as acidic (i.e., a pH factor of less than 4.0, as defined by the Soil Conservation Service), with only moderate to low fertility in their natural state. These soils require rapid re-seeding and considerable amounts of lime and fertilizer to create fertility for quick re-establishment of vegetative cover. Exposing these soils for an extended period may be detrimental to surrounding areas. Therefore, an efficient construction sequence and the provision of a temporary liming program with an expeditious re-seeding program must be implemented to minimize the project impacts. As such, the project's construction sequence minimizes soil exposure to the maximum extent practical through an aggressive timetable.

3.2 Potential for Soil Contamination

Menlo Engineering does not conduct Phased Environmental Audits. A Phase I Environmental Audit is a normal course of action prior to land development for a previously developed or significantly disturbed property.

3.3 Water Quality and Hydrological Impacts

3.3.1 Stormwater Management

According to the drainage calculations prepared by Menlo Engineering, the post-development peak flows from the site will be attenuated to be equal to, or less than, the pre-development conditions. The design criteria utilized for the Stormwater Management Plan is in conformance with the standards and guidelines as required by the NJDEP, SCS, and the Township of Franklin.

The proposed subdivision will increase impervious surfaces, but the construction of the subsurface collection system, lawn areas, swales, along with the infiltration basin ensures the control of stormwater, volume, rate, and quality. In addition, the infiltration basin ensures no net reduction of ground water recharge in the post development condition. The project effectively mitigates potential adverse environmental impacts to flood prone areas by providing the stormwater management basin as described in the Stormwater Management Report.

3.3.2 Surface and Groundwater Degradation

The development plans minimize the potential for groundwater pollution. A sanitary sewer system collects the sanitary (domestic) sewage generated by the proposed residential dwellings and discharges the waste to the Township's system via a new 8" main connected to sanitary sewer facilities located within the Birch Glen development which is East of Cedar Grove Lane. The existing facilities, which remain to be constructed by the Birch Glen developer, will consist of an 8" diameter PVC sewer main. The sewer system ultimately conveys its flow to the Birch Glen pumping station. The project proposes the construction of a sanitary sewer extension of 2,190 linear feet of 8-inch diameter PVC to provide service to the proposed development.

3.3.3 Reduction in Groundwater Capabilities

The proposal does not intend to utilize any on-site source for water supply. However, the construction of this project will increase water demand regionally and, to some extent, reduce local groundwater capabilities. The project anticipates accessing potable water through a main found in Cedar Grove Lane.

3.4 Topography – Soil Movement and Construction Sequence

3.4.1 Soil Movement

The project plans limit the extent of grading and subsequent soil movement to only those areas required to properly grade and drain the proposed development. If imported material or exported material is required, the soils will be clean, debris-free subsoil. All existing topsoil shall remain on-site and redistributed within the disturbed areas. The redistribution of the topsoil ensures the existing dormant seed bank remains on-site, thereby reducing potential impacts from soil removal and grading.

3.4.2 Construction Sequence

The construction sequence for this project is as follows:

Commencement Date	SPRING/Summer 2024
1. Installation of Silt Fence	5 Days
2. Installation of Stone at Construction Entrance	1 Day
3. Site Demolition/Temporary Stabilization	1 Day
4. Rough Clearing and Grubbing	2 Weeks
5. Rough Grading & Temporary Seeding	2 Weeks
6. Installation of Utilities & Foundations	6 Weeks
7. Curbing	1 Week
8. Pavement Sub-base	1 Day
9. Finished Grading & Lighting	3 Weeks
10. Scarify all disturbed areas around dwellings	2 Days
11. Final Pavement	1 Day
12. Landscaping & Permanent Seeding	1 Week

*Note: When a C.O. for each dwelling is applied for, all site work around the dwelling shall be completed (No. 11 subject to weather conditions and sales of individual homes to be completed between 3-6 months).

The above schedule is subject to weather conditions, sales of homesites and material availability.

3.5 Vegetation and Wildlife Impacts

3.5.1 Destruction of Vegetation and Natural Resources

The project's implementation requires plan requires approximately 9.7 acres of tree removal. Destruction of the vegetation decreases the available suitable habitat for resident wildlife on the property. The extent of clearing encompasses only the area necessary for the construction of the project elements. The habitat loss will result in a reduction of native wildlife species residing at the site during construction and in the post construction condition, due to the removal of food sources and cover. However, the resident wildlife species observed and likely to be found onsite are very adaptable generalist species and will disperse to surrounding areas.

During our site inspection, we did not observe any unique wildlife residing on-site and the site's proximity to human activity precludes its use as a major wildlife habitat. Only transient visitation by a few bird species and gray squirrels were noted in the vicinity of the tree removal. The commencement of the more intense human activity of construction will temporarily remove the site from transient visitations.

The proposed planting plan provides some mitigation for the loss of vegetative cover and wildlife habitat. The plan incorporates the use of materials that afford limited habitat for resident species. The planting of native trees and evergreens provides a nesting and resting area for birds, while providing shelter for mammal species. The provision of landscape materials serves a two-fold function: first, the plantings contribute a visual continuity assisting in the preservation of the local character; second, the use of trees and evergreens provide food and supply a limited habitat for the return of selective wildlife species. Although these measures will not replace lost habitat, the proposed plans mitigate the impact to the extent practicable. Furthermore, since the parcel does not support unusual or endangered wildlife species, any resident population will return upon completion of the construction activities.

3.6 Desirable Growth Pattern

The proposed subdivision in part addresses the unmet housing demand of Franklin Township, and the region.

The project does comply with the majority of the R-40 District requirements including not exceeding the district's 10% building coverage requirement or the 20% impervious coverage requirements. The only variance is for frontage on two corner lots. The proposed development is an appropriate intensity for a parcel located in the State Plan's Suburban Planning Area PA-2 and compatible with the surrounding development pattern.

3.7 Community Services, Public Health, and Conservation Measures

No severe demand on community services can be expected from this project, when compared with the Township's overall demand for such services. The consumption of energy during construction and operation represents the unavoidable, irreversible commitment of resources associated with human activities. The respective utility companies do not expect any problems meeting the energy needs for the new subdivision.

Water Supply

The Franklin Township Water Department will service the proposed 14 single-family residences. Potable water will be conveyed to the new single-family homes via a new eight" main connected to the public water main found within Cedar Grove Lane. Water conservation measures are typically employed within new residential building construction that includes flow restrictors to regulate minimum flow and flush rates on faucets and water closets. These architectural details are typically incorporated into the current building construction codes and their application is to be determined by the architect and owner.

The estimated water consumption based on the New Jersey Residential Site Improvement Standards (RSIS) standards (NJAC 5:21-5.1) is as follows:

Establishment Type		Number of Measurement Units		Gallons per Day per Unit		Projected Flow (G.P.D.)
Single Family Home		14	X	395	=	5,530
TOTAL					=	**5,530**

Sanitary Sewer System

The disposal of solid and liquid waste by application to land presents a substantial threat to surface and ground water quality. The proposed development does not include any on-site disposal of waste. The project will be connected to the township's sanitary sewer system serving the region. Previous contact with the Sewerage Authority indicated that there are no known capacity problems within the area. The estimated daily sanitary sewer flow discharged from this site is calculated as follows (based on NJAC 7:14A-23.3):

Establishment Type		Number of Measurement Units		Gallons per Day per Unit		Projected Flow (G.P.D.)
Single Family Homes		14	X	300	=	4,200
TOTAL					=	**4,200**

3.8 Consistency with Municipal Plans

The proposed residential development of this site is consistent with, and does not contradict, the State or Township Master Plans, or any municipal ordinances relating to bulk requirements. Furthermore, the proposed development will be compatible with the surrounding existing single-family developments.

The proposed subdivision meets the intent of the standards set in the zoning ordinance.

4.0 UNAVOIDABLE ADVERSE IMPACTS

The proposed development has been designed to minimize the impacts on the environment. However, with all forms of land development, some environmental impacts are unavoidable. The development of this parcel will remove existing trees providing suitable habitat for some species. The project plans limit the tree removal to only those areas required to properly construct single family dwellings, the new road, and the stormwater management basin. Upon removal of the construction activities, displaced generalist species are expected to return to the site. As with any development, habitat loss occurs. Since the parcel's wooded area is surrounded by fully developed residential properties, the wildlife using and residing on this site is limited to highly adaptable species that are able to find shelter and food sources in these developed neighborhoods. An increase in traffic will have a minimal impact on the regional air quality along the adjacent roadway network. However, there is a countervailing trend of improved air quality and increased traffic volumes which results from the more stringent emission control systems required on newer automobiles.

The creation of impervious surfaces results in a site-specific decrease of water-infiltrating underlying aquifers, however, the site's contributing area is negligible compared to the extent of the underlying aquifer. To further mitigate the potential loss of groundwater recharge, the project's Stormwater Management Report indicates that the project matches the pre-development groundwater recharge rates in the post development condition, therefore, it meets the Stormwater Management Rules of no net loss of groundwater recharge.

The increase in runoff is detained within the infiltration basin and released at a controlled rate to ensure no increased peak flow rates downstream.

The project has been designed with the minimum environmental impact as practical. Any negative environmental effect resulting from development stems from the cumulative effects of many developments within the surrounding region.

5.0 MITIGATION POTENTIAL

Environmental impacts caused by the construction of 14 new single-family homes have been analyzed as required by the *Township of Franklin Land Development Ordinance*. The proposed development plan reduces and/or mitigates the project's impact on several components of the environment:

1. Proposed landscaping will provide visual integration of the project with the surrounding environment, along with providing limited habitat for the return of selective species displaced from project implementation.

2. Sediment and soil erosion controls will mitigate soil loss and runoff pollution.

3. Road access and site circulation have been designed to minimally affect traffic circulation.

4. Energy and water conservation devices may be incorporated into the design of the buildings and other aspects of the project, reducing demand for service.

5. Stormwater peak runoff rates will not be greater than the existing peak flows, the runoff is directed to the infiltration basin treating the runoff for water quality while allowing it to infiltrate into the underlying soil ensuring the project matches the predevelopment ground water recharge rate. The stormwater management plan also incorporates "green infrastructures" to mitigating groundwater recharge, stormwater quality and quantity. The design criteria utilized for the Stormwater Management Plan is in conformance with the standards and guidelines as required by the NJDEP, SCS, and the Township of Franklin.

The impacts have been assessed and, where possible, mitigated to the maximum extent practical for this project. These mitigatory measures have been incorporated into the site development plans.

The proposed development does not represent a substantial detriment to the surrounding environment, public welfare,

6.0 ALTERNATIVES

During the design process the design team reviewed alternatives and evaluated their success on achieving the design program, associated environmental impacts, social impacts, and feasibility. The team evaluated the following alternatives:

1. Design and engineering alternatives.

2. No development.

The design process for this application included studying and discussing alternative methods of layouts and engineering practices. The site development plans are the summation of incorporating the most effective, efficient, and sensitive methods of this type of project development. Different scenarios were developed and were eliminated due to their greater impact or engineering requirements.

The second alternative evaluates the impacts that the no-build scenario would have on the Township of Franklin. Although this scenario does not have a greater environmental impact on the site, it would deny the economic and social benefits of supplying housing in an area of high demand.

Given the mitigation measures taken in the design of the project and the assessment of the impacts of the proposed construction, the proposed commercial development represents an appropriate development along Cedar Grove Lane providing housing options in an underserved region.

7.0 PERMITS AND APPROVALS

1. Township of Franklin, Site Plan & Subdivision Approvals
2. Somerset County Planning Board – Site Plan Approval
3. Somerset-Union Soil Conservation District – Soil Erosion and Sediment Control Certification
4. NJDEP – RFA for Stormwater Discharge from Construction Activities
5. NJDEP- Presence/Absence determination/ Letter of Interpretation
6. NJDEP- Water Extension
7. NJDEP – Treatment Works Approval
8. Delaware and Raritan Canal Commission
9. Franklin Township Water & Sewer Department
10. Local Building Permits

8.0 REFERENCES

1. Farrand, John Jr. Eastern Birds. New York: McGraw-Hill Book Company: Chanticleer Press, Inc.

2. Federal Government. Federal Manual for Identifying and Delineating Jurisdictional Wetlands. Government Printing Warehouse. January 10, 1989.

3. Hightshoe, Gary L. Native Trees, Shrubs, and Vines for Urban and Rural America. New York: Van Nostrand Reinhold Company. 1989.

4. Macbeth Division of Kollmorgan Corporation. Munsell Color. Munsell Soil Color Charts. Baltimore, Maryland. 1975.

5. NJDEP Bureau of GIS. NJ-GeoWeb. August 2021. <http://www.nj.gov/dep/gis/apps.html>

6. NJDEP Division of Air Quality. 2022 Air Quality Report. November 2023.

7. NJDEP Division of Parks and Forestry. New Jersey and National Registers of Historic Places. Last updated June 2023. <https://www.nj.gov/dep/hpo/1identify/nrsr_lists/Somerset.pdf>

8. NJDEP. Freshwater Wetland Protection Act Rules. (N.J.A.C. 7:7A). Last amended: July 2023

9. NJDEP. Flood Hazard Area Control Act Rules. (N.J.A.C. 7:13). Last amended: July 17, 2023.

10. NJDEP. NJ Stormwater Best Management Practices Manual. April 2004, Updated July 2023.

11. NJDEP. Stormwater Management. (N.J.A.C. 7:8). Last updated July 17, 2023

12. Township of Franklin. Chapter 112 Land Development. https://ecode360.com/6274401

13. United States Department of Agriculture. Soil Conservation Service, Soil Survey, Somerset County, New Jersey. Washington, D.C.: Government Printing Office. 1972

14. Widmer, Kemble. The Geology and Geography of New Jersey. Princeton, New Jersey: D. Van Nostrand Company, Inc. 1964.

9.0 AUTHOR'S CREDENTIALS

The following credentials are presented to document the professional skills of Mr. Kenneth R. Grisewood, ASLA. This information is presented as an overview of his education, field, and professional experience.

BACHELOR'S DEGREE EDUCATION

Bachelor of Science in Landscape Architecture, College of Agriculture, University of Kentucky, 1980.

POST GRADUATE EDUCATION

Rutgers University, Graduate School of Management

CIVIC & PROFESSIONAL AFFILIATIONS:

Member, Holland Township Planning Board	2013-
Township Councilman, Bloomsbury NJ	1999-2001
Chairperson, Tewksbury Township Environmental Commission	1988-1992
Member, Tewksbury Township Parks Committee	1989-1992
Director, Chatham Jaycees	1988-1989
Tewksbury Township Landscape Architect	1995-1996
American Society of Landscape Architect, Member	1985-

PROFESSIONAL REGISTRATION

Licensed Landscape Architect, New Jersey, 1985
Registered Landscape Architect, Delaware, 2012
Registered Landscape Architect, Pennsylvania, 1993
Registered Landscape Architect, New York, 1991
Registered Landscape Architect, Kentucky, 1983
Professional Planner, New Jersey, 2010

PROFESSIONAL EXPERIENCE

Menlo Engineering Associates, Inc., Principle Senior Landscape Architect, Environmental Specialist, 1993-present

Simoff & Staigar Associates, Landscape Architect, Environmental Specialist and Regulatory Permit Specialist, 1985-1993

John Charles Smith Associates, Landscape Architect, Construction and Project Manager, 1980-1985

The experience acquired over 40 years includes responsibilities within the following:

- Natural Resources Inventories
- Site Development Plans
- Environmental Impact and Analysis
- Development Permitting Process
- Endangered Species Reports
- Wetland Evaluation and Determination
- Expert Testimony
- On-Site Construction Review

APPENDIX

State of New Jersey

PHILIP D. MURPHY
Governor

TAHESHA L. WAY
Lt. Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Land Resource Protection
Mail Code 501-02A
P.O. Box 420
Trenton, New Jersey 08625-0420
www.nj.gov/dep/landuse

SHAWN M. LATOURETTE
Commissioner

December 11, 2023

Akshay Joshi
Odin Dhun LLC
55 Carter Drive, Suite L2
Edison, NJ 08817
Via email

RE: Letter of Interpretation: **Presence/Absence Determination**
File and Activity No.: 1808-22-0011.1 FWW220001
Applicant: Odin Dhun LLC
Block and Lot: [508.02, 12]
Franklin Township, Somerset County

Dear Mr. Joshi:

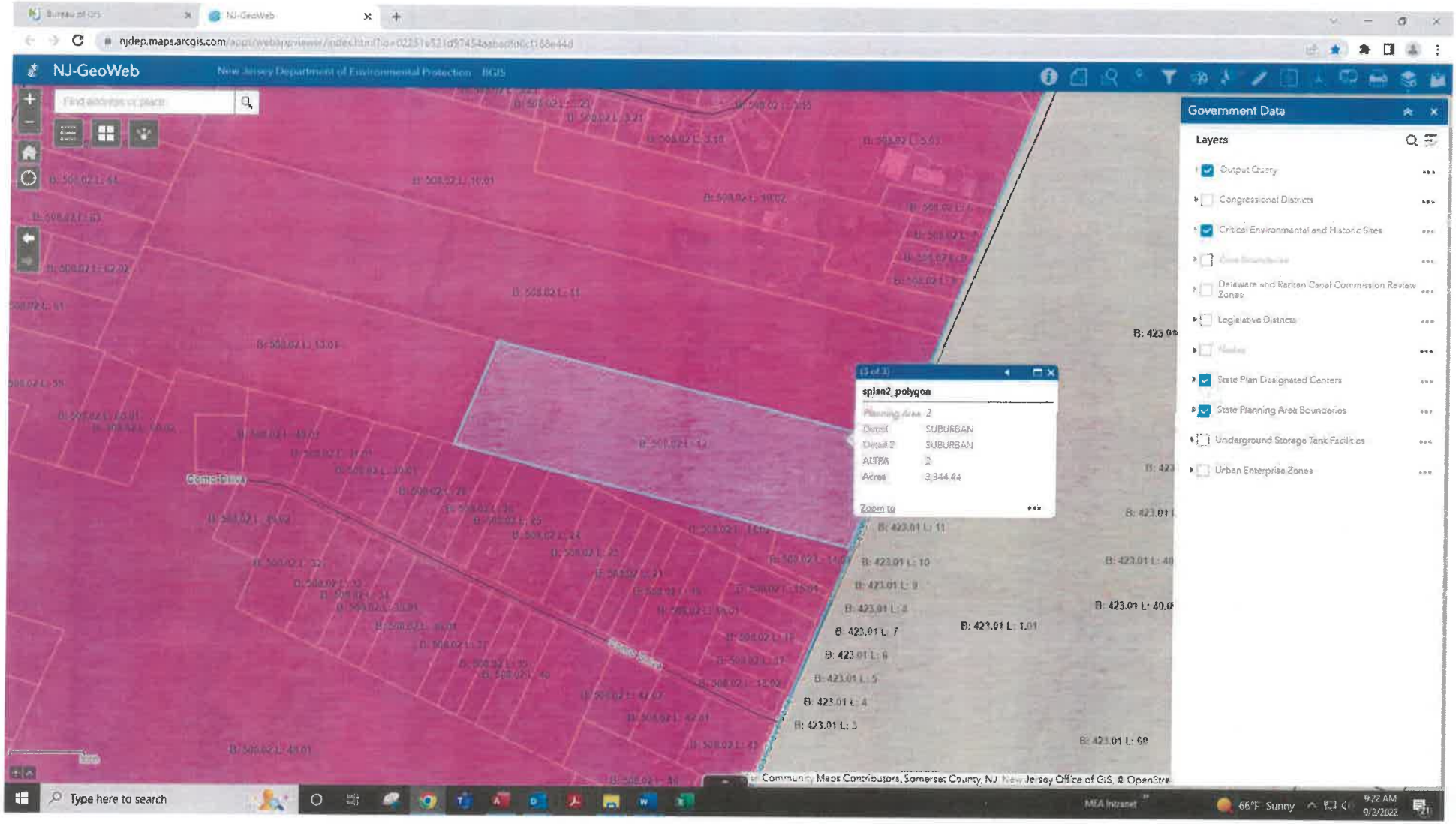
This letter is in response to your request for a Letter of Interpretation from the Division of Land Resource Protection (Division) indicating the presence or absence of freshwater wetlands and waters on the referenced property.

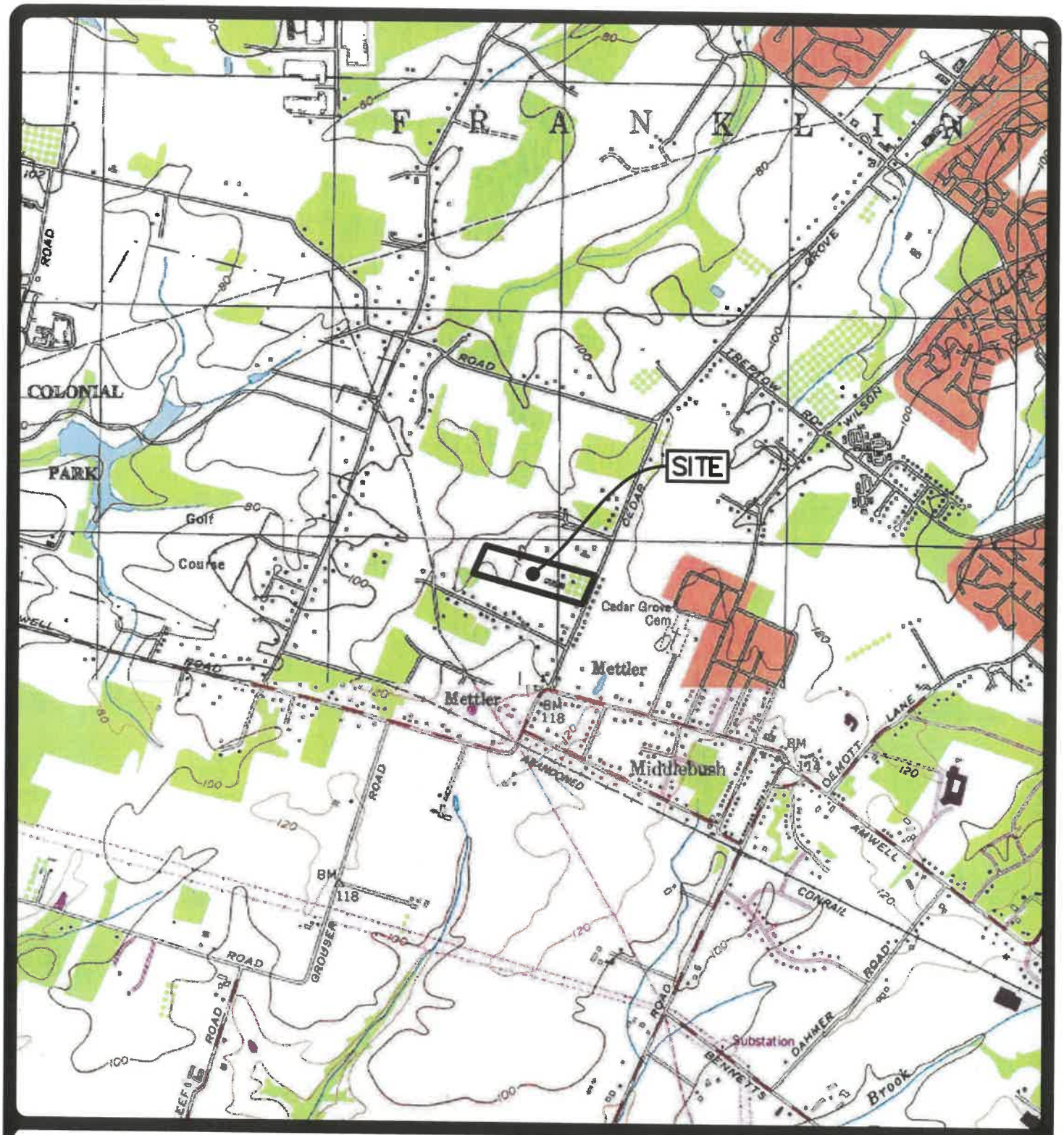
In accordance with agreements between the State of New Jersey Department of Environmental Protection (NJDEP), the U.S. Army Corps of Engineers (USACOE) Philadelphia and New York Districts, and the U.S. Environmental Protection Agency (USEPA), the NJDEP, Division of Land Resource Protection is the lead agency for establishing the extent of State and Federally regulated wetlands and waters. The USEPA and/or USACOE retains the right to reevaluate and modify the jurisdictional determination at any time should the information prove to be incomplete or inaccurate.

Based upon the information submitted, and upon a site inspection conducted by Division staff on November 21, 2023, the Division has determined that **freshwater wetlands and waters are not present** on the referenced property. In addition, the Department has determined **that no part of the above referenced property occurs within a transition area or buffer** as designated in N.J.A.C. 7:7A-3.3(d)1 and 2.

Pursuant to the Freshwater Wetlands Protection Act Rules (N.J.A.C. 7:7A), you are entitled to rely upon this jurisdictional determination for a period of five years from the date of this letter. This letter in no way legalizes any fill which may have been placed, or other regulated activities which may have been conducted on this site. This determination does not affect your responsibility to obtain any State, Federal, county or municipal permits which may be required.

STATE PLANNING AREAS





U.S.G.S. MAP

Quad Name: Bound Brook
Franklin Township
Somerset County

N

BLOCK 508.02

LOT 12

MENLO ENGINEERING ASSOCIATES, INC.
261 CLEVELAND AVENUE
HIGHLAND PARK, NJ 08904
(732) 846-8585

State Plane Coordinates:
N: 608,645.41 ft.
E: 480,777.91 ft.

0 1,000' 2,000'
600' 1,500'

Scale: 1"=2,000± ft *Job # 2022.075*

JSJ

ROAD MAP

Franklin Township
Somerset County

N

BLOCK 508.02

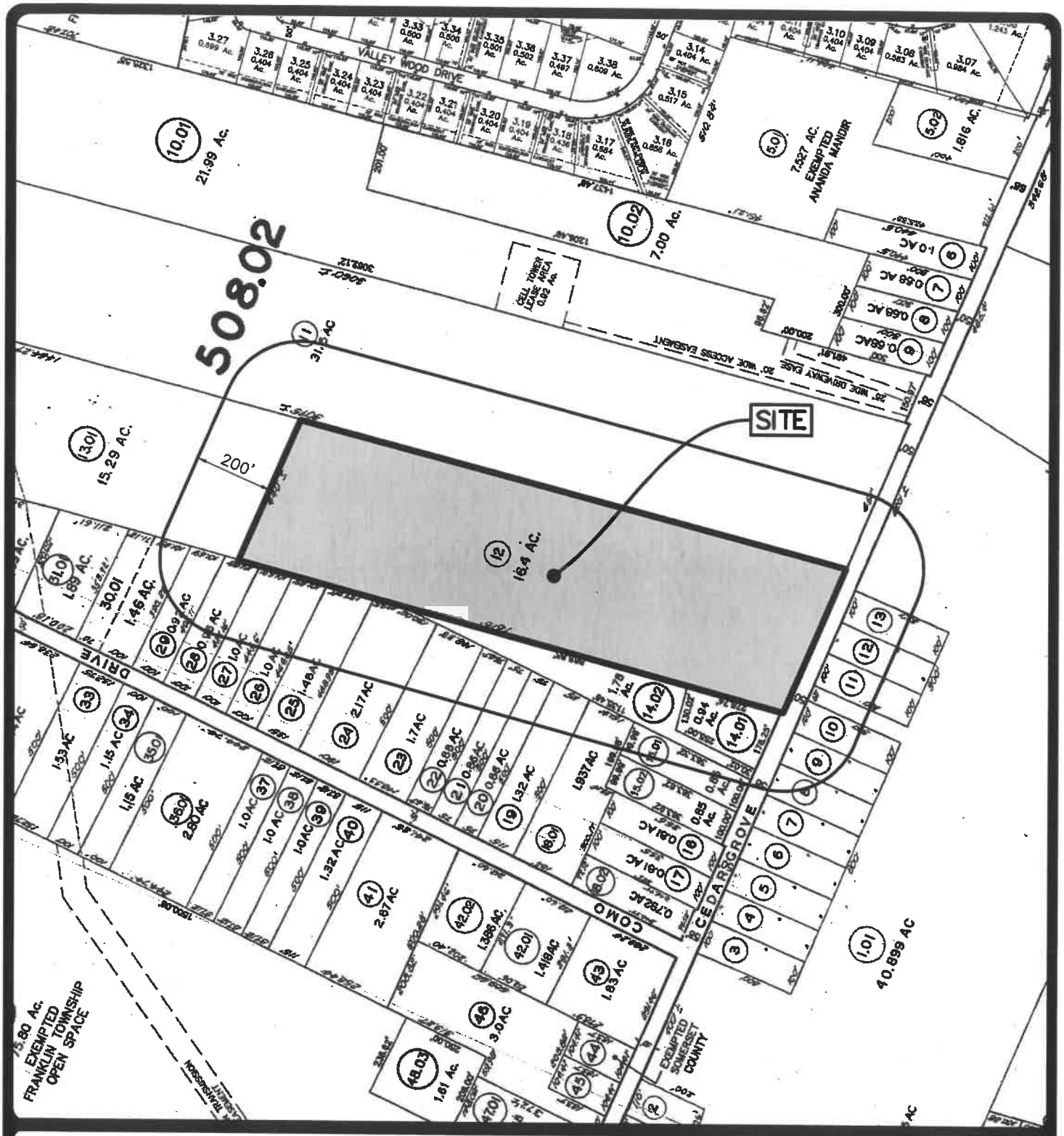
LOT 12

MENLO ENGINEERING ASSOCIATES, INC.
261 CLEVELAND AVENUE
HIGHLAND PARK, NJ 08904
(732) 846-8585

0 500' 1,000'
250' 750'

Scale: 1"=1,000±ft *Job # 2022.075*

JSJ



TAX MAP

Sheet Number: 65
Franklin Township
Somerset County

N

BLOCK
508.02

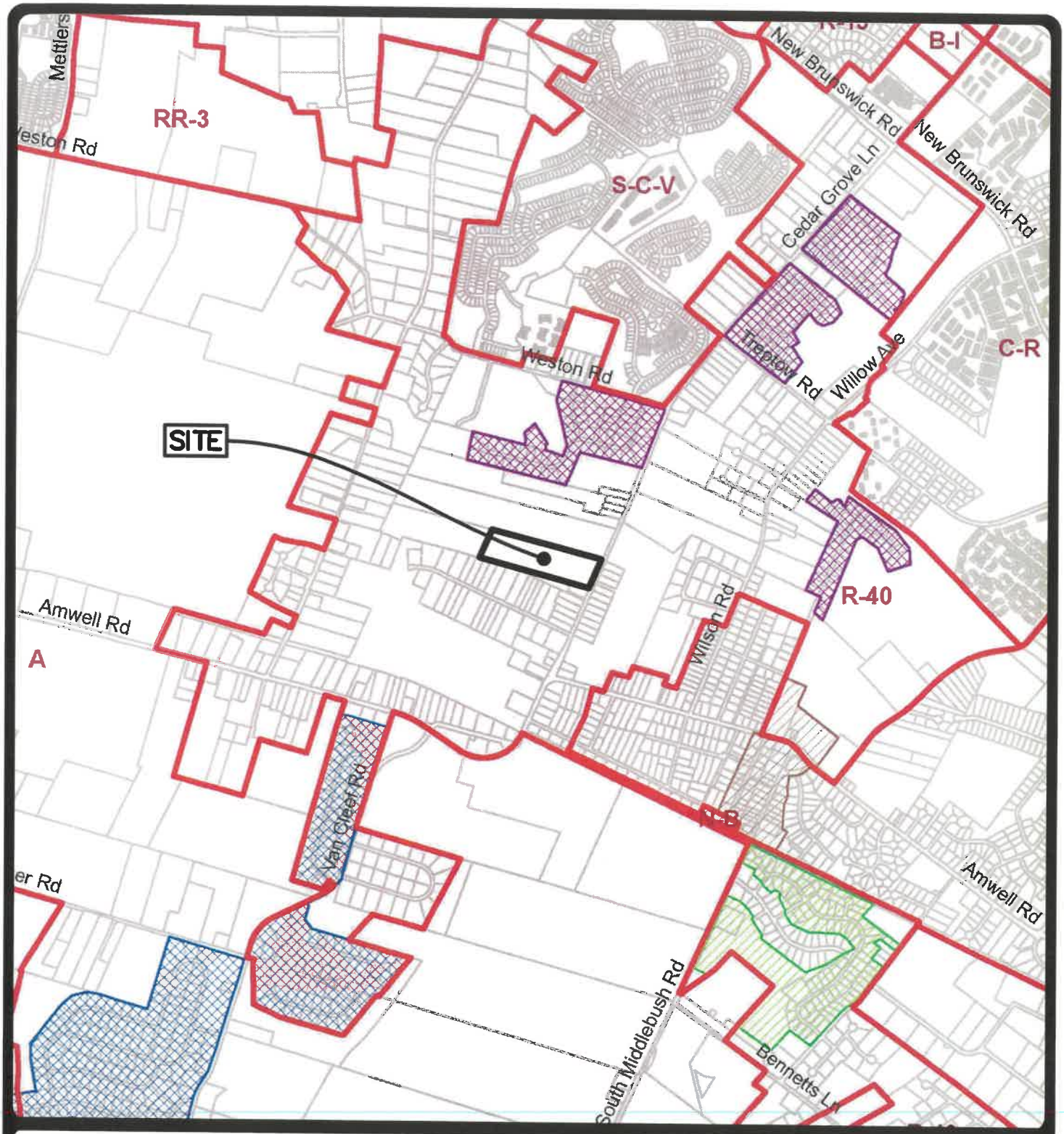
LOT
12

MENLO ENGINEERING ASSOCIATES, INC.
261 CLEVELAND AVENUE
HIGHLAND PARK, NJ 08904
(732) 846-8585

0 100' 200' 300' 400'

Scale: 1"=400± ft *Job # 2022.075*

JSJ



ZONING MAP

Zone: Single-Family Residential (R-40)
Franklin Township
Somerset County

BLOCK 508.02

LOT 12

MENLO ENGINEERING ASSOCIATES, INC.
261 CLEVELAND AVENUE
HIGHLAND PARK, NJ 08904
(732) 846-8585

0 500' 1,000' 1,500' 2,000'

Scale: 1"=2,000±ft Job # 2022.075

JSJ

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map was New Jersey State Plane (FIPSZONE 2900). The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit their website at www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from digital orthophotography provided by the Somerset County GIS Department. This information was produced at a scale of 1:2,400 from aerial photography dated March 2007.

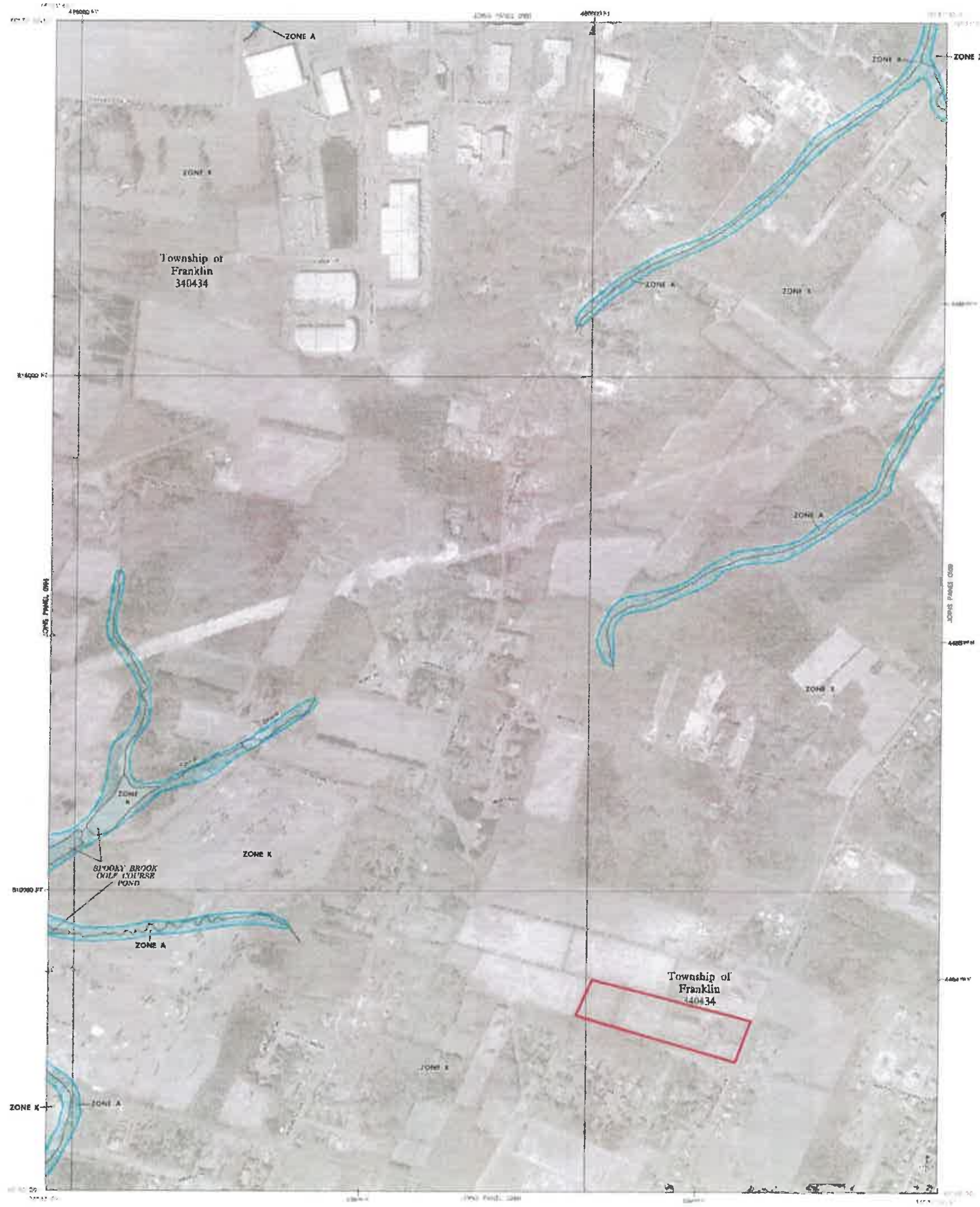
Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://www.msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- (A)—(A) Cross section line
- (23)- - - -(23) Transect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 1000-meter Universal Transverse Mercator grid ticks, zone
- 600000 FT — 5000-foot grid values: New Jersey State Plane coordinate system, FIPSZONE 2900, Transverse Mercator projection
- DX5510 X — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- • M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
SEPTEMBER 28, 2007

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

PANEL 0168E

FIRM
FLOOD INSURANCE RATE MAP

SOMERSET COUNTY,
NEW JERSEY
(ALL JURISDICTIONS)

PANEL 168 OF 381

CONTAINS:

COMMUNITY	NUMBER	PANEL
FRANKLIN, TOWNSHIP OF	340434	0168

MAP NUMBER
34035C0168E

EFFECTIVE DATE
SEPTEMBER 28, 2007

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

Soil Map—Somerset County, New Jersey

Map Scale: 1:2,950 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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: Somerset County, New Jersey
Survey Area Data: Version 19, Aug 31, 2021

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

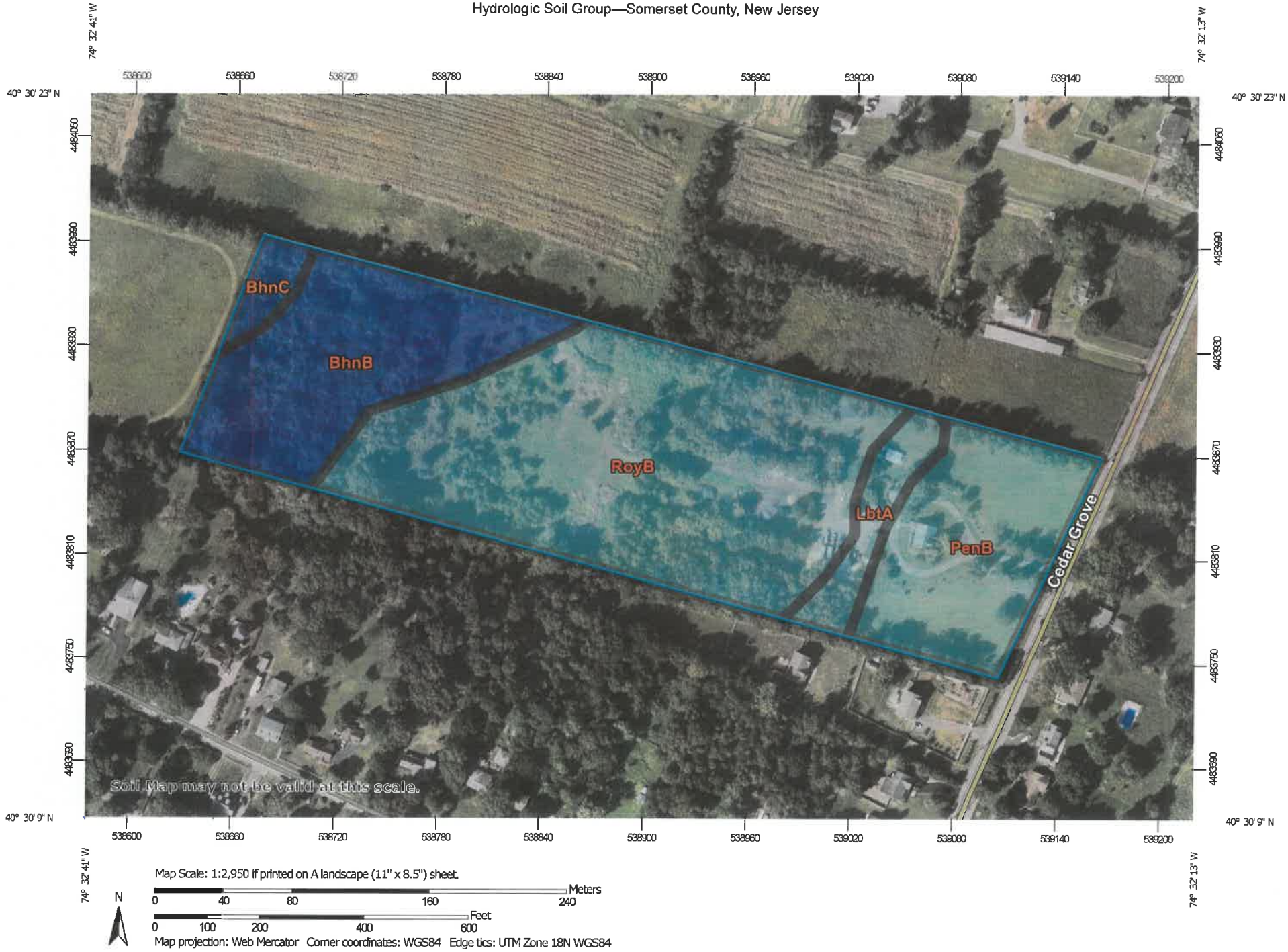
Date(s) aerial images were photographed: Sep 14, 2020—Oct 8, 2020

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
BhnB	Birdsboro silt loam, 2 to 6 percent slopes	3.8	22.3%
BhnC	Birdsboro silt loam, 6 to 12 percent slopes	0.4	2.4%
LbtA	Lansdowne silt loam, 0 to 2 percent slopes	0.9	5.3%
PenB	Penn silt loam, 2 to 6 percent slopes	3.2	19.1%
RoyB	Royce silt loam, 2 to 6 percent slopes	8.6	50.9%
Totals for Area of Interest		**16.8**	**100.0%**

Hydrologic Soil Group—Somerset County, New Jersey



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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: Somerset County, New Jersey
Survey Area Data: Version 19, 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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BhnB	Birdsboro silt loam, 2 to 6 percent slopes	B	3.8	22.3%
BhnC	Birdsboro silt loam, 6 to 12 percent slopes	B	0.4	2.4%
LbtA	Lansdowne silt loam, 0 to 2 percent slopes	C	0.9	5.3%
PenB	Penn silt loam, 2 to 6 percent slopes	C	3.2	19.1%
RoyB	Royce silt loam, 2 to 6 percent slopes	C	8.6	50.9%
Totals for Area of Interest			**16.8**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

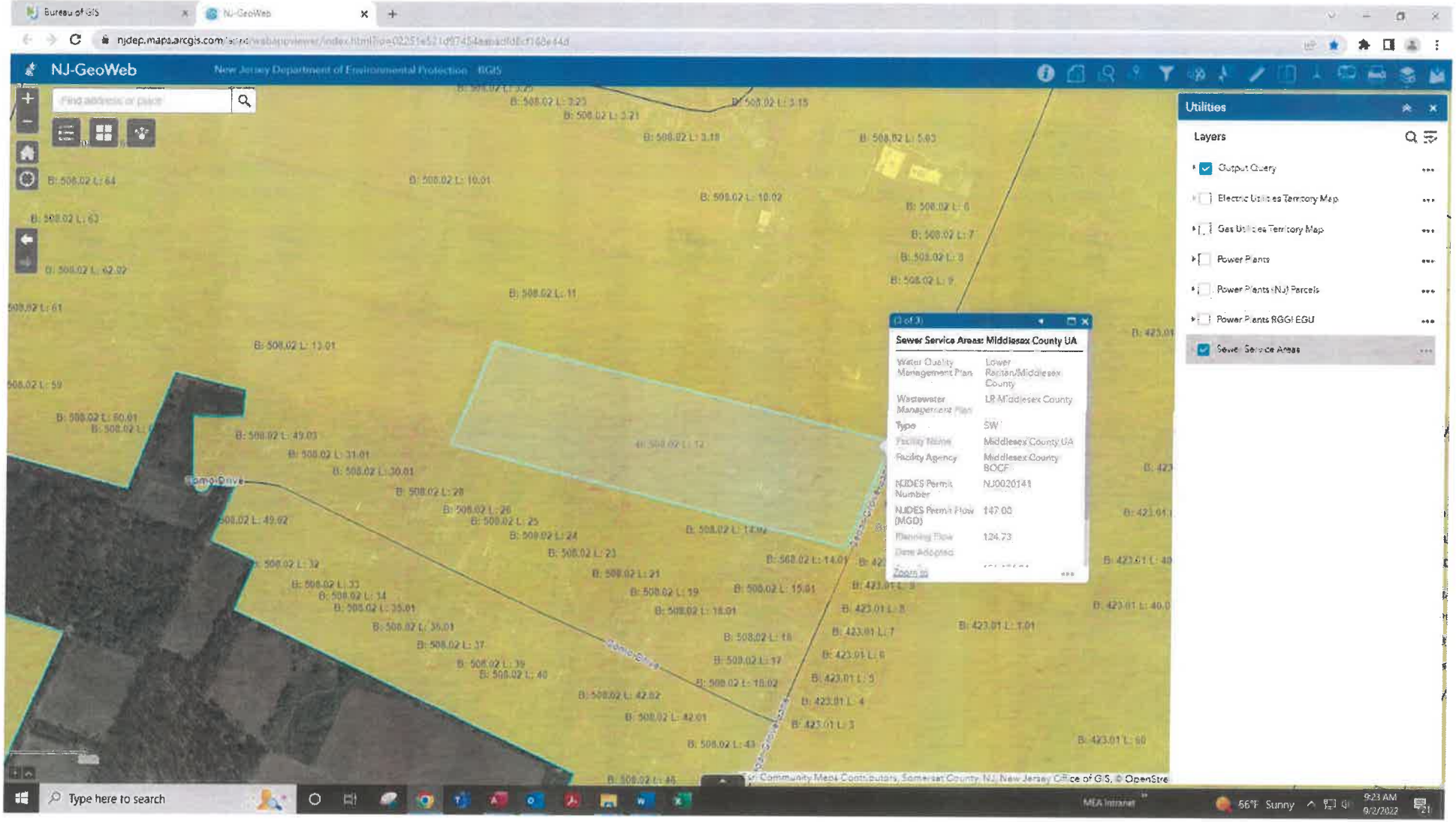
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

SEWER SERVICE AREAS



WATER PURVEYORS