

Exhibit:  
A-14

**ENVIRONMENTAL IMPACT STATEMENT**  
**FOR**  
**CAMELOT II AT SAYREVILLE**  
**BLOCK 366.01, LOT 1 AND BLOCK 347.01, LOT 3.01**

Borough of Sayreville

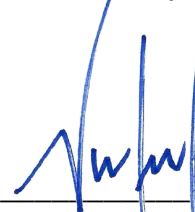
New Jersey

Middlesex County

Prepared by:

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Date: July 1, 2019



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## **SITE DESCRIPTION**

### **Existing conditions**

The Camelot at Main Street is located on Lot 1 in Block 366.01 and Lot 3.01 in Block 347.01, on Sheets 100 & 101 in the Sayreville Tax Map Book (See Figure 1). The total tract area is approximately 20.799 acres. Of this area, approximately 19.28 acres are moderately wooded.

The project will consist of 142 apartment units. Eight buildings are proposed, six residential buildings, one maintenance building, one clubhouse with swimming pool, paved parking areas, internal driveway circulation, stormwater convenience structures and detention basins (2) will be constructed on site. Open space will be provided by around the detention basins (2) areas and the adjacent unimproved portions of the property.

The site is situated in the AH-2 (Affordable Housing 2 Zone) zone. The Camelot at Main Street is located in an area which 93% wooded. Currently the site is vegetated with forested growth. The site slopes generally from east to west.

As the proposed use is for an apartment complex, there will be a slight change to the population in the area. However, the use and increase in population is consistent with the growth patterns created by the zone. A review of the Master Plan Sayreville Borough Plan and Master Plan Reexamination, Middlesex County Planning Documents, New Jersey State Development and Redevelopment Plan, and the Borough zoning ordinance indicates that this use is compatible with the master plan and consistent with the existing or proposed uses surrounding the site.

Surrounding Land use is as follows:

- North- Residential Development and Vacant Land
- East- Residential Development
- South- Conrail Raritan River Railroad and Residential Development
- West- Industrial and Vacant Land

Wetlands on-site are located in the western southwestern portions of the property, where the majority of runoff from the site drains.

The applicant, K-Land No. 70, LLC proposes to develop the site as a residential development.

This development will consist of 142 apartment units (6 buildings), pool area, maintenance building, paved parking areas and internal roadways.

CAMELOT AT SAYREVILLE

	<u># UNITS</u>	<u>ACRES</u>
Residential Apartments	142	20.799

The project will consist of 142 apartment units. Based on US Census Bureau data, it was estimated that there will be approximately 398 persons will reside in this community. According to the US Department of Labor approximately 36% of the population age 55 and older is in the labor force. This translates into 128 additional persons in the workforce. Based on the nature of the proposed development it is estimated that a maximum of 73 visitors per day at the proposed site.

The development's sanitary sewer, stormwater sewer system and water service lines will be designed in accordance with Borough Standards.

The stormwater management system has been designed to incorporate one water quality/detention basins (2) that will control runoff for the NJDEP storm water quality design storm, in which 1.25” rainfall over the duration of 2 hours, to provide water quality treatment prior to releasing runoff to the existing lake and freshwater wetlands. Prolonged detention will allow sediments and contaminants such as oil, gas, tire residue and lawn fertilizers to settle out of stormwater prior to release to the wetlands (see Stormwater Runoff).

## **GEOLOGIC CHARACTERISTICS**

Middlesex County is situated in the Atlantic Coastal Plain Physiographic Province, which is divided into the Inner and Outer Coastal Plain regions (Figure 2). The site of development is located in the Inner Coastal Plain. The entire Coastal Plain was created by the deposition of sediments consisting of a wide variety of continental, transitional and marine environments.

A major trough, or small basin, is centered in the vicinity of Raritan Bay. The site of development is located in this Raritan embayment area. The Inner Lowland of the Coastal Plain was formed by a great river which once flowed parallel to the inner edge of the Coastal Plain. The deep entrenchment of this river exposed the formations which reached the inner edge of the Coastal Plain. Sixteen (16) lithostratigraphic units have been mapped in the New Jersey Coastal Plain. The NJDEP GeoWeb indicates that the surficial geology is made up of the Lower Colluvium and Weathered Coastal Plain Formations, chiefly formed during the Pleistocene age. The Raritan and Magothy Formations are the underlying bedrock geologic formations on the site. They were formed during the Late Cretaceous Age. It consists of intercalated dark carbonaceous-rich silty clays or clayey silts and light colored sands. It can be traced from Cliffwood Beach on Raritan Bay to the western shore of the Chesapeake Bay in Maryland.

Additionally, USGS GIS maps indicate one (1) map unit present on the site, Weathered Carbonate Rock (Qwcb) (Pleistocene) which is silty clay with quartz, chert, and carbonate-rock fragments. As much as 100 feet thick.

The Magothy consists of three units: 1) The Amboy stoneware clay, a dark micaceous silt in which plant impressions are common; 2) The Morgan beds, dark clays and silts and light colored sands containing lenses of coarse carbonaceous matter; and 3) the Cliffwood beds, light-gray clayey silt to very fine grained sand with large concentrations of small siderite concretions containing open marine fossils. Interstratified with the sand are blocks of sandstone containing abundant marine fauna.

The ample amount of these sands, silts and clays provided extensive mining opportunities on this particular site and many other areas in Sayreville in the past.

According to the Groundwater Recharge Management Handbook for Middlesex County, the Old Bridge Sand aquifer presently serves the Sayreville Borough public water supply.

Development of the parcel will necessarily result in the introduction of impervious surfaces, in the form of rooftops and pavement surfaces. These reduce infiltration and increase stormwater runoff flow. Introduced impervious surfaces in the development area will decrease aquifer recharge potential in the developed portion of the site. Because of the recharge potential of the wetlands and the infiltration in the proposed water quality detention basins (2), it is our opinion that there will be no significant loss of aquifer replenishment potential. The project was designed in accordance with the NJDEP Stormwater Regulations to provide both water quality and recharge

## SOILS

The U.S.D.A. Soil Conservation Service Middlesex County Soil Survey, describes two (2) map units located on the subject property (Figure 4). These map units are:

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AtsA	Atsion sand, 0 to 2 percent slopes, Northern Coastal Plain	9.5	43.2%
EveB	Evesboro sand, 0 to 5 percent slopes	1.9	8.8%
EveC	Evesboro sand, 5 to 10 percent slopes	3.2	14.5%
GamB	Galloway loamy sand, 0 to 5 percent slopes	6.4	28.9%
GaokB	Galloway, clayey substratum-Urban land complex, 0 to 5 percent slopes	0.5	2.3%
LakB	Lakehurst sand, 0 to 5 percent slopes	0.5	2.2%
UR	Urban land	0.0	0.0%
<b>Totals for Area of Interest</b>		<b>22.0</b>	<b>100.0%</b>

AtsA- Atsion sand- Atsion sand, 0-2%, slopes, is a poorly drained soil in depressional areas. The surface layer contains a 2-inch organic mat over sandy soils to a depth of 80 inches. Seasonal high water is from surface to 12 inches.

EveB & EveC- Evesboro sand, 0-5% & 5-10% slopes, are upland soils on-site. Evesboro soils are excessively drained soils. The surface layer contains sandy topsoil over sandy soils and stratified layers of sand to loamy sand to a depth of 80 inches. Seasonal high water table is found at a depth of more than 80 inches.

GamB- Galloway loamy sand, 0-5% slopes, are upland soils on-site. Galloway soils are somewhat poorly drained soils. The surface layer contains sandy topsoil over loamy sand to a depth of 36 inches and sand to a depth of 80 inches. Seasonal high-water table is found at a depth of 12-18 inches.

GaokB- Galloway clayey substratum-Urban land complex, 0-5% slopes, are upland soils on-site. Galloway soils are somewhat poorly drained soils. The surface layer contains sandy topsoil over loamy sand to a depth of 40 inches and sand to a depth of 48 inches. Seasonal high-water table is found at a depth of 18-24 inches.



LakB- Lakehurst sand, 0-5% slopes, are upland soils on-site. Lakehurst soils are somewhat poorly drained soils. The surface layer contains loamy topsoil over sandy soils to a depth of 80 inches. Seasonal high water table is found at a depth of 18-42 inches.

Site development for Camelot at Main Street will take place in areas of Atsion, Evesboro and Galloway soils. All areas which are currently forested growth which will be regraded and stabilized with landscaping, topsoil and seeding. This will provide additional protection against erosion.

Since the project design calls for regrading of Atsion, Evesboro and Galloway soils on the Camelot at Main Street site, and because of the existing topography, from existing topography and the higher water tables expected, fill will be required to provide a suitable layout while minimizing the creation of any areas of steep slopes. No severe impacts are anticipated due to erosion or sedimentation. The project design includes adherence to an approved Soil Erosion and Sediment Control Plan which will include the use of silt fences, hay bales for inlet protection, rip-rap aprons for outfalls, temporary and final vegetative plantings.

On-site soils and their characteristics are presented in Table 1 to best represent the true erosion potential, drainage classification, depth to bedrock, runoff potential and expected sand content.

**TABLE 1  
CHARACTERISTICS OF THE SOILS ON PROJECT SITE**

Conservation Planning—Middlesex County, New Jersey																	
Map symbol and soil name	Pct. of map unit	Slope RV	USLE Slope Length ft.	Runoff	T Factor	WEI	WEG	Erosion	Drainage	NIRR LCC	Hydro logic Group	Surface					
												Depths in.	Kf Factor	Frag-ments RV	Sand RV	Silt RV	Clay RV
AtsA—Atsion sand, 0 to 2 percent slopes, Northern Coastal Plain																	
Atsion	90	1.0	656	—	5	220	1	Class 1	Poorly drained	5w	A/D	1 - 3	.02	3	93	5	1
EveB—Evesboro sand, 0 to 5 percent slopes																	
Evesboro	80	3.0	328	Very low	5	220	1	Class 1	Excessively drained	7s	A	0 - 3	.02	3	91	5	3
EveC—Evesboro sand, 5 to 10 percent slopes																	
Evesboro	95	7.0	246	Low	5	220	1	Class 1	Excessively drained	7s	A	0 - 3	.02	3	91	5	3
GamB—Galloway loamy sand, 0 to 5 percent slopes																	
Galloway	85	2.0	328	Very low	5	134	2	Class 1	Somewhat poorly drained	3w	A/D	0 - 1	.05	2	83	9	7
GaokB—Galloway, clayey substratum-Urban land complex, 0 to 5 percent slopes																	
Galloway, clayey substratum	45	2.0	328	Very low	5	134	2	—	Somewhat poorly drained	3w	A/D	0 - 5	.17	2	81	16	2
Urban land	40	1.0	656	Very high	—	—	—	—	—	8s	—	0 - 59	—	—	—	—	—
LakB—Lakehurst sand, 0 to 5 percent slopes																	
Lakehurst	85	3.0	328	Very high	5	220	1	Class 1	Moderately well drained	4w	A	1 - 3	.02	3	91	5	3

**SOURCE: MIDDLESEX COUNTY SOIL SURVEY  
SOIL CONSERVATION SERVICE, USDA, WEB SOIL SURVEY**

## **TOPOGRAPHY**

Topography on the entire project site slopes from the east to west. The site has no other topographic features. The upland portion of the tract contains the highest elevation of 55 (NAV88) at the far east end of the site. The site slopes westerly to the lower wetlands portion of the site, where it drops to an elevation of 27 (NAV88).

## VEGETATION

The site contains areas of varying soil moisture due to differences in elevation and slope, and wetland areas onsite. Vegetation ranges from upland species to hydrophytes (wetlands vegetation).

### UPLAND FOREST VEGETATION

<u>Common Name</u>	<u>Scientific Name</u>
Black Gum	<i>Nyssa sylvatica</i>
Smooth Sumac	<i>Rhus glabra</i>
Yellow Birch	<i>Betula allengheniensis</i>
Sassafras	<i>Sassafras albidum</i>
Red Maple	<i>Acer rubrum</i>
Pin Oak	<i>Quercus palustris</i>
Northern Red Oak	<i>Quercus rubra</i>
White Oak	<i>Quercus alba</i>
Pitch Pine	<i>Pinus rigida</i>
Black Locust	<i>Robina pseudo-acacia</i>
Sweet Gum	<i>Liquidamber styraciflua</i>
Black Cherry	<i>Prunus serotina</i>

Freshwater wetlands are found in the lower elevations to the southerly portions of the site. The following vegetation can be found in these areas:

FRESHWATER WETLANDS

<u>Common Name</u>	<u>Scientific Name</u>
Red Maple	<i>Acer rubrum</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Arrowwood	<i>Viburnum dentatum</i>
Highbush Blueberry	<i>Vaccinium corymbosum</i>
Sweetgale	<i>Myrica gale</i>
Sweetfern	<i>Comptonia peregrina</i>
Rushes	<i>Juncus</i> spp.
Yellow birch	<i>Betula allengheniensis</i>
Cattail	<i>Typha</i> spp.
Sedges	<i>Cyperaceae</i> spp.

Minimal impact is anticipated to the above-listed species due to the fact that no significant disturbance of the freshwater wetlands, on-site will take place. The only proposed disturbance to wetlands will be for a Freshwater Wetlands General Permit No. 10 for a Minor Road Crossing. The disturbance of the freshwater wetlands buffers on site will be compensated for with the approval of the NJDEP through freshwater wetland's buffer averaging plan.

## **HYDROLOGY**

Surface and subsurface drainage from the property presently drains in a westerly direction. The subdivision as proposed will continue to drain, westerly, to two (2) proposed detention/water quality basins located in the westerly portion of the site.

The National Flood Insurance Program Floodway map #34023C0152F, Panel 152 of 286, dated July 6, 2010 was reviewed, and indicated that no portions of the overall site fall within the 500 and 100-year flood boundaries.

Camelot at Main Street will contain impervious surfaces such as rooftops and pavements, which will increase stormwater runoff. Stormwater management includes the use of two (2) detention/water quality/sediment basins designed to meet State Water Quality and Recharge Standards (see Stormwater Management.). Prolonged detention will lessen the impact of excess runoff. These facilities will allow settling out of contaminants such as oil, gas and lawn fertilizers, before runoff is released overland and ultimately to the wetlands and surface waters. Outlet protection will include stone rip-rap aprons.

Existing slopes have some erosion problems. Development of the site will correct these problems through the design of the grading plan, as well as the use of temporary and permanent vegetation. In this sense, it can be said that development, as opposed to the absence of development, would enhance the water quality of the site. Erosion, downstream siltation and possible exposure of acid soils will be significantly reduced as a result of the proposed improvements.

## **WETLANDS**

Freshwater wetlands are found in the lower elevations to the southerly portions of the site. These wetlands are categorized by NJDEP as Deciduous Forested Wetland. Vegetation typically found in these areas includes highbush blueberry, bayberry, yellow birch, red maple, rushes and sedges.

## **HISTORICAL AND ARCHITECTURAL FEATURES**

Examination of the site by the Abbington Engineering Environmental staff indicates that no observable historical resources or architectural features exist on the development site. After walking the site and reviewing New Jersey and Natural Registers of Historic Places, it is our opinion that no such resources exist on-site. Our opinion and conclusion regarding this matter are based on the following facts:

- A. Our visual observation of the area in question found no observable signs of previous structures which would lead us to believe that no such features existed in the first place.
  
- B. This site is not listed in the New Jersey and Natural Registers of Historic Places.

## **STORMWATER MANAGEMENT**

The proposed development drainage system will be designed per Borough design standards, NJDEP standards and the New Jersey Residential Site Improvement Standards which require catch basins located at most street intersections and areas where proposed flow could be concentrated, at intervals of not more than 400 feet in order to prevent the runoff flow from exceeding 6.0 c.f.s. at the catch basin inlets. The Site will be graded to direct runoff away from all buildings and to prevent pooling of stormwater in pavement areas, and to avoid concentration of runoff to adjacent lots.

Stormwater runoff will be directed by means of the inlet and pipe system, as well as sheet flow, to the proposed water quality detention basins (2), designed for prolonged retention of a small design storm and evacuation of 90 percent of basin volumes in less than 72 hours. The hydrologic reports prepared by demonstrate that water elevation for the basins is consistent with State Water Quality requirements. The basins will utilize a 2.5" orifice, in order to achieve maximum possible detention time.

This evacuation rate will allow sediments and contaminants such as lawn fertilizers, vehicle tire wear and oil and gas residue from pavements to be filtered out prior to excess runoff being discharged ultimately to the on-site and adjacent wetlands. The basin areas, is designed in accordance with New Jersey Soil Erosion and Sediment Control requirements, with specific regard to slopes and velocity.



## **WILDLIFE HABITAT**

Habitat for wildlife exists in the wooded and wetland areas with the availability of nuts, berries, blossoms and vegetation in season. These areas support wildlife. Waterfowl, herpitiles and mammals can be found in and around these areas. They include, but are not limited to the following: gray squirrels, woodchuck, meadow vole, mice, chipmunks, striped skunk and raccoon. Tracks from raccoon along with the tracks of white tailed deer were observed on site. Typical wildlife found in the wetland areas are Canvasback Duck, Bufflehead Duck, Mute Swan, Canada Goose, Mallard, Black Duck, Common Egret, Sandpipers, Gulls, Common Snapping Turtle, Eastern Box Turtle, Eastern Garter Snake, Northern Black Racer, Northern Spring Peeper, Bullfrog and Northern Red Salamander.

We have sent a request for data to the NJDEP Natural Heritage Program regarding the presence or absence of threatened or endangered plants or animals are known to exist on or near the site has been sent and the results will provided in an update to the Township upon receipt of same. It is not anticipated that any threatened or endangered plants or animals or habitat exist on the site, based on several field visits by our environmental staff.

## **IMPACT ON HABITAT**

Construction of the project will require most the wooded areas on site be cleared. Of the existing 19.28+/- acres of wooded area located on the site, a total of 9.02+/- acres will be cleared. Woodlands will be preserved on approximately 10.26 acres which will remain untouched. However, this loss of wooded area will be offset by the planting of new trees as required by the municipal tree save ordinance.

Project development requires grading to relieve steep slopes in the areas of upland vegetation and to achieve the project design. These areas comprise a portion of the natural vegetation at the site, which will be more offset by the proposed landscaping & stabilization of the site.

The major source of habitat is in the freshwater wetlands. The wetlands on site contain the most dense vegetation on the property. This area will not be disturbed for the by the proposed improvements. Those species not able to adapt to the proximity of human activity will migrate, finding abundant sanctuary in on and off-site wetlands and wooded areas.

### **AVAILABILITY OF UTILITIES**

1. Public sewer shall be provided by 8" PVC pipes located along the proposed internal roadways. The sewer flow from the entire site shall be collected by gravity lines and connect to the existing 10" DIP sanitary line located in Main Street. The connection will be made via a proposed doghouse manhole. Estimated flow volume for the 142 units in Camelot at Main Street will be 28,050 gallons per day average flow based upon the NJDEP accepted guidelines for estimating wastewater flow. Sewer lines will be owned by the Borough of Sayreville.

The sanitary sewer flow is calculated as follows:

TABLE 2

	<u>UNITS</u>		<u>FLOW/UNIT</u>		<u>TOTAL</u>
CAMELOT AT MAIN STREET					
1 Bedroom Apartments	54	x	150	=	8,100 gpd
2 Bedroom Apartments	86	x	225	=	19,350 gpd
3 Bedroom Apartments	2	x	300	=	600 gpd
TOTAL FLOW					28,050 gpd

2. Water-- Public water shall be provided to service the proposed development. Presently, there is an existing 12" water main located on Main Street. The Camelot at Main Street development proposes to connect to the existing 12" water main in Main Street and to construct a proposed 8" water main to be looped through the project back to the existing 12" water main located on Main Street. Estimated average daily water demand (Residential Site Improvement for the site is 22,070 gallons per day.

The potable water volume is calculated as follows:

TABLE 3

	<u>UNITS</u>		<u>FLOW/UNIT</u>		<u>TOTAL</u>
1 Bedroom Apartments	54		120	=	6,480 gpd
2 Bedroom Apartments	86		175	=	15,050 gpd
3 Bedroom Apartments	2		270	=	540 gpd
TOTAL FLOW				=	22,070 gpd

3. Electrical Service--Electrical service can be supplied by Jersey Central Power and Light Company. To obtain the necessary connection approvals, the power company will require submission of the proposed site layout along with project load requirements.

4. Natural Gas--natural gas service is available through PSE& G Co.
  
5. Telephone--Telephone service is available through Verizon Company. Service lines are available from North Ernston Road.
  
6. Stormwater Facilities--See section on Stormwater Management.

## AIR QUALITY

Air pollution can damage vegetation, corrode buildings and bridges, soil clothes and create health hazards to humans and animals. Air pollution is caused by industrial emissions, car and truck traffic and heating equipment. Middlesex County as a whole and the Borough of Sayreville area in particular, meets State and Federal primary and secondary ambient air quality standards, with the exception of ozone. Lead has become less of a problem through decreased use of leaded gasoline.

The nearest State air quality monitoring stations to the site are located in Bayonne, Chester, Columbia, Elizabeth, Elizabeth Lab, and Jersey City (2014 Air Quality Report is the most recent report released by NJDEP). Data gathered at these stations indicates that existing regional area air quality generally falls within acceptable limits set by the Department of Environmental Protection and Energy. The factor having the greatest influence on ambient air quality is vehicular emissions from prevailing traffic on area roadways. We do not anticipate that the additional traffic created by the Camelot at Main Street development will be significant enough to detrimentally affect area ambient air quality.

The effects of sulfur dioxide for the overall surrounding areas are measured in Perth Amboy. The effects of sulfur dioxide pollution can contribute to increased incidence of respiratory problems, corrosion of metals and damage to vegetation. The State has established a 3 hour average, secondary standard of 0.5 ppm which cannot be exceeded more than once in any 12 month period. The 3 hour maximum recorded at the data collection location is .090 ppm and the 12 month average maximum is .001 ppm. The 24 hour average primary standard of 0.22 ppm has not been exceeded by the .018 ppm

recorded. Therefore, the standards have not been exceeded in the general data collection area of Camelot at Main Street.

In general, the environment contains a certain level of particulate matter, such as particulates in emissions resulting from construction activities. Particulates can aggravate respiratory illnesses, soil clothing and corrode structures. Inhalable particulates for the region are measured in Jersey City. The 12 month arithmetic maximum mean recorded at 17 micrograms per cubic meter has not exceeded the primary standard of 50 micrograms per cubic meter. The 24 hour average primary & secondary standard of 150 micrograms per cubic meter has been not exceeded by the 38 micrograms per cubic meter recorded. It should be noted that the monitoring location is in Jersey City, which is a more urban and area than that of the Borough of Sayreville.

Carbon monoxide (CO) is the most widely distributed and most commonly occurring air pollutant. The majority of atmospheric CO is produced by the incomplete combustion of carbonaceous materials used for vehicle fuel, heating and burning of refuse. Major adverse effects are those of health, occurring only through prolonged and continuous exposure. Plant material is not affected by carbon monoxide. Carbon monoxide for the region is measured in Elizabeth. The 1 hour average maximum of 2.8 ppm has not exceeded the primary standard of 35 ppm. The 8 hour average maximum of 2.0 ppm has not exceeded the 9 ppm primary standard.

Further, as carbon monoxide does not remain constant over the entire spatial extent in a given region and disperses rapidly over a short distance, the overall impact of emissions from normal traffic flow is slight and general air quality is not affected.

Nitrogen dioxide emitted by exhaust from high temperature combustion sources can affect vegetation causing acute injury to leaves, and can cause fading in synthetic fibers and yellowing of white clothes. The recorded data for the 1 hour average guideline of 0.083 ppm collected at Rutgers University or the 0.085 ppm collected in Elizabeth do not exceed the standard .25 ppm. The human threshold for sensing nitrogen oxide in the atmosphere is approximately .12 ppm.

Ozone is caused by various photochemical reactions of hydrocarbons with oxides of nitrogen on days with bright sunshine and warm temperatures. This limits the potential for pollution to late spring, summer and early fall months. At Rutgers University, the daily maximum 1 hour average of 0.115 ppm does not exceed the .12 ppm standard. Additionally at the Bayonne station, the daily maximum 1 hour average of .0.102 ppm does not exceed the .12 ppm standard.

During the project's construction stages, local air quality may be temporarily affected by emissions from construction equipment, automobiles used by workmen and delivery vehicles to the site. The effect will be minimal though as emissions will not be excessive and dispersion of carbon monoxide in the atmosphere is rapid.

Upon completion of the project, resulting emissions from on-site vehicular traffic will be the only potential air pollutant. The impact on air quality was analyzed using NJDEP published ambient air quality standards and data based on regional receptors.

## **NOISE**

There are no noticeable sources of noise within the tract borders at present. Sources of noise which could stem from residential development of the tract are associated with

traffic through the development. Development of this parcel will necessarily introduce noise sources in the form of construction activities and post-development activities normally associated with residential use.

During construction, noise levels will be controlled by two types of noise control legislation:

1. Product noise emission standards which place limits on the level of noise equipment may produce.
2. Construction site noise standards which establish maximum levels of sound permissible at the property boundaries.

The first of these is controlled by Federal legislation (Noise Control Act of 1972), and places limits on manufacturers of construction equipment for decibel levels that may be produced. The second level of control, on activities such as land clearing, excavation and landscaping, is regulated by municipal ordinance as to the hours of operation within which work can be performed.

After construction, sound sources will consist primarily of the vehicular traffic entering and exiting the development. These sound levels will be typical of residential projects and will not be of a magnitude as to be an annoyance to surrounding residential uses.

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After construction, sound sources will consist primarily of the vehicular traffic entering and exiting the development. These sound levels will be typical of residential projects and will not be of a magnitude as to be an annoyance to surrounding residential uses.

**ADVERSE IMPACTS AND STEPS TO MITIGATE SAME:**

1. Introduced impervious surfaces will increase stormwater runoff created by pavement and rooftop areas. This increase will be mitigated by the use of a

detention/water quality basins (2) designed for prolonged detention of basin volume. The detention of runoff will filter out sediments and contaminants associated with use of lawn fertilizers, vehicle tire wear and oil and gas residue from roadway pavement, as well as provide infiltration to maintain groundwater recharge from pre-construction conditions on the site, in keeping with NJDEP's Best Management Practices.

2. Increases in soil erosion during construction will be mitigated by adherence to an approved Soil Erosion and Sediment Control Plan. After construction, erosion on-site will be minimized due to grading, maintenance of buffered areas, final vegetative planting and landscaping.
3. There will be a loss of existing upland vegetation as a result of grading activities. No threatened or endangered species, or specimen trees exist within this area. A small area freshwater wetland will be disturbed, under a Fresh Water Wetlands General Permit No. 10 for a minor road crossing. This permit will be reviewed and approved by the NJDEP.
4. Limited wildlife may be driven off the site due to construction activities. Those species unable to adapt to the proximity of development will find ample similar habitat in other undeveloped areas of the site adjacent vacant lands to the north and south of the site.
5. Increases in sound levels during construction will be controlled by Federal and State regulations on equipment noise and by local ordinance on hours of operation for construction activities. After development, sound levels will generally be related to motor vehicle traffic and will not reach off-site

residential dwellings at unacceptable levels due to the presence of existing and introduced vegetation.

## **CONSTRUCTION PERMITS**

### Sayreville Borough:

Amended Preliminary Site Plan Approval

Final Site Plan Approval

Soil Conservation Certification – Submitted to Sayreville

Application to Sayreville Municipal Utilities Authority for Sewage

### Middlesex County:

Amended Preliminary Site Plan Approval

Final Site Plan Approval

Application to Middlesex County Utilities Authority for Sewer and Water

### New Jersey Department of Environmental Protection:

Sanitary Sewer Extension Permit

Water Extension Permit

Wetlands General Permit 10 (Road Crossing)

Wetlands Transition Area Averaging Plan

## **BIBLIOGRAPHY**

The preceding environmental analysis was prepared following a visit to the site by Vincent Creevy, P.L.S., Environmental Project Manager. The following reference materials and agencies were consulted in conjunction with the preparation of this document:

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U.S. Geological Survey Topographic Map for the South Amboy Quadrangle.

N.J.D.E.P.E. Freshwater Wetlands Map, South Amboy Quadrant.

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NJ State Museum, State Street, Trenton, NJ

Drainage and Detention basins (2) Calculations, prepared by Abbington Engineering, Inc.

2001 Air Quality Report--NJ Department of Environmental Protection and Energy, Division of Environmental Quality, October 1998.

U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Middlesex County, New Jersey.

Peterson, R.T., and M. McKenney, 1968, A Field Guide to Wildflowers.

Petrides, G.A., 1972, A Field Guide to Trees and Shrubs.

New Jersey Department of Environmental Protection and Energy, Division of Water Resources, May 1985, Surface Water Quality Standards, N.J.A.C. 7:9-4.1 et seq.

New Jersey Administrative Code, Title 5, Chapter 21, January 1997, Residential Site Improvement Standards.

Middlesex County 208 Water Quality Management Plan, NJDEPE.

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**APPENDIX A**

**FIGURES 1-5**

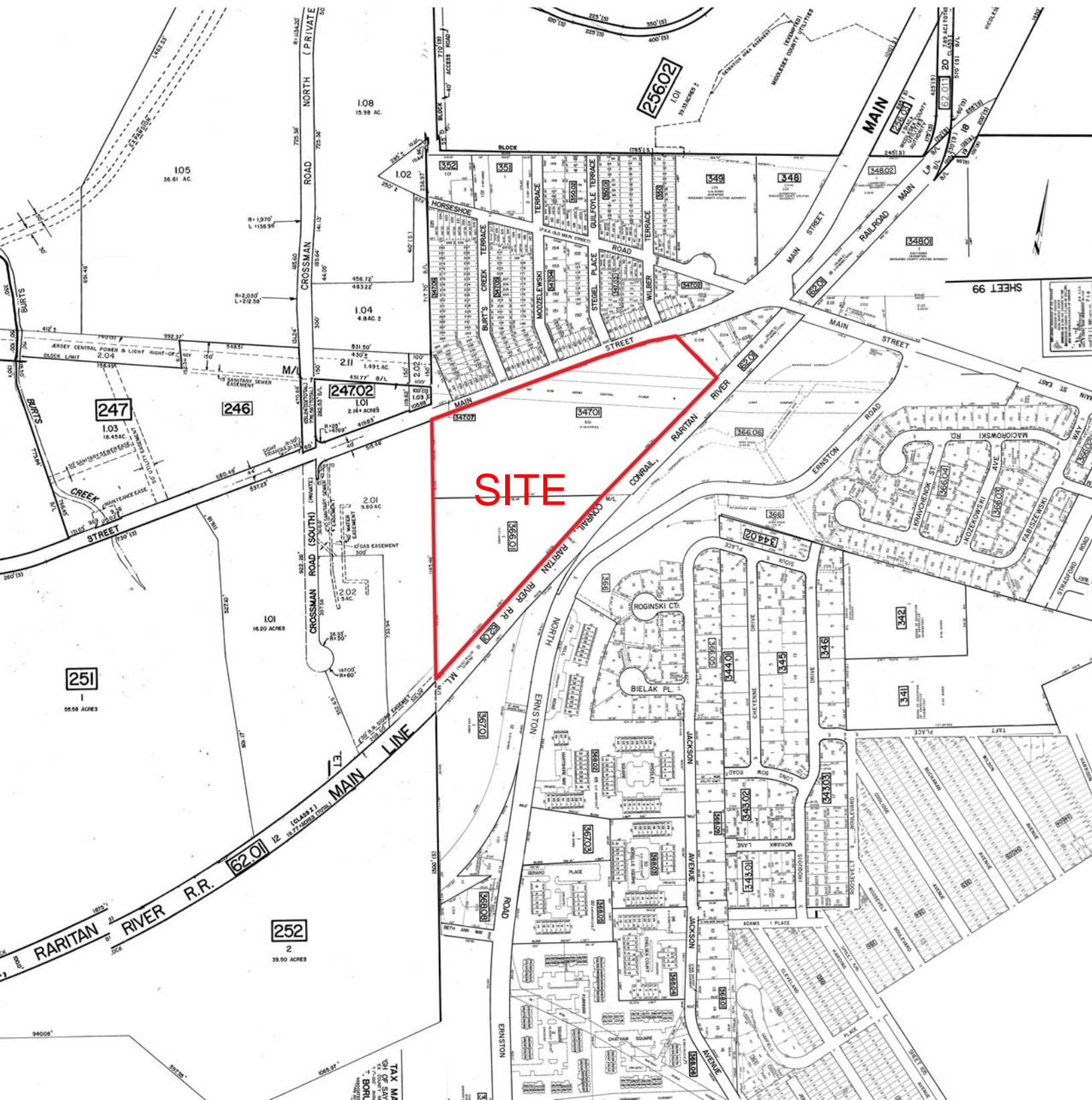
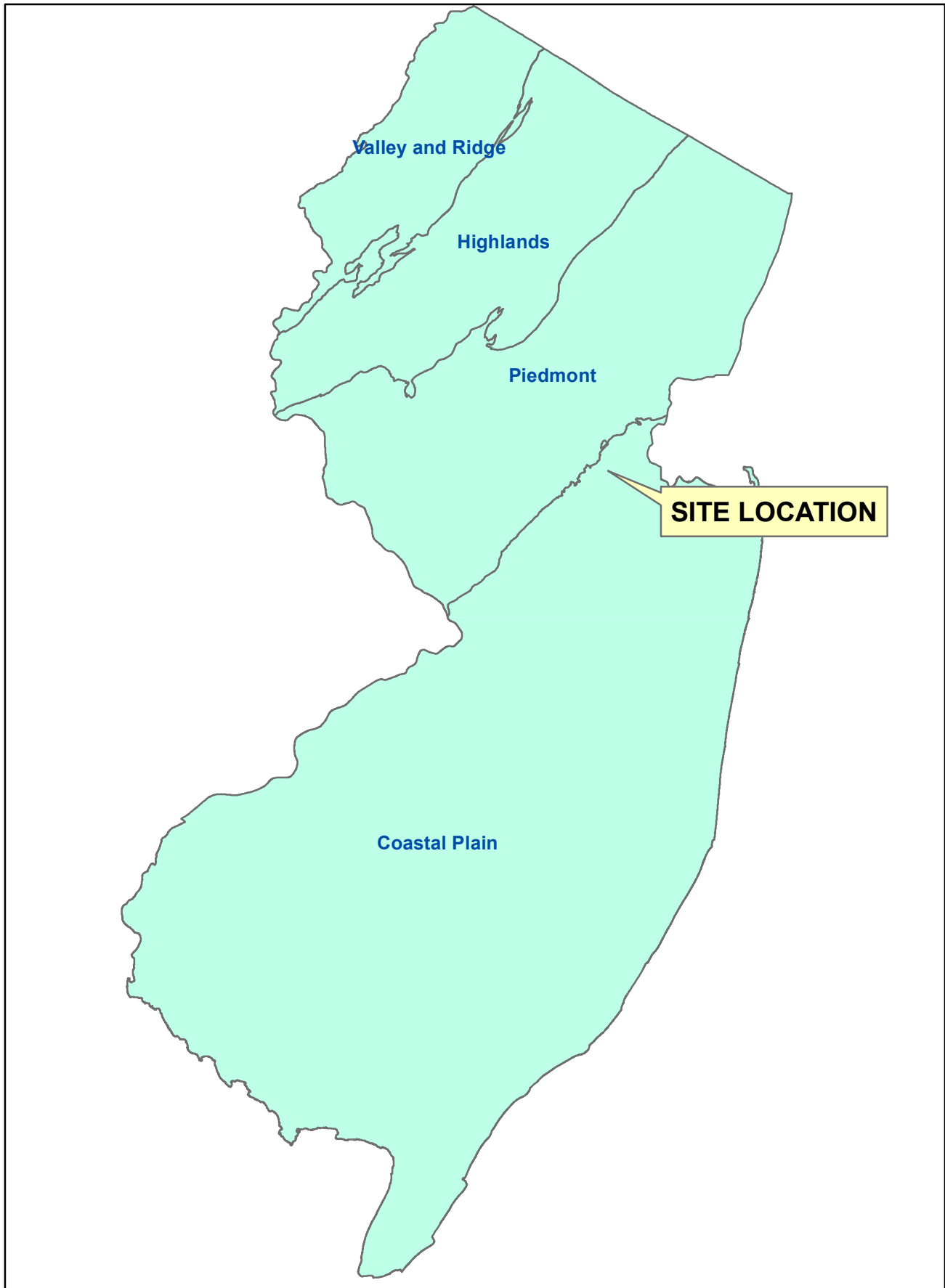


FIGURE - 1

Figure- 2 Physiographic Provinces of NJ

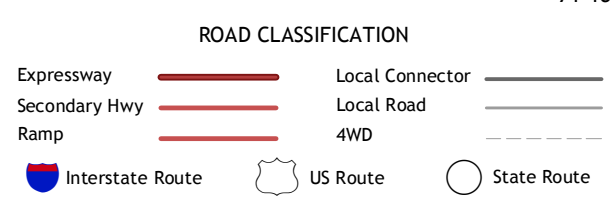
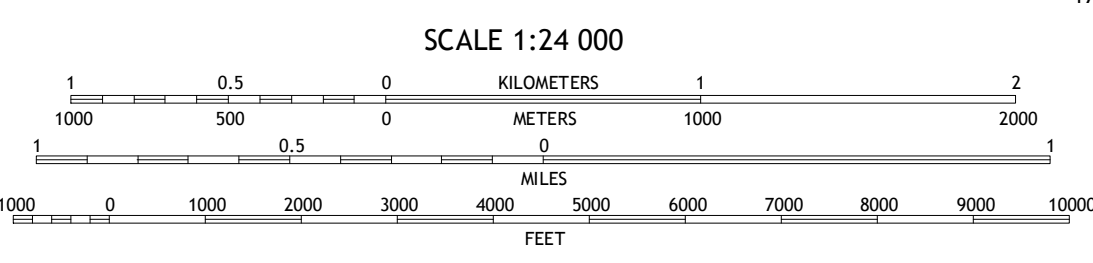
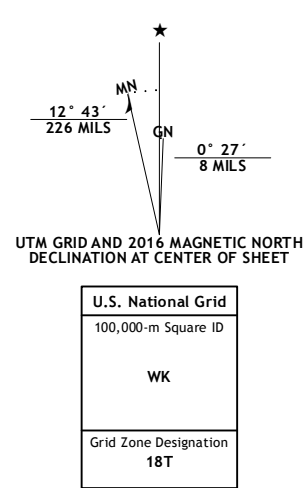




Produced by the United States Geological Survey  
North American Datum of 1983 (NAD83)  
World Geodetic System of 1984 (WGS84) Projection and  
1 000-meter grid: Universal Transverse Mercator, Zone 18T  
10 000-foot ticks: New Jersey Coordinate System of 1983, New  
York Coordinate System of 1983 (long island zone)

This map is not a legal document. Boundaries may be  
generalized for this map scale. Private lands within government  
reservations may not be shown. Obtain permission before  
entering private lands.

Imagery.....N.A.I.P., November 2015  
Roads.....U.S. Census Bureau, 2015 - 2016  
Names.....GNIS, 2016  
Hydrography.....National Hydrography Dataset, 2015  
Contours.....National Elevation Dataset, 2013  
Boundaries.....Multiple sources; see metadata file 1972 - 2016  
Wetlands.....FWS National Wetlands Inventory 1977 - 2014



1	2	3
4	5	6
7	8	9

ADJACENT QUADRANGLES

1 Plainfield  
2 Perth Amboy  
3 Arthur Kill  
4 New Brunswick  
5 Keyport  
6 Jamesburg  
7 Freehold  
8 Marlboro

**SOUTH AMBOY, NJ-NY**  
2016



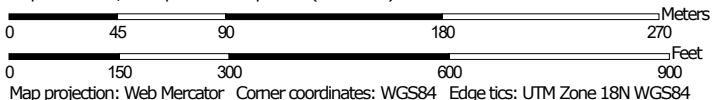
**FIGURE-3**



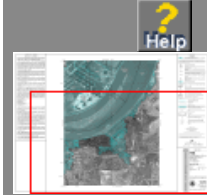
# Custom Soil Resource Report Soil Map



Map Scale: 1:3,140 if printed on A portrait (8.5" x 11") sheet.



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



enced to the North American Vertical Datum  
st be compared to structure and ground  
vertical datum. For information regarding  
eodetic Vertical Datum of 1929 and the  
1988, visit the National Geodetic Survey  
or contact the National Geodetic Survey at

en, and/or location information for bench  
contact the Information Services Branch  
(301) 713-3242, or visit its website at

FIRM was provided in digital format by the  
nation Technology. This information was  
ced at a scale of 1:2400 with a 1-foot pixel  
#2002.

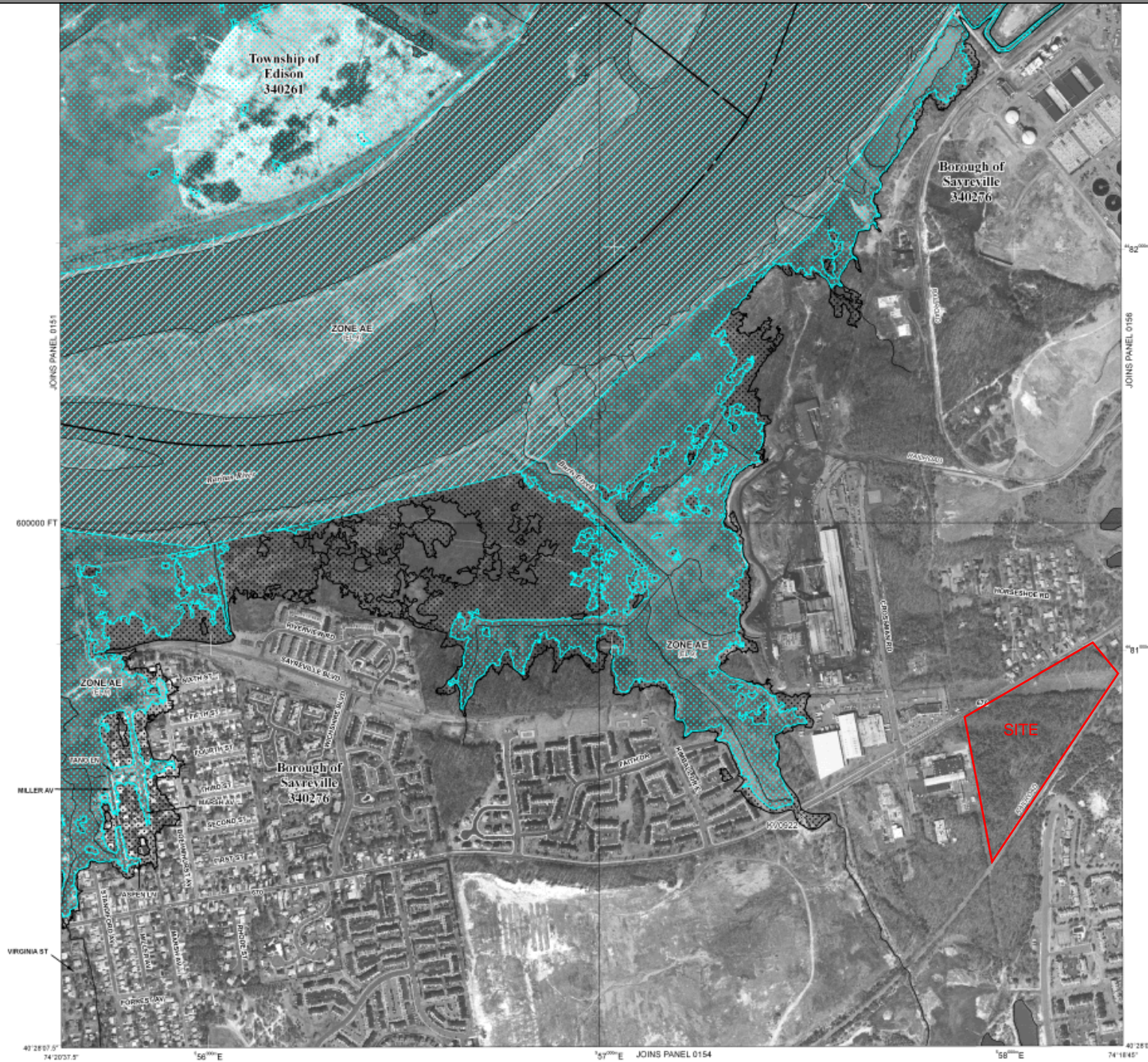
ration, this map reflects more detailed and  
ations and floodplain delineations than  
for this jurisdiction. As a result, the Flood  
s the Flood Insurance Study Report (which  
may reflect stream channel distances that  
Also, the road to floodplain relationships for  
is shown on previous maps.

are based on the best data available at the  
due to annexations or de-annexations may  
shed, map users should contact appropriate  
porate limit locations.

ed Map Index for an overview map of the  
eels, community map repository addresses,  
ntaining National Flood Insurance Program  
as a listing of the panels on which each

nter at 1-800-338-9616 for information on  
his FIRM. Available products may include  
rge, a Flood Insurance Study report, and/or  
A Map Service Center may also be reached  
ite at <http://mssc.fema.gov>.

p or questions concerning the National Flood  
call 1-877-FEMA MAP (1-877-336-2627) or  
fema.gov.



**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
- Zone X 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.
- 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

○ Cross section line  
○ Transsect line

87°07'45", 32°22'30"  
76°N  
600000 FT  
5000-foot grid values; New Jersey State Plane coordinate system (NAD 83), 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**  
July 6, 2010

**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 0152F**

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**MIDDLESEX COUNTY,**  
**NEW JERSEY**  
**(ALL JURISDICTIONS)**

**PANEL 152 OF 286**  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

**COMMUNITY**

COMMUNITY	NUMBER	PANEL	SUFFIX
EDISON TOWNSHIP OF	340201	0152	F
SAYREVILLE BOROUGH OF	340276	0152	F
WOODBRIDGE TOWNSHIP OF	340311	0152	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER**  
**34023C0152F**

**EFFECTIVE DATE**  
**JULY 6, 2010**

Federal Emergency Management Agency

Figure-5