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Rahway River Corridor Study

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Environmental Commission

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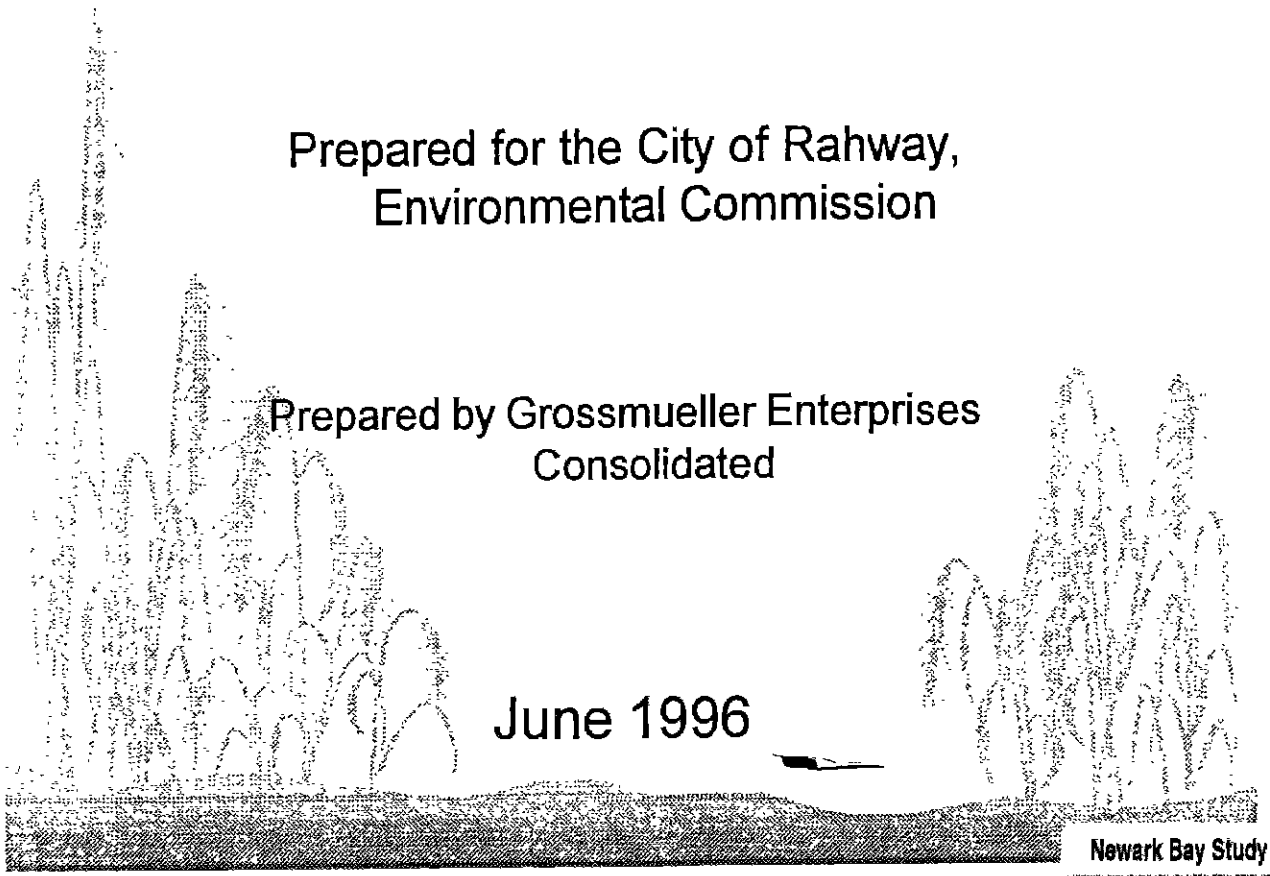
Consolidated



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Newark Bay Study Area
NBSA-00109

Rahway River Corridor Study
City of Rahway
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1.0 Introduction

1.1 Objective

This document has been prepared to fulfill a grant (NJDEP Project No. 94057) received by the City of Rahway Environmental Commission from the New Jersey Department of Environmental Protection (NJDEP), Office of Environmental Services (OES). The objective of this project was to inventory the significant natural features of the river corridor and develop a strategy for enhancing the river corridor.

The Union County corridor of the Rahway River was surveyed and its ecological integrity assessed as per the direction of the City of Rahway. The ecological integrity of the surveyed area is determined by the following: animal species, vegetative species, habitat type, and land use. The land use of the area has an impact on the type of habitat that is available to the local wildlife. The type of habitat present determines the animal and plant species in the area.

Previous studies surveyed the land use of the area (Rosa Associates, 1981). The update to this report identified only five recreational facilities or sites: County Park, East Hazlewood Park, Rahway Yacht Club, Rahway City Dock, and Hart Street Park. This study stressed the need of additional quality recreational sites for the area, since those needs were not being met. The limited access to the Rahway River in most portions of the study area was identified, and improvements suggested (Rosa Associates, 1984).

The urban nature of the study area limits it's ability to meet the recreational needs of its local community. The shallow nature of this stretch of the Rahway River and its associated tributaries prevents the use of these water bodies for boating activities. There are, however, areas along this corridor that, if improved, can improve this area for the City of Rahway. This report serves to map the ecological integrity of the study area and provide solutions for improvement.

1.2 Report Contents

The contents of this report are presented in the following fashion. Chapter 2 describe2s the environmental settings of the Rahway River and the NJDEP Surface Water Classifications for different reaches of the river. Chapter 3 separates the river into 4 reaches, and describes the origin of each. Chapter 4 describes each of the reaches, divided up by block. Chapter 5 describes the different habitat types found throughout the community and describes the different aquatic resources and recreational uses. The final chapter includes recommendations for erosion control and possible recreational enhancement projects that can improve the educational value of the river resources.

The section titled tables lists the different species of plants (Table 1), amphibians (Table 2), reptiles (Table 3), birds (Table 4), mammals (Table 5) and a summary table of vegetative communities and land use (Table 6). Land use and habitat maps are included in the section titled maps.

2.0 Environmental Setting

2.1 Physiographic Land Regions of New Jersey

The composition of vegetative communities is closely linked to geological processes such as mountain building, erosion and glaciation. As a framework for explaining this geologic history and the associated vegetative communities , it is necessary to delineate the state into five very different physiographic regions, which are known as:

Ridge and Valley section
Highlands section
Piedmont section
Inner Coastal Plain section
Outer Coastal Plain section

The vegetative communities associated with each of these physiographic regions is different and distinctive. The City of Rahway falls within the Piedmont section.

2.1.1 Piedmont Physiographic Section

The Piedmont section (or Triassic lowlands) occurs to the south of the Highlands. This physiographic formation extends almost 1,000 miles from the Hudson River, southward through New Jersey and Pennsylvania. At this point it separates to form a similar formation that extends into Virginia. In New Jersey the Piedmont occupies approximately 1,500 square miles and is composed primarily of shale, sandstone and argillite formations. These formations are less resistant to erosion than the Highland gneissic rock formations. Consequently, in comparison to the Highlands, the Piedmont is a lowland area.

Though there are some areas of the Piedmont that are relatively flat, the typical Piedmont contour is slightly rolling terrain with gentle slopes. Where rivers have cut through the Piedmont. steep sided valleys occur.

Differences in the rock formations that make up the Piedmont and because glacial deposits of varying age cover only part of the Piedmont formation, there is great variety of soil types within the region. These variations appear to be less important to the vegetation then do the differences in the drainage of the soil water. In areas that are well drained, upland vegetation occurs. However, in low lying areas where the soil is poorly drained and anaerobic soil conditions occur, specialized aquatic and semi aquatic plants are found. These areas are called wetlands.

2.2 Ecological Succession

Changes in the vegetative composition and community structure over time is called ecological succession. When this succession proceeds from a state in which another community is present it is termed secondary succession. Secondary succession is most common commonly observed on abandoned agricultural sites and non-cultivated ruderal sites such as fills, spoil banks, railroad grades, road sides and abandoned industrial sites. This situation is occurring throughout the Township of Clinton, in those areas that were once agricultural and are now abandoned.

Typically the species most likely to colonize an abandon area are the "weed" species, which are vigorous pioneer plants that grow and spread rapidly. The first of the pioneer species to invade abandoned areas tend to be the grasses and herbaceous species. At this point, the site would be classified as in an early old field successional state. Over time these grass and herbaceous species are followed by shrubs and small trees. After still more time, the shrubs and small trees tend to shade out the ground cover. As the percentage of woody species increases the site is classified as a late old field successional state. Eventually, unless something interrupts the successional process, the dominant vegetative canopy species found in the area will shade out the pioneer species and the area succeed to a climax community.

Old field areas are dominated by various grasses and herbs including dock, clover, vetch, milkweed, bed straw, ox-eye daisy and johnson grass. Other old field habitat are dominated by shrubs including black raspberry and multiflora rose. Tree species found in old field situations include gray birch, black cherry, big toothed aspen, trembling aspen, red cedar and tree-of-heaven.

2.3 Classification of Aquatic Habitats

The aquatic habitats within the State are classified based on the following criteria:

- Trout Production: Waters that are used by trout for spawning and or nursery purposes;
- Trout Maintenance: Waters with the potential for supporting trout year round; and
- Non-trout: Waters that are not suitable for trout but which, in general, are suitable for a wide variety of other species of fish.

New Jersey's Surface Water Quality Standards also group water ways into two categories:

- Category I Waters: Those waters that originate wholly within Federal, Interstate, State, County, or Municipal parks, forests, fish & wildlife lands,

and other special holdings that have not been designated as FW1, trout production waters. Waters classified as FW2, trout production and their tributaries. Surface waters classified as FW2 trout maintenance or FW non-trout that are upstream of waters classified as trout production. Shell fish waters of exceptional value. Other waters and their tributaries which flow through, or border, Federal, State, County, or Municipal parks, forests, fish & wildlife lands, and other special holdings.

- Category II Waters: Waters other then those listed in Category I.

All trout production waters are classified as Category I waters and are protected ny the NJDEP antidegradation policy. It is not unusual for a stream to have more than 1 classification. For example, the south branch of the Raritan River is classified as trout production above the town of Long Valley, trout maintenance from Long Valley to Packers Island, and non-trout below Packers Island. These differences in classification are brought about by both anthropogenic and natural influences on the stream.

In addition to the freshwater habitats, New Jersey's Surface Water Quality Standards also classify saline waters. These are those waters having salinities of greater than 3.5 parts per thousand at mean high tide. There are two different general classifications of saline waters based on where they occur:

- Coastal saline waters are classified as "SC";
- Saline waters occurring in an estuary are classified as "SE".

There are three classes of SE and one class of SC waters which are distinguished by their designated uses. The classifications and designated uses are as follows:

- The designated uses for SE1 waters are:
  1. Shellfish harvesting in accordance with N.J.A.C. 7:12;
  2. Maintenance, migration and propagation of the natural and established biota;
  3. Primary and secondary contact recreation; an
  4. Any other reasonable uses.

- The designated uses for SE2 waters are:
  1. Maintenance, migration and propagation of the natural and established biota;
  2. Migration of diadromous fish;
  3. Maintenance of wildlife;
  4. Secondary contact recreation; and
  5. Any other reasonable uses.

- The designated uses for SE3 waters are:
  1. Secondary contact recreation;
  2. Maintenance and migration of fish populations;
  3. Migration of diadromous fish;
  4. Maintenance of wildlife; and
  5. Any other reasonable uses.

- The designated uses for SC waters are:
  6. Shellfish harvesting in accordance with N.J.A.C. 7:12;
  7. Maintenance, migration and propagation of the natural and established biota;
  8. Primary and secondary contact recreation; an
  9. Any other reasonable uses.

The stream classifications for the different reaches of the Rahway River are as follows:

- South Branch Rahway River from its source to Hazelwood Avenue in Rahway is FW2-NT;

- South Branch Rahway River from Hazelwood Avenue in Rahway to its mouth is SE2;

- The main stem of the Rahway River upstream of the Pennsylvania Railroad bridge is FW2-NT;

- The main stem of the Rahway River downstream stream of the Pennsylvania Railroad bridge to the Route 1&9 crossing is SE2;

- The main stem of the Rahway River downstream stream of the Route 1&9 crossing to the mouth is SE3;

- The Robinson's Branch of the Rahway River is FW2-NT.

2.4 Threatened and Endangered Species

The New Jersey Natural Heritage Program records of the locations of Federal and State Listed plants and animals as well as the locations of ecologically critical or unique habitat. The Natural Heritage Program data base is source for historic and recent information on the distribution of threatened and endangered species. Because of the sensitive nature of threatened and endangered species information, the exact location of species of concern is rarely disclosed by the Natural Heritage group. The Natural Heritage Group supplies information on whether or not there are

records of threatened or endangered species on a particular site or in the surrounding area.

A search of the New Jersey Natural Heritage Data base for records of threatened and endangered species within the City of Rahway was conducted for this project. This search indicated that there are no records of threatened or endangered species in the area.

2.5 Site Topography

The surface relief of Union County is divided into two areas including ridges, hills and higher elevations rising as much as 400 feet above the adjacent lowland of smooth, rounded hills separated by wide valleys sloping gently down to the Coastal Plain with no clear distinction between these two divisions. The City of Rahway portion of the County is within the gently sloping Coastal Plain. Elevations in Rahway range from 60 feet along its western boarder and gently slopes toward the Arthur Kill, and an elevation of 10 to 20 feet.

The Rahway River and its tributaries drain a total of 83.2 square miles, 46.4 square miles of which are in Union County. The Rahway River watershed crosses Union County in a generally north-south direction. The watershed extends into Essex and Middlesex Counties.

In the City of Rahway there are seven soil types surrounding the Rahway River and its tributaries. They are:

- **Aquents, Frequently Flooded (Aw)** - These soils are poorly to somewhat poorly drained. The slopes for this soil are 0 to 3 percent. These soils consist of stratified loamy sediments and organic materials. The seasonal high water table is at or near the surface. Included in this soil type are Passaic, Carlisle, and Raritain soils. The Passaic and Carlisle soils are in depressions and old stream meander scars within the flood plains. The Raritian soils are mainly along the margins of the flood plain in areas that flood frequently.

- **Boonton Loam, 3 to 8 percent slopes (BoB)** - This soil is gently sloping and well to moderately well drained. Included in this soil mapping unit are unnamed fine-loamy soils which are similar to Boonton soils and Haledon, Birdsboro, Dunellen, Hasbrouck, and Carlisle soils. Haledon, Hasbrouck and Carlisle soils are found in small depressions, swalls and drainageways. The Birdsboro and Dunellen soils are near stream are near stream terraces. This soil has a perched water table and slow percolation rate.

- **Boonton - Urban Land - Haledon Complex, Gently Sloping (BuB)** - This soil unit consists of well to moderately drained Boonton soils, areas of Urban land and somewhat poorly drained Haledon soils. Slopes range from 0 to 8 percent. The Urban land part of the unit is covered by streets, driveways, parking lots, buildings, and other structures that obscure or alter the soils so that identification of the soils is not feasible. These areas are generally considered impervious. This soil unit has a perched water table that is at a depth of 6 to 72 inches.

- **Haledon Loam, 3 to 8 Percent Slopes (HaB)** - This gently sloping soil is somewhat poorly drained. It is typically found at the toe of slopes of the terminal moraine and in low convex areas along the edges of streams. Included in this mapping unit are Boonton, Amwell and Hasbrouck soils. There are also minor inclusions of Whippany, Raritan and Dunellen soils. The Boonton and Amwell soils are found on gently sloping areas. The Hasbrouck soils are found mainly in depressions. The Whippany, Raritan and Dunellen soils are near outwash plains. This soil unit has a perched water table at a 6 to 18 inch depth from winter through late spring.

- **Haledon - Urban Land - Hasbrouck Complex, Gently Sloping (HuB)** - This soil unit consists of somewhat poorly drained Haledon soils, areas of Urban land, and poorly drained Hasbrouck soils. The Haledon soils are both convex and nearly level slopes of 0 to 8 percent. The Hasbrouck soils are found in depressions and along drainageways on slopes of 0 to 2 percent. As with the BuB soil unit the Urban land part of this unit is covered by streets, driveways, parking lots, buildings, and other structures that obscure or alter the soils so that identification of the soils is not feasible. These areas are generally considered impervious. This soil unit has a perched water table at 6 to 18 inches. Runoff is slow and the hazard of erosion is moderate.

- **Hasbrouck Silt Loam, 0 to 3 Percent Slopes (Hv)** - This soil type is nearly level and poorly drained. It is found in depression and level areas within undulating glacial till. Included in this soil mapping unit are Haledon, Parsippany and Passaic soils and Aquents. These soils are frequently flooded. The Haledon soils are on slopes of more than 3 percent. The Aquents are formed in recent alluvium and are generally found adjacent to streams. There is a perched water table at the surface to a depth of 6 inches. Ponding and flooding adjacent to streams is common. Runoff is ponded and the hazard of erosion is low.

- **Udorthents,, Loamy (UG)** - This mapping unit consists of areas that have been cut or filled during grading and other site preparation work for residential development, roads, watershed management projects and recreational areas. The fill areas are generally nearly level or gently sloping. Included in this mapping unit are soils that have not been appreciably altered by cutting or filling, Urban land, sanitary landfills, and Udorthents over tidal marshes.

- **Udorthents, Organic Substratum (UH)** - This unit consists of areas along side of the Arthur Kill and its tributaries where various types of material have been used to fill tidal marshes. This material is extremely variable. Dredge materials make up a considerable portion of this soil unit. Included in this mapping unit are sanitary landfills, areas of undisturbed tidal marsh, Udorthents and Urban land.

- **Udorthents, Waste Stratum (UK)** - This unit consists of areas that have been used for disposing of refuse. It is a combination of highly variable fill material and refuse which consists of brick, glass, cement, wood, wire, asphalt, plastic containers, cans and other materials.

- **Urban Land (UL)** - This unit is nearly level to gently sloping. It consists of areas where more than 90 percent of the surface is covered by asphalt, concrete, buildings and other impervious surfaces. Included in this mapping unit are Udorthents, loamy and small areas of undisturbed soils. The undisturbed soils are commonly similar to soils in the surrounding area.

2.6 Physical Characteristics of the Aqautic Habitat

There are a number of physical characteristics that define the habitat quality of the River. These include:

- **Riffle Zone** - Riffle zones are stretches of choppy water caused by a rocky shoal or sandbar below the surface of the waterway.

- **Pool Zone** - A deep slow flowing portion of the river.

- **Run Zone** - A run is a smooth, fast flowing portion of the river

3.0 Rahway River Corridor

The investigation area for this River Study is the Rahway River Corridor as it passes through the City of Rahway. For the purposes of this study the river corridor has been divided into the following four reaches:

- Robinson's Branch
- North Branch of the Rahway River
- South Branch of the Rahway River
- Rahway River (main stem)

The Robinson's Branch of the Rahway River originates in a wetland area south of Inman Ave in Edison Township, Middlesex County. Several small tributaries of this branch converge prior to entering Ash Brook Reservation in Scotch Plains. A number of tributaries drain the reservation into the Robinson's Branch. The Branch continues to flow in a northward direction as it is fed by tributaries from Shackamaxon Lake and Tamaques Reservation Lake. The Robinson's Branch and one other unnamed tributary originating from the north are dammed in the Township of Clark, forming the Middlesex Reservoir. Immediately south and downstream of the reservoir dam, the Robinson's Branch passes into the City of Rahway on the City's western border. The reservoir discharges into a small reach of the river and forms Milton Lake, which is also dammed. From Milton Lake this branch flows in an easterly direction until it converges with the North Branch of the Rahway River at the corner of Elizabeth Avenue and West Grand Street.

The North Branch of the Rahway River originates in South Mountain Reservation, West Orange, Essex County. The North Branch is fed by the West Branch, Orange Reservoir and other tributaries. It flows southward through Campbells Pond and Diamond Mill Pond within the Reservation. Tributaries from Millburn Township, Essex County and from the Township of Union, Union County converge with the river. South of the County border, the Township of Springfield's tributaries empty into the North Branch within the Union County Rahway River Parkway Park. The Black Brook and the Rahway River converge in Lenape Park in the Borough of Kenilworth. Tributaries from the Watchung Reservation and Echo Lake in the Borough of Mountainside converge with the Rahway in Nomahegan Park. The river flows south in the park along the Townships of Cranford, Clark and Winfield before entering the City of Rahway. The North Branch of the Rahway River enters the City of Rahway along the northern border in the County Park. The river continues to flow south through its convergence with the Robinson's Branch at Elizabeth Avenue and West Grand Street and through its convergence with the South Branch of the Rahway River at the junction of State Highway Route #1 and Hazelwood Avenue.

The South Branch of the Rahway River originates in Iselin, Middlesex County. The river flows to the northwest through Merrill Park. It enters the City of Rahway through the southern City border on the western side of St. Georges Avenue. The River passes under St. Georges Avenue and flows in an easterly direction until its convergence with the North Branch of the Rahway River

at the junction of State Highway Route #1 and Hazelwood Avenue.

After the convergence of the North and South Branch, the main branch of the Rahway River flows east to the Arthur Kill along the borders of the City of Linden, Union County and the City of Carteret, Middlesex County. Prior to discharging into the Arthur Kill, the Rahway is joined by Marshes Creek in Linden and a number of unnamed tidal tributaries.

4.0 Ecological Integrity

The ecological integrity will be evaluated by Block and lot number. Block and lot descriptions are divided among the four main branches of the river. Table 6 presents the numerical order of the block and lot numbers for ease of future reference, since, the numerical order of these identifiers may ***not*** always follow the directional flow of the river. Table 1 lists the scientific and common names of the species of plants by plant community typically found in the City of Rahway. Tables 2 - 5 lists the amphibians, reptiles, birds and mammals typically found in habitats observed in the City of Rahway. Detailed land use and habitat maps are included in the section titled Figures.

Previous studies conducted along the study area detected slight levels of PCB and metals contamination. Such findings are expected, since, the majority of the River is heavily industrialized.

4.1 Robinson's Branch

Blocks 114 and 121 [Maps 1, 2] - This is the Milton Lake reach of the River. The area surrounding Milton Lake is residential. Upstream of the lake adjacent to Kanski Court there is a manicured lawn on the eastern bank with some landscaped white pine and spruce trees. Adjacent to the river typical wetland vegetation species are found. The western side of the river is a relatively broad wetland flood plain dominated by wetland species. The river is relatively sluggish through this area. As the river feeds south into the lake by Midwood Drive and along the lake shore, the eastern bank supports manicured lawn area with some white ash, spruce and red maples. The eastern river bank is approximately four feet high as it feeds into Milton Lake. The western bank upstream of Milton Lake is a broad flat wetland area dominated by green brier. Along the western edge of Milton Lake the bank is steep. There is a small wooded island dominated by pin oak in the lake.

Downstream of the Milton Lake dam the character of the river changes. There is a small island in the river dominated by red maple and sycamore. The river is shallow with a rocky bottom. The area is characterized as a riffle/run zone. A small ballfield within the maintained portion of the northern bank is present. The southern bank along West Lake Avenue is a broad, flat ,forested wetland/flood plain area which contains pin oak, wild black cherry, red maple and green brier.

Blocks 136, 137 and 140 [Map 3, 4] - This portion of the River runs through a residential area. Lots 10 and 11 make up a small, City-owned park. This area has a manicured lawn with four white ash, one tulip tree and two pin oaks. Along the eastern edge of Lot 10, an unmapped tributary discharges into the Robinson's Branch. This tributary shows significant bank erosion, which during times of high flow, may contribute to the sediment load of the river. This reach of

the river is shallow with a rocky bottom and would be characterized as a riffle zone. Downstream of the park the river is characterized by either steep banks (Block 137, Lots 9 and 11) or a retaining wall (Block 137, remainder). Along the majority of this River edge there is a small strip of wetland vegetation including musclewood, pin oak, and sycamore. There is a small gravel bank on Block 140 along the southern bank of the river upstream of the culvert under Jefferson Avenue. After emerging from the culvert there is a river riffle zone followed by a long run.

The land use along the northern bank of Block 140 is residential. Portions of the American Legion property on Maple Avenue contain manicured lawns with pin oaks. Block 140, lot 2 is a large (7.01 acre) commercial area. There is a thin border of forested wetland vegetation along both sides of the river. This borders both the residential side and commercial side. Block 140, lot 1 is a city-owned park of sprawling manicured lawns. The more southern portions of the lot are a continuation of the forested wetland vegetation above dominated by red maple, pin oak and wild black cherry. This reach of the River is deeper and flows slowly.

Blocks 161 and 162 [Map 5] - The banks of this reach of the River are concrete- walled. Along Block 162 a church and apartment house border the river; along the northern bank a thin border of sycamore and tree-of-heaven are growing. The southern bank and wall are dominated by Japanese knotweed. Adjacent to Block 162 the land use is a mix of residential and commercial uses. There is a thin border of vegetation along the northern and southern banks consisting of red maple, silver maple, tree-of-heaven, American elm and Japanese knotweed. The banks are steep and eroded. The river is slow-flowing and the bottom is muddy.

Block 167 [Map 6] - The River exhibits a riffle and run zone beginning at the New Church Street culvert . Land use surrounding this block is a mix of commercial, residential and educational (Veteran's Memorial Field). Lot 32 contains old field habitat. The river banks through this portion of the River are steep with a narrow band of forested wetland and upland habitat along the bank. Portions of the bank show evidence of erosion.

Block 168 [Map 7] - The area surrounding the River through this reach is residential. There is a large vacant lot (Lot 23) downstream of the St. Georges Avenue Culvert along the northern bank of the river. This lot is partially lawn and partially forested upland dominated by red maple, silver maple and wild black cherry. The majority of the southern bank is steep with a narrow wooded border, while downstream Lots 35 and 36 on the northern bank support a broader wooded portion. A bit farther downstream lots 42 and 43 banks are supported by a retaining wall. The river bottom is gravelly through this reach and contains a mixture of riffle and runs.

Block 178 [Map 8] - The land use surrounding this reach of the river is a mixture of park and residential. The northern bank is steep and slightly eroded. The park area is a mixture of manicured lawn with maintained pin oak and white ash trees.

4.2 North Branch

Blocks 160 and 161 [Map 5] - Land use surrounding this reach of the River is a mixture of commercial, residential and county park. The north western bank , beginning just upstream of the junction with the Robinson's Branch to just below Elizabeth Avenue, is rocky, steep, and heavily eroded. This bank has a narrow tree line comprised of black willow, American elm and tree-of-heaven. The park area bordering the eastern bank is a maintained lawn containing maple, pin oak and sycamore trees. The river bottom along this stretch is muddy and the stream is slow-flowing.

Blocks 200 and 201 [Map 10] - This reach of the river flows through Union County park. As the river enters the City from Clark Township it has very steep banks. The River is slow-flowing and the bottom is muddy. This portion of the River is slow-flowing as a result of the man-made dam located across from the water treatment facility. Immediately upstream of the dam, the eastern bank is gently sloping with a broad wetland/floodplain. This area is dominated by sweet gum, red maple, sycamore, arrow wood, pin oak and muscle wood. The surrounding upland areas are dominated by white oak and American beech. Downstream of the dam the river is fast-flowing and shallow with a rocky bottom. The southern bank has a steep slope which is eroded.

At this point the River receives water from the lake in the park. There is a large blue water tank located between the lake and the River. This tank is partially camouflaged by evergreens but is still visible from the park. Downstream of the confluence of the lake and the River, the northern bank is steep and heavily eroded. There is a USGS gaging station prior to this reach as it passes though a culvert under St. Georges Avenue. There is a low dam adjacent to the gaging station with a small water fall. The southern bank of this reach includes a cemetery and commercial development.

Block 212 [Map 11] - The land use surrounding this reach of the River is park and commercial. There is a small island in the River dominated by white oak, sycamore and Japanese knotweed. The river bottom is gravelly. A gravel bed exists at the eastern end of the island. The northern bank of the river is a maintained lawn containing numerous landscaped trees including sweet gum, white oak, and white ash. There is commercial development (primarily, a large parking lot) along the southern bank of the river. The remaining portions of the southern bank are gently sloping wetland/floodplain dominated by pin oak, red maple, Norway maple, wild black cherry and Japanese knotweed. There is a trail which runs back through this portion of the wetland. Portions of the southern bank show signs of severe erosion.

Block 219 [Map 12] - The land use surrounding this reach of the River is residential and recreational, ie. park. Riffles and run areas are present. The river bottom is rocky to gravelly. There is a small island within the River dominated by pin oak, wild black cherry and Japanese knotweed. The southern end of the island has significant bank erosion. The western bank of the River is part of a broad flat wetland/floodplain dominated by sweet gum, Norway maple and black

locust. An unnamed tributary converges with the North Branch downstream of the island. The banks of the tributary are steep and slightly eroded. Dominant vegetation includes tree-of-heaven, mulberry, and silver maple. The area between the tributary and the main branch of the river is a maintained lawn. The northwestern bank of the river is a maintained lawn containing a number of maintained trees including sweet gum, Norway maple, red oak, sycamore, shagbark hickory, black locust and American beech. There is a narrow border of wetland species along the edge of the river containing red maple and arrow wood.

Block 224 [Map 13, 14] - The land use surrounding this reach of the River is recreational, ie. park , and residential. The river bottom is gravelly and the bank along the southern edge has been channelized. Allen Street Brook converges with the River in this reach. The river has a broad, gently sloping floodplain containing wetland species of sycamore, Norway maple, wild black cherry, white ash and pin oak. While this portion of the river is fresh water, it appears to be tidally influenced. Along the northern portion of this reach, the river edge has a narrow band of wooded bank bordering maintained county park lawns. Vegetation along the bank of the river include a mixture of upland and wetland species such as Japanese knotweed, box elder, Norway maple, sycamore, mulberry, arrow wood and American elm. There is a large gravel bar upstream of Union Street.

Block 303 [Map 20] - This reach of the River is slow-flowing with a silty clay bottom. The eastern bank is steep and rip-rapped. The dominant vegetation is Phragmites. The western bank is a mix of American elm, black locust, silver maple and pokeweed. The base of the bank contains broadleaf cattail, Phragmites and Groundsel-tree. Land use through this reach is a mixture of industrial and residential.

Block 305 [Map 20] - The North and South junction is found in this Reach of the River. The River is slow-flowing with a muddy bottom. A small tidal tributary feeds the River from the south. The land use surrounding this portion of the River is residential. The southern bank is steep with Norway maple, pin oak, flowering cherry, and wild cherry. Lot 4 is an area of city-owned maintained lawn. The banks are dominated by typical wetland species, Phragmites with a thin band of Spartina along the edge of the water.

Blocks 319 and 500 [Map 21] - This portion of River is surrounded by commercial land uses. The River is slow-flowing with a muddy bottom. A concrete embankment exists along Block 500 while Block 319 has a steep earthen embankment. Vegetation along the banks includes Norway maple, tree-of-heaven, sycamore, American elm, black cherry, arrow arrum, box elder and other ruderal herbaceous species. This reach of the River contains trash from the surrounding area.

Blocks 321, 327 and 328 - This portion of River is surrounded by commercial uses to the west and residential land uses to the east. The River is slow-flowing with a mud bottom. The western bank is steep and vegetated with grasses and Japanese knotweed. The eastern bank is rip-rapped and vegetated with silver maple, tree-of-heaven, pin oak and sycamore. This reach of the river contains trash from the surrounding area. This portion of the river is tidal which accounts for the

difference in habitat quality in this portion of the River.

4.3 South Branch

Block 274 [Map 15] - The River enters the City from Woodbridge Township, Middlesex County in this reach. This block is adjacent to the Amtrak railroad tracks. Land use surrounding this portion of the River is industrial/commercial. This stretch is shallow with a rocky/gravelly bottom inundated with trash from the surrounding area.

Block 276 [Map 15] - This reach of the River runs adjacent to the K-mart and through an area that is predominantly industrial/commercial. The banks are gently sloping and are lined with typical ruderal species such as tree-of-heaven and Japanese knotweed. The river bottom is rocky with numerous mudflats scattered through out the floodway. The river passes under a portion of the Conrail tracks through a culvert.

Block 277 [Map 16] - The area surrounding this reach of the River is a mix of commercial and industrial land uses. Sections of riffles and run area exist in this portion. The river bottom is rocky with some mudflats throughout. The northern bank is steep with concrete slabs along portions of it. The southern bank is gently sloping. There is a sewer easement between lots 18 and 19. The area between the sewer easement, the river and the northern bank contain wetland and ruderal species including mulberry, sweet gum, wild black cherry, tree-of-heaven, silver maple and Japanese knotweed.

Block 278 [Map 17] - This reach of the River has a rocky bottom with numerous small riffle zones. The northern bank of the River has been modified by an Army Corps of Engineers flood and erosion control project is composed of rip-rap lined dikes. The land use to the north of the River is residential. Growing above the rip-rap is an area of manicured lawn. The southern bank of the River has a steep slope containing small silver maple, pin oak Japanese knotweed and arrow wood. The land use on the southern side of the river is commercial.

Block 292 [Map 18] - This reach of the River is shallow with a gravelly bottom. There are small riffle zones and gravel flats. The northwestern bank is steep with a maintained lawn along the top of the bank, while the southeastern bank is predominantly rip-rapped. Land use along the northwestern side of the river is residential. Along the southeastern side of the river, lots 1 through 10 are residential. An industrial facility is present on Lot 11. This bank is vegetated by wild black cherry, blue vervain, blue flag iris, aster, grasses and Phragmites.

Block 298 [Map 19] - Along this reach of the River the vegetation changes from freshwater species to brackish water species. The bottom is silty with some rocks. There are mudflats at the base of the banks. The flow through this reach is sluggish. The banks are steep with numerous areas of rip-rap along the entire reach. Lots 19 and 20 have a concrete wall lining the river. A

storm sewer discharges into the river from lot 13. The vegetation at the bottom of the bank is dominated by marsh elder, Spartina, Phragmites and groundsel-tree. The vegetation along the tops of the banks includes small locust trees, Japanese knotweed and blue flag iris. The land use along this reach of the river is residential.

Block 303 [Map 20]- This reach of the South Branch contains the mouth of the river. A large mudflat with Spartina growing along the edge forms at the junction of the South Branch and the North Branch. The bank adjacent to Hazelwood Avenue is steep. This portion of the bank shows significant signs of erosion. The bank of the River supports Norway maple, pin oak, flowering cherry and wild black cherry. There is a large apartment complex to the north of the junction.

4.4 Rahway River

Block 303 [Map 20] - The junction of the North and South Branch is located in this reach of the river. The river is slow-flowing with a muddy bottom. A small tidal tributary feeds the River from the south. The land use surrounding the River is residential. The southern bank is steep with Norway maple, pin oak, flowering cherry and wild black cherry. Lot 4 is an area of maintained lawn. The southern bank is dominated by Phragmites with a thin band of Spartina along the edge of the water.

Blocks 338, 339, 340, 341, 342, 343, 344 and 345 [Maps 24, 25, 26, 27] - The vegetation along this final reach of the Rahway River is dominated by tidal wetland species. The river is slow-flowing with a muddy bottom. Block 338 contains the Union County Resource Recovery Facility and residential land use. Block 344 is residential land use. The remaining areas are industrial. Intertidal areas are dominated by Spartina, while the high marsh areas are predominantly Phragmites. Vegetation along the banks includes American elm, locust, goldenrod, pin oak, rag weed, sumac, mulberry and pokeweed.

5.0 Habitat Evaluation

5.1 Habitat Types

The habitat identifications noted on the Land Use maps refer to general habitat types encountered on properties immediately adjacent to the main stems of the Rahway River within the City of Rahway. It should be noted that in addition to the below mentioned habitats, the river banks are vegetated to some extent for almost the entire corridor of the river system. At the least, a vegetated bank will define a few grasses and herbs springing up along concrete holding walls. At the very most, a vegetated bank will define a thin border of mature trees of species similar to those listed in the "FW" or "FU" habitats. Wherever possible, significant habitat types were located and placed on the maps. The following habitat types are defined.

ML - Manicured Lawn
ML defines maintained open, grassy areas on private or government owned land, including parks and ballfields. Usually these areas are interspersed with landscaped trees and/or shrubs. Most commonly these species included maples (*Acer spp.*), oaks (*Quercus spp.*), dogwoods (*Cornus spp.*), pines (*Pinus spp.*), and spruces (*Picea spp.*). United States Fish and Wildlife Service, National Wetlands Inventory (USFWS NWI) Ecological System Classification would note maintained lawn areas as "U" for Uplands.

FW - Forested Wetlands
Forested wetland habitats encountered along the river were a mixture of shrub and tree species found along the banks and floodplains of the water. Common species include Pin oaks (*Quercus palustris*),White oaks (*Quercus alba*), Red Maples (*Acer rubrum*), Silver maples (*Acer saccharinum*), Boxelders (*Acer negundo*), Sweet gums (*Liquidambar styraciflua*), River birches (*Betula nigra*), Sycamores (*Platanus occidentalis*), Black Willows (*Salix nigra*), Tree-of-Heavens (*Ailanthus altissima*), Japanese Knotweed (*Polygonella cuspidatum*), Greenbrier (*Smilax rotundifolia*), Arrowwood (*Vibernum dentatum*), Iris' (*Iris versicolor*), Blue vervain (*Verbena hastata*), Buckwheats (*Polygonaceae spp.*), and Potamegetons (*Potamogeton spp.*). USFWS classification for these wetlands would be "PFO1" for Palustrine Broad-leaved Forest. If the species found in an area are strictly shrub dominated, the areas are noted by the USFWS NWI as "PSS1", for Palustrine Broad-leaved Scrub-Shrub.

FU - Forested Uplands
Forested uplands along the river system usually included shrubs and mature trees (many of a ruderal nature). Species commonly included Red cedars (*Juniperus virginiana*), American elms (*Ulmus americana*), Sugar maples (*Acer saccharum*), Red maples, Norway maples (*Acer platanoides*), Red oaks (*Quercus borealis*), Black oaks (*Quercus velutina*), Sycamores, White ashes (*Fraxinus americana*), Wild Black cherry (*Prunus serotina*), Black Locust (*Robinia*

pseudoacacia), Mulberry (*Morus sp.*), Tree-of-Heavens, Winged sumac (*Rhus copallina*), Pokeweed (*Phytolacca americana*), Multiflora rose (*Rosa multiflora*), Catbrier (*Smilax glauca*), and Goldenrods (*Solidago spp.*). USFWS NWI classification for forested uplands would be "U" for Uplands.

TW - Tidal Wetlands

Tidal wetlands encountered along the southern reach of the river are defined as emergent bordering mudflats covered with species such as Common Reed (*Phragmites australis*), Broadleaved cattails, Groundsel-tree (*Baccharis halimifolia*), Marsh elder (*Iva frutescens*), Salt marsh grass (*Spartina alterniflora*), and Salt meadow grass (*Spartina patens*). USFWS NWI classification for these tidal wetlands would be "E2EM" for Estruarine Intertidal Emergent Wetland.

OF - Old Field

The old field habitat encountered along the river was an abandoned lot left to succeed to grasses and perennial herbaceous vegetation such as Kentucky Bluegrass (*Poa pratensis*), Deer tongue grass (*Panicum clandestinum*), Little Bluestem (*Andropogon scoparius*), Broom sedge (*Andropogon virginicus*), Foxtail (*Alopecurus spp.*), Goldenrods (*Solidago spp.*), and Asters (*Aster spp.*). USFWS NWI classification for this habitat would be "U" for Uplands.

EM - Emergent Wetlands

The freshwater emergent wetlands encountered along the river define open areas covered with hydrophytic grasses (path rushes) and herbaceous vegetation (goldenrods, iris', asters, blue vervain, common reed). USFWS NWI classification for this habitat would be "PEM" for Palustrine Emergent Wetlands.

OW - Open Water

The river waterways are noted by the USFWS NWI as open water areas. Several classifications exist along the Rahway River. "L1OW", "POW" and "E1OW" classifications refer to Lakustrine, Palustrine and Estruarine habitats, respectively. L1OW and POW habitats may support aquatic vegetation such as *Potamogeton*. E1OW habitats in this area traditionally supported eel grass, but this species has been extirpated from the New York/New Jersey harbor area. Wetland areas surrounding POW and E1OW may include PEM, PFO1, PSS1 and E2EM respectively.

CH - Channelized Bank

Maps note where the river has been channelized or the bank has been stabilized with fixed concrete walls, large rip-rap stones, or randomly dumped concrete slabs.

5.2 Aquatic Habitat Resources

Trout fishing is a very popular recreational use of the Rahway River and its tributaries. The trout stocked waterways in the City of Rahway include the Rahway River and Milton Lake (which eventually feeds into the Rahway River via Robinson's Branch). Most fishing in this river is done from the stream banks and the shores due to the shallow depths of these water courses. The Division of Fish, Game, and Wildlife studies New Jersey waterways for their trout stocking potential. Fisheries Biologists stock different waterways according to numerous factors such as waterway miles, stream classification (trout production, non-trout production, etc.), angler interest, available public land, human surrounding population, available parking, and stream category which is based on stream flow.

The entire Rahway River is considered as a whole when stocking information is tabulated despite the numerous municipal jurisdictions the river flows through. The stocked portion of the Rahway River is 8.5 miles long; the stream classification is non-trout producing; angler interest is rated high; available parking is adequate; and stream category based on stream flow is Category C: 20 cfs to 30 cfs. The above information is used to determine the number of trout the Rahway River shall be stocked with each year.

The Division of Fish, Game and Wildlife stock the entire Rahway River with 2345 brook trout and 3885 rainbow trout annually. There are approximately 14 stops along the Rahway River stocking route, although only one stop is actually within the City of Rahway. Fortunately for the sportsmen and women of the City of Rahway, the other 13 stops are upstream of the City boundary. Just north of the City boundary with the Township of Clark is the thirteenth stop along the route. This stop is at the Parkway Drive and Valley Road Bridge. The last stop along the Rahway River is at the Rahway River Park across from the municipal pool. The stocking truck enters via the entrance to the Rahway Water Works from the entrance on Westfield Avenue.

The total of 6230 fish will be stocked five times over the ten week trout stocking period. The first stocking date will be before the trout stocking season opens (sometime during the last week of March). The trout fishing season begins on the first Saturday in April. The last four stocking dates will be between opening day and approximately the end of May. The number of fish stocked at each particular stocking point on any particular stocking date varies greatly. It is up to the discretion of the biologists doing the actual fish net drops as to how many fish shall be stocked at each stop. The most important consideration is the depth of the water at the stops. Fishing pressure is also considered.

Milton Lake located upstream of the Robinson's Branch of the Rahway River is also stocked by the Division of Fish, Game, and Wildlife. The two stocking points are along Beechwood Road ahead of the lake and the damn off of Midwood Drive. The stocked trout may stay in the depths of the lake or they may travel downstream along the Robinson's Branch and eventually swim into

the Rahway River downstream of any of the other current stocking locations.

The Division has not had any problems stocking in this area. The stocking program along the Rahway River is flexible enough to work around construction and road blocks at the stocking locations should this occur. Lake draining and river damning will be reported to the Division when the appropriate permits are issued from the Department of Environmental Protection's Land Use Regulation Element. At this time an altered trout stocking schedule will be used.

The Division continues to evaluate their trout stocking program to balance financial, environmental, and public recreation use issues. The Division does not foresee any plans to alter the selected trout stocking program for the Rahway River at this time.

5.3 Recreational Use

The areas along the Rahway River within the City of Rahway which receive the most use are the areas around and downstream of the trout stocking locations within the Rahway River Park during the spring and summer months. The River is always shallow along this stretch and all fishing is done from the shore. Boat access would not be beneficial along the northern portion of the Rahway River. It is the opinion of the Conservation Officer that there is adequate parking and other facilities located within the heavily used public recreational use portion of the Rahway River.

The head of tide is located near the confluence of the Rahway River and the Robinson's Branch of the Rahway River. Saline waters produce crabs which are harvested for recreational use and consumption. Striped bass may also venture upstream from the salt waters to the Rahway River at this point. A boat access may bring fishers for striped bass and other species. Should any tidal portion of this waterway be developed for increased public access, recreational and natural resource use will increase proportional to the level of access.

6.0 Conclusions and Recommendations

There are a number of locations along the river bank that are experiencing erosion problems. Erosion not only impacts the river where the erosion occurs but also has deleterious effects on the biological community downstream. Increased sediment load in the river increases the ability of the water to cut new areas of the river bank. The increased sediment load also stresses the benthic and pelagic organisms in the river. Sediment deposition down river changes substrate composition. Sediment deposition excludes the normally diverse benthic communities and encourages pollution tolerant benthic organisms.

There are two areas of erosion concern, steep banks and eroded or under cut banks. Steep bank areas should be monitored because of their potential for eroding. River bank restoration measures should be employed for eroded or undercut banks. The following are areas of concern:

Steep Banks	
Block	Map
114	1
137	3
160	5
161	5
167	6
178	8
201	10
219	12
277	16
292	18
298	19
319	21
327	23
500	21

Eroded Banks	
Block	Map
114	1
136	3
161	5
168	7
201	10
212	11
219	12
298	19
305	20

All erosion and sediment control measures for the wetland/stream bank restoration/mitigation projects should be implemented in accordance with the Standards for Soil Erosion and Sediment Control developed by the New Jersey State Soil Conservation Committee (SCS, 1987).

A line of hay bales should be double staked along the edges of the disturbance area prior to any grading operations. This line of hay bales should be maintained in effective condition until restoration is completed and the disturbance area has been stabilized. Once the disturbance area has been stabilized, the hay bales can be removed from the site.

In order to protect the planted stock and soil/sediment final cover from wave action and erosion, a high strength organic geotextile mat (such as BonTerra, 100% High Strength Coir (Coconut)

Fiber Mats) should be used to cover the entire restoration/mitigation area. The following are specifications for the organic geotextile mats:

Organic Geotextile Mat Specifications **

Thickness	ASTM D1777	0.30 inches
Flexibility	ASTM D1388	65030 mg/cm x 29590 mg/cm
Tensile Strength	ASTM D4595	1348 lb/ft x 626 lb/ft
Elongation	ASTM D4595	34% x 38%
Weight	ASTM D3776	20 oz/y^2 or 700 g/m^2
Open Area	Measured	50%
Water Flow Velocity	Observed	11 ft/sec

** Corresponds to BonTerra CF7

Coconut fiber mats will be secured to the substrate using 12 inch staples.

Biomats are a carpet of coconut fiber that is held together with an organic latex and secured with a high tensile strength netting. These mats are used for erosion control to stabilize shorelines and pond edges. The biomat can either be pre-planted at a nursery or planted on site. The biomat will hold the plants and underlying sediment in place for several years which assists the plants in becoming established. After the plants are established, the root systems of the plants will serve to stabilize the stream bank.

Another restoration tool is the biolog. These are 20 foot long tubes of coconut fiber, 12 inches in diameter that is layered across a stream bank and staked in place so that it is partially submerged in the water. Herbaceous wetland seedings are planted on site, directly into the biolog. The log acts as a secure planting medium which allows the plants to become established. Normally, within several weeks the root of the herbaceous stock have grown through the biolog and into the sediment below. While it takes between 4 and 8 years for the biolog to degrade, the streambank is stabilized within one or two years.

Scenic Overviews and Enhancement Suggestions

The habitat down stream of Milton Lake provides a scenic area with the potential for passive recreational use including bird watching and in the fall, as a scenic leaf watching area. Construction of a bird watching board walk (nature trail) constructed through the diverse habitat in this broad flood plain/wetland area would serve as an excellent educational resource.

Construction of a trail immediately downstream of the Milton Lake Dam, across the small island and into the wetland area along the southern bank of the river would provide chances for educational overview sites for different upland and wetland species, demonstration of erosion control measures and different stream habitats. This area has the potential to provide bird watching opportunities for aquatic water fowl and migratory passerines.

The broad flood plain areas east of the maintenance area in the county park provides an additional nature trail area. Two different aquatic habitats are evident, the pooled area upstream of the dam and riffle/run habitat downstream of the dam. The stream bottom changes from a muddy/silty habitat with emergent vegetation to a rock/gravel habitat. To enhance the scenic view in this area, the water tank adjacent to the dam should be painted a dark color so that it blends into the surrounding better.

A different habitat area with the potential for nature trail construction is south of the Union County Utilities Authority property. A nature trail through this area can be routed through the ruteral upland habitat, or an upland habitat restoration project (which could easily be accomplished in this area), through the high marsh habitat and the intertidal marsh habitat. The upland habitat will serve as a migratory stop over of passerines. The intertidal marsh and river bank will provide bird watching opportunities for water fowl, wading birds and other aquatic species.

It should be noted that prior to undertaking any restoration or enhancement projects, a stream encroachment permit (for projects within the 100 year flood plain) and a wetlands permit (for projects within wetland areas and wetland transition areas) will be needed. These permits can be obtained from the NJDEP Bureau of Inland Regulation.

In addition to the recommended enhancement projects the City of Rahway is planning the following additions and improvements to parks along various branches of the Rahway River.

- ***Rahway River Bike Trail*** - The City of Rahway and the Union County have received a $75,000 grant under the ISTEA Transportation Enhancement Grant Program for the creation of a one mile bicycle trail through portions of county owned parks along the Rahway River. The trail will provide a bicycle trail and pedestrian walkway through the parks. The location of the proposed trail is shown on the land use maps.

- ***Lower Essex Street Park Acquisition Process*** - The City of Rahway has been approved for $1,000,000 in funding through New Jersey State Green Acres for the acquisition of approximately ten acres of land adjacent to the Rahway River between Milton Avenue and Route 1 & 9. Additionally, the New Jersey Conservation Foundation has agreed to provide $15,000 toward the acquisition of this property. This project is a continuation of the City's efforts to conserve additional property along the Rahway River and add such natural waterfront property to its inventory of open space. The proposed new park will provide passive and active recreational facilities which are riverfront oriented, including a boardwalk through the wetlands along the Rahway River and a fishing pier.

- ***Union/Allen Street Property Acquisition Project*** - The City of Rahway recently received approval for funding for the acquisition of one and one half acres of residential property in the flood prone Union/Allen Street area. The City will acquire property which contains residential structures and is currently subject to flooding due to their location within the flood plain of the Rahway River. Following acquisition, the residential structures will be demolished and the land will be returned to its natural state. The acquired property will provide access to and connection with other county owned property along the Rahway River.

- ***Community Block Development Grant*** - The City of Rahway has been awarded $100,000 in Community Block Grant funds to acquire vacant property located on Main Street between Bridge and Monroe Streets along the Rahway River. The plan is for the property to be acquired and improved into a passive park, taking advantage of the frontage on the Rahway River. Additionally, this project will extend the greenway along the river.

Table 1

PLANT COMMUNITIES TYPICAL OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Scientific Name	Common Name	Upland Communities		Wetland Communities		
		Forested Upland	Old Field Successional	Emergent Wetlands	Forested Wetlands	Tidal Wetlands
Osmunda cinnamomea	Cinnamon fern				X	
Osmunda regalis	Royal fern				X	
Osmunda claytoniana	Interrepted fern				X	
Thelypteris noveboracensis	New York fern	X				
Thelypteris palustris	Marsh fern	X				
Dryopteris cristata	Crested fern			X	X	
Dryopteris marginalis	Marginal wood fern				X	
Dryopteris carthusiana	Spinulose wood fern	X				
Polystichum achrostichoides	Christmas fern		X	X		
Onoclea sensibilis	Sensitive fern				X	
Tsuga canadensis	Eastern hemlock				X	
Juniperus virginiana	Red cedar		X			
Liriodendron tulipifera	Tulip tree	X				
Sassafras albidum	Sassafras	X				
Lindera benzoin	Spicebush	X			X	
Caltha palustris	Marsh marigold				X	
Actaea pachypoda	White baneberry	X				
Anemone quinquefolia	Wood anemone	X				
Hepatica americana	Hepatica	X				
Podophyllum peltatum	Mayapple	X				
Sanguinaria canadensis	Bloodroot	X				
Liquidamber styraciflua	Sweet gum				X	
Platanus occidentalis	Sycamore				X	
Ulmus americana	Americam elm	X				
Gaylussacia baccata	Black Huckleberry	X				
Pilea pumila	Clearweed			X	X	
Laportea canadensis	Wood nettle		X			
Junglans nigra	Black walnut	X				
Carya ovata	Shagbark hickory	X				
Cara cordiformis	Bitternut hickory	X				
Cara glabra	Pignut hickory	X				
Myrica paensylvanica	Bayberry					X
Fagus grandifolia	American beech	X				
Quercus alba	White oak	X				
Quercus prinus	Chestnut oak	X				
Quercus bicolor	Swamp white oak				X	
Quercus palustris	Pin oak	X			X	
Quercus coccinea	Scarlet oak	X				
Quarcus rubra	Red oak	X				
Quarcus velutina	Black oak	X				
Betula populifolia	Gray birch		X			
Betula nigra	River birch				X	
Betula lenta	Black birch	X				
Betula alleghaniensis	Yellow birch	X				
Carpinus caroliniana	Ironwood	X			X	
Alnus serrulata	Smooth alder			X	X	
Salicornia europaea	Slender glasswort					X
Salicornia virginica	Woody glasswort					X
Suaeda linearis	Tall sea-blite					X
Suaeda maritima	Low sea-blite					X
Claytonia virginica	Spring beauty		X	X		
Polygonum punctatum	Dotted smartweed			X		
Polygonum hydropiper	Water pepper			X		
Polygonum sagittatum	Arrow-leaved tearthumb			X		
Kosteletzkya virginica	Seaside mallow					X
Viola sororia	Common blue violet	X				
Populus grandidentata	Big-toothed aspen		X			
Populus tremuloides	Trembling aspen		X			
Salix nigra	Black willow				X	
Salix discolor	Pussy willow				X	
Barbarea vulgaris	Wintercress				X	
Alliaria petiolata	Garlic mustard	X				
Rhododendron periclymenoides	Pinkster flower	X				
Rhododendron viscosum	Swamp azalea				X	
Kalmia angustifolia	Sheep laural	X				
Kalmia latifolia	Mountain laural	X				

Table 1

PLANT COMMUNITIES TYPICAL OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Spiraea tomentosa	Meadowsweet			X		
Rubus occidentalis	Black raspberry		X			
Rubus allegheniensis	Allegheny raspberry		X			
Rosa multiflora	Multiflora rose		X			
Rosa palustris	Swamp rose			X		
Prunus pensylvanica	Fire cherry		X			
Prunus serotina	Wild black cherry	X	X			
Elaeagnus umbellata	Autumn olive		X			
Decodon verticillatus	Swamp loosestrife			X		
Cornus florida	Flowering dogwood	X				
Cornus amomum	Silky dogwood				X	
Cornus stolonifera	Red osier dogwood		X	X		
Nyssa sylvatica	Sour gum				X	
Lythrum salicaria	Purple loosestrife			X		
Parthenocissus quinquefolia	Virginia creeper					
Acer saccharum	Sugar maple	X				
Acer rubrum	Red maple	X			X	
Acer saccharium	Silver maple	X			X	
Acer negundo	Box elder		X	X		
Toxicodendron radicans	Poison ivy	X	X		X	
Rhus typhina	Staghorn sumac		X			
Rhus glabra	Smooth sumac		X			
Rhus copalina	Winged sumac		X			
Impatiens capensis	Jewelweed			X	X	
Daucus carota	Wild carrot		X			
Asclepias incarnata	Swamp milkweed			X		
Asclepias syriaca	Common milkweed	X	X			
Hackelia virginiana	Virginia stickseed	X				
Lycopus americanus	Cut-leaved water-horehound			X		
Monarda fistulosa	Wild bergamont		X			
Fraxinus americana	White ash	X			X	
Verbascum thapsus	Common mullein		X			
Linaria vulgaris	Butter-and -eggs		X			
Cephalanthus occidentalis	Buttonbush			X	X	
Lonicera japonica	Japanese honeysuckle	X	X		X	
Viburnum dentatum	Arrowwood	X			X	
Viburnum acerifolium	Maple-leaved viburnum	X			X	
Viburnum lentago	Nannyberry				X	
Sambucus canadensis	Common elder			X	X	
Bidens spp.	Tickseed sunflower			X		
Iva frutescens	Marsh elder					X
Ambrosia artemisiifolia	Common ragweed		X			
Chrysanthemum leucanthemum	Ox-eyed daisy		X			
Solidago sempervirens	Seaside goldenrod					
Solidago caesia	Blue-stemed goldenrod	X				
Solidago rugosa	Rough-stemed goldenrod		X			
Solidago odora	Sweet goldenrod		X			
Solidago canadensis	Canada goldenrod		X			
Euthamia graminifolia	Grass-leaved goldenrod		X			
Aster divaricatus	White wood aster	X				
Aster tenuifolius	Perennial salt marsh aster					X
Conyza canadensis	Horseweed		X			
Baccharis halimifolia	Groundsel bush					X
Pluchea odorata	Slat marsh fleabane					X
Eupatorium perfoliatum	Boneset			X		
Cirsium arvense	Canada thistle		X			
Hieracium caespitosum	Hawkweed		X			
Sagittaria latifolia	Broad-leaved arrowhead			X		
Acorus calamus	Sweet flag			X		
Symplocarpus foetidus	Skunk cabbage				X	
Arisaema triphyllum	Jack-in-the-pulpit	X			X	
Peltandra virginica	Arrow arum			X		
Juncus effusus	Soft rush			X		
Eleocharis spp.	Spike rush			X		
Eleocharis rostellata	Beaked spike rush					X
Carex stricta	Tussock sedge			X	X	
Leersia oryzoides	Rice cutgrass			X		
Poa pratensis	Kentucky bluegrass		X			
Dactylis glomerata	Orchard grass		X			
Glyceria striata	Manna grass			X		

Table 1

PLANT COMMUNITIES TYPICAL OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Phalaris arundinacea	Reed canary grass			X		
Anthoxanthum odoratum	Sweet vernal grass		X			
Calmagrostis canadensis	Blue joint			X	X	
Cinna arundinacea	Wood reed		X		X	
Phleum pratense	Timothy		X			
Phragmites australis	Common reed		X	X		X
Distichlis spicata	Spike grass					X
Spartina alterniflora	Salt marsh cordgrass					X
Spartina patens	Salt-meadow grass					X
Echinochloa walteri	Salt marsh cockspur grass					X
Setaria faberi	Nodding foxtail		X			
Setaria glauca	Yellow foxtail		X			
Digitaria sanguinalis	Crabgrass		X			
Sparganium spp.	Bur-reed			X		
Typha latifolia	Broad leaved cattail			X		
Typha angustifolia	Narrow leaved cattail			X		
Pontederia cordata	Pickerelweed			X		
Erythronium americanum	Trout lily				X	
Polygonatum biflorum	Solomon's seal	X				
Polygonatum pubescens	Hairy solomon's seal	X				
Iris versicolor	Blue flag iris			X		
Iris pseudacorus	Yellow marsh iris			X		

TABLE 2
AMPHIBIANS OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Scientific Name	Common	Uplands	Wetlands
Bufo terrestris americanus	American toad	x	x
Bufo woodhousei fowleri	Fowler's toad	x	x
Pseudacris crusifer	Northern spring peeper		x
Pseudacris triseriata kalmi	Chorus frog	x	x
Hyla versicolor	Northern gray treefrog		x
Acris crepitans	Northern cricket frog		x
Rana catesbeina	Bullfrog		x
Rana palustris	Pickerel frog	x	x
Rana pipiens	Northern leopard frog	x	x
Diemictylus viridescens	Red-spotted newt		x
Desmognathus fuscus	Northern Dusky salamander		x
Plethodon cinereus	Red-backed salamander	x	x
Plethodon glutinosus	Slimy salamander	x	x
Eurycea bislineata	Northern two-lined salamander		x

Source: New Jersey Nature News
New Jersey Audubon Society 3-63

TABLE 3
REPITLES OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Scientific Name	Common	Uplands	Wetlands
Thamnophis sirtalis	Eastern garter snake	x	
Lampropeltis triangulum	Eastern milk snake	x	
Thamnophis sauritus	Eastern ribbon snake		x
Coluber constrictor	Northern black racer	x	
Storeria dekayi	Northern brown snake	x	
Diadophus punctatus edwardii	Northern ring-necked snake	x	
Nerodia sipedon	Northern water snake		x
Elaphe obsoleta	Black rat snake	x	
Opheodrys vernalis	Smooth green snake	x	
Sternotherus odoratus	Common musk turtle		x
Kinosternon subrubrum	Eastern mud turtle		x
Chelydra serpentina	Snapping turtle		x
Terrapene carolina	Eastern box turtle	x	
Clemmys muhlenbergii	Bog turtle		x
Clemmys insculpta	Wood turtle	x	x
Chrysemys picta	Eastern painted turtle		x

TABLE 4
BIRDS OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Name	Occurrence[1]	Seasonality[2]
Common Loon	R	M
Pied-billed Grebe	C	PR
Double Crested Cormorant	U	PR
Great Blue Heron	U	SR
Green-backed Heron	C	PR *
Little Blue Heron	C	PR *
Green Heron	U	SR
Cattle Egret	C	PR *
Egret Great	U	SR
Glossy Ibis	C	SR
Black-Crowned Night Heron	R	SR
Yellow-Crowned Night Heron	R	SR
Least Bittern	U	SR
American Bittern	U	SR
Mute Swan	C	PR
Whistling Swan	R	M
Canada Goose	AB	PR
Snow Goose	R	M
Brant	R	M
Mallard	AB	PR
Black Duck	U	WR
Gadwall	R	WR
Pintail	R	M
Green-winged Teal	C	M
Blue-winged Teal	C	SR
Shoveler	C	M
Wood Duck	R	SR
Ring-necked Duck	R	M
Canvasback	R	M
Lesser Scaup	X	-
Greater Scaup	R	M
American Wigion	C	M
Common Goldeneye	X	-
Bufflehead	X	-
Ruddy Duck	R	M
Hooded Merganser	R	M
Common Merganser	R	M
Turkey Vulture	C	PR
Shartp-shinned Hawk	U	M
Cooper's Hawk	R	M
Red-tailed Hawk	C	PR
Red-shouldered Hawk	R	M
Broad-winged Hawk	U	SR
Rough-legged Hawk	R	WR
Bald Eagle	R	M
Marsh Hawk	U	M

TABLE 4
BIRDS OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Name	Occurrence[1]	Seasonality[2]
Osprey	U	M
Peregrine Falcon	R	M
Sparrow Hawk	C	PR
Ruffed Grouse	U	PR
Bobwhite	U	PR
Ring-necked Pheasant	C	PR
Virginia Rail	R	SR
Clapper Rail	R	PR
Sora	R	SR
American Coot	C	PR
Common Moorhen	C	PR
Black-bellied Plover	C	M
Semi-palmated Plover	C	M
Killdeer	U	SR
American Woodcock	U	SR
Common Snipe	U	SR
Spotted Sandpiper	C	SR
Solitary Sandpiper	C	M
Dunlin	C	M
Greater Yellowlegs	C	M
Lesser Yellowlegs	C	M
Iceland Gull	C	PR
Herring Gull	C	PR
Laughing Gull	C	PR
Ring-billed Gull	C	SR
Black-backed Gull	C	PR
Common Tern	U	SR
Least Tern	C	SR
Rock Dove	AB	PR
Mourning Dove	AB	PR
Yellow-billed Cuckoo	R	SR
Black-billed Cuckoo	R	SP
Barn Owl	R	PR
Screech Owl	R	PR
Great Horned Owl	R	PR
Barred Owl	R	PR
Long-eared Owl	R	WR
Common Nighthawk	C	M
Chimney Swift	C	M
Ruby-throated Hummingbird	C	M
Belted Kingfisher	C	PR
Flicker Common	AB	SR
Yellow-bellied Sapsucker	U	M
Hairy Woodpecker	C	PR
Downy Woodpecker	C	PR
Eastern Kingbird	C	SR
Great Crested Flycatcher	R	SR

TABLE 4
BIRDS OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Name	Occurrence[1]	Seasonality[2]
Eastern Phoebe	U	SR
Yellow-bellied Flycatcher	R	M
Willow Flycatcher	R	SR
Least Flycatcher	R	SR
Horned Lark	R	WR
Tree Swallow	C	SR
Bank Swallow	U	SR
Rough-winged Swallow	U	SR
Barn Swallow	C	SR
Purple Martin	U	SP
Blue Jay	AB	PR
Common Crow	AB	PR
Fish Crow	AB	M
Black-capped Chickadee	AB	PR
Tufted Titmouse	AB	PR
White-breasted Nuthatch	U	PR
Red-breasted Nuthatch	U	WR
Brown Creeper	U	PR
House Wren	U	SR
Winter Wren	U	M
Carolina Wren	U	PR
Long-billed Marsh Wren	C	SR
Mockingbird	C	PR
Catbird	C	SR
Brown Thrasher	C	SR
Robin	AB	SR
Wood Thrush	AB	SR
Hermit Thrush	C	M
Veery	U	SR
Blue-Gray Gnatcatcher	U	SR
Golden-crowned Kinglet	U	M
Ruby-crowned Kinglet	C	M
Water Pipit	U	M
Cedar Waxwing	U	SR
Starling	AB	PR
White-eyed Vireo	U	SR
Yellow-throated Vireo	U	SR
Solitary Vireo	U	M
Red-eyed Vireo	C	SR
Warbling Vireo	U	SR
Black & White Warbler	C	SR
Tennessee Warbler	U	M
Orange-crowned Warbler	U	M
Nashville Warbler	U	M
Parula Warbler	U	M
Yellow Warbler	U	SR
Magnolia Warbler	U	M

TABLE 4
BIRDS OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Name	Occurrence[1]	Seasonality[2]
Cape May Warbler	U	M
Black-throated Blue Warbler	U	M
Warbler Yellow Rumped	U	M
Black-throated Green Warbler	U	M
Chestnut-sided Warbler	U	SR
Bay-breasted Warbler	U	M
Blackpoll Warbler	C	M
Prairie Warbler	U	SR
Palm Warbler	C	M
Ovenbird	C	SR
Northern Waterthrush	U	M
Louisiana Waterthrush	U	SR
Connecticut Warbler	R	M
Yellowthroat	C	SR
Hooded Warbler	U	M
House Sparrow	AB	PR
Red-winged Blackbird	C	SR
Baltimore Oriole	C	SR
Rusty Blackbird	U	M
Common Grackle	AB	SR
Brown-headed Cowbird	C	SR
Scarlet Tanager	U	SR
Cardinal	AB	PR
Rose-breasted Grosbeak	U	SR
Indigo Bunting	U	SR
Purple Finch	C	PR
House Finch	AB	PR
Pine Siskin	R	WR
American Goldfinch	C	PR
Rufous-sided Towhee	C	SR
Savannah Sparrow	C	M
Dark-eyed Junco	C	WR
Tree Sparrow	C	WR
Chipping Sparrow	C	SR
Seaside Sparrow	U	M
Field Sparrow	C	PR
White-crowned Sparrow	U	M
White-throated Sparrow	AB	WR
Fox Sparrow	U	M
Lincoln's Sparrow	U	M
Swamp Sparrow	C	SR
Song Sparrow	C	PR
Snow Bunting	U	M

[1]OCCURRENCE

AB - Abundant - hard to miss in season.

TABLE 4
BIRDS OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Name	Occurrence[1]	Seasonality[2]

C - Common - easy to find almost any day in season.
U - Uncommon - probably can be found on most days in season.
R - Rare - probably cannot be found on a given day, even in season.

[2]SEASONALITY

PR - Permanent Resident - some individuals present all year.
WR - Winter Resident - in our area during this season only
SR - Summer Resident - probably breeds in our area.
M - Migrant - is in our area only during spring and fall.
- - Unknown

TABLE 4
BIRDS OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Name	Occurrence[1]	Seasonality[2]
Common Loon	R	M
Pied-billed Grebe	C	PR
Double Crested Cormorant	U	PR
Great Blue Heron	U	SR
Green-backed Heron	C	PR *
Little Blue Heron	C	PR *
Green Heron	U	SR
Cattle Egret	C	PR *
Egret Great	U	SR
Glossy Ibis	C	SR
Black-Crowned Night Heron	R	SR
Yellow-Crowned Night Heron	R	SR
Least Bittern	U	SR
American Bittern	U	SR
Mute Swan	C	PR
Whistling Swan	R	M
Canada Goose	AB	PR
Snow Goose	R	M
Brant	R	M
Mallard	AB	PR
Black Duck	U	WR
Gadwall	R	WR
Pintail	R	M
Green-winged Teal	C	M
Blue-winged Teal	C	SR
Shoveler	C	M
Wood Duck	R	SR
Ring-necked Duck	R	M
Canvasback	R	M
Lesser Scaup	X	-
Greater Scaup	R	M
American Wigion	C	M
Common Goldeneye	X	-
Bufflehead	X	-
Ruddy Duck	R	M
Hooded Merganser	R	M
Common Merganser	R	M
Turkey Vulture	C	PR
Shartp-shinned Hawk	U	M
Cooper's Hawk	R	M
Red-tailed Hawk	C	PR
Red-shouldered Hawk	R	M
Broad-winged Hawk	U	SR
Rough-legged Hawk	R	WR
Bald Eagle	R	M
Marsh Hawk	U	M

TABLE 4
BIRDS OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Name	Occurrence[1]	Seasonality[2]
Osprey	U	M
Peregrine Falcon	R	M
Sparrow Hawk	C	PR
Ruffed Grouse	U	PR
Bobwhite	U	PR
Ring-necked Pheasant	C	PR
Virginia Rail	R	SR
Clapper Rail	R	PR
Sora	R	SR
American Coot	C	PR
Common Moorhen	C	PR
Black-bellied Plover	C	M
Semi-palmated Plover	C	M
Killdeer	U	SR
American Woodcock	U	SR
Common Snipe	U	SR
Spotted Sandpiper	C	SR
Solitary Sandpiper	C	M
Dunlin	C	M
Greater Yellowlegs	C	M
Lesser Yellowlegs	C	M
Iceland Gull	C	PR
Herring Gull	C	PR
Laughing Gull	C	PR
Ring-billed Gull	C	SR
Black-backed Gull	C	PR
Common Tern	U	SR
Least Tern	C	SR
Rock Dove	AB	PR
Mourning Dove	AB	PR
Yellow-billed Cuckoo	R	SR
Black-billed Cuckoo	R	SP
Barn Owl	R	PR
Screech Owl	R	PR
Great Horned Owl	R	PR
Barred Owl	R	PR
Long-eared Owl	R	WR
Common Nighthawk	C	M
Chimney Swift	C	M
Ruby-throated Hummingbird	C	M
Belted Kingfisher	C	PR
Flicker Common	AB	SR
Yellow-bellied Sapsucker	U	M
Hairy Woodpecker	C	PR
Downy Woodpecker	C	PR
Eastern Kingbird	C	SR
Great Crested Flycatcher	R	SR

TABLE 4
BIRDS OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Name	Occurrence[1]	Seasonality[2]
Eastern Phoebe	U	SR
Yellow-bellied Flycatcher	R	M
Willow Flycatcher	R	SR
Least Flycatcher	R	SR
Horned Lark	R	WR
Tree Swallow	C	SR
Bank Swallow	U	SR
Rough-winged Swallow	U	SR
Barn Swallow	C	SR
Purple Martin	U	SP
Blue Jay	AB	PR
Common Crow	AB	PR
Fish Crow	AB	M
Black-capped Chickadee	AB	PR
Tufted Titmouse	AB	PR
White-breasted Nuthatch	U	PR
Red-breasted Nuthatch	U	WR
Brown Creeper	U	PR
House Wren	U	SR
Winter Wren	U	M
Carolina Wren	U	PR
Long-billed Marsh Wren	C	SR
Mockingbird	C	PR
Catbird	C	SR
Brown Thrasher	C	SR
Robin	AB	SR
Wood Thrush	AB	SR
Hermit Thrush	C	M
Veery	U	SR
Blue-Gray Gnatcatcher	U	SR
Golden-crowned Kinglet	U	M
Ruby-crowned Kinglet	C	M
Water Pipit	U	M
Cedar Waxwing	U	SR
Starling	AB	PR
White-eyed Vireo	U	SR
Yellow-throated Vireo	U	SR
Solitary Vireo	U	M
Red-eyed Vireo	C	SR
Warbling Vireo	U	SR
Black & White Warbler	C	SR
Tennessee Warbler	U	M
Orange-crowned Warbler	U	M
Nashville Warbler	U	M
Parula Warbler	U	M
Yellow Warbler	U	SR
Magnolia Warbler	U	M

TABLE 4
BIRDS OF THE CITY OF RAHWAY
UNION COUNTY, NEW JERSEY

Name	Occurrence[1]	Seasonality[2]
Cape May Warbler	U	M
Black-throated Blue Warbler	U	M
Warbler Yellow Rumped	U	M
Black-throated Green Warbler	U	M
Chestnut-sided Warbler	U	SR
Bay-breasted Warbler	U	M
Blackpoll Warbler	C	M
Prairie Warbler	U	SR
Palm Warbler	C	M
Ovenbird	C	SR
Northern Waterthrush	U	M
Louisiana Waterthrush	U	SR
Connecticut Warbler	R	M
Yellowthroat	C	SR
Hooded Warbler	U	M
House Sparrow	AB	PR
Red-winged Blackbird	C	SR
Baltimore Oriole	C	SR
Rusty Blackbird	U	M
Common Grackle	AB	SR
Brown-headed Cowbird	C	SR
Scarlet Tanager	U	SR
Cardinal	AB	PR
Rose-breasted Grosbeak	U	SR
Indigo Bunting	U	SR
Purple Finch	C	PR
House Finch	AB	PR
Pine Siskin	R	WR
American Goldfinch	C	PR
Rufous-sided Towhee	C	SR
Savannah Sparrow	C	M
Dark-eyed Junco	C	WR
Tree Sparrow	C	WR
Chipping Sparrow	C	SR
Seaside Sparrow	U	M
Field Sparrow	C	PR
White-crowned Sparrow	U	M
White-throated Sparrow	AB	WR
Fox Sparrow	U	M
Lincoln's Sparrow	U	M
Swamp Sparrow	C	SR
Song Sparrow	C	PR
Snow Bunting	U	M

Occurrence (1)

AB - Abundant - hard to miss in season.
C - Common - easy to find almost any day in season.
U - Uncommon - probably can be found on most days in season.
R - Rare - probably cannot be found on a given day, even in season.

Seasonality (2)

PR - Permanent Resident - some individuals present all year.
WR - Winter Resident - in our area during this season only.
SR - Summer Resident - probably breeds in our area.
M - Migrant - is in our area only during sprinf and fall.
- - Unkown

TABLE 5
Mammals of the City of Rahway
Union County, New Jersey

Scientific Name	Common Name	Frequency of Encounter	Upland	Old Field	Wetlands
Didelphis virginiana	Opossum	common	X	X	-
Sorex cinereus	Masked shrew	rare	X	X	X
Hlaring breviczuda	Short-tailed shrew	rare	X	X	X
Cryptotis parva	Least Shrew	rare	-	X	-
Scalopus aquatious	Eastern mole	occasional	X	X	X
Condylura cristata	Star-nose mole	rare	X	X	X
Myotis lucifugus	Little brown bat	rare	X	X	-
Myotis keani	Keen Bat	rare	X	X	X
Myotis sodalis	Indiana Bat	rare	X	X	X
Myotis leibii	Small-footed Bat	rare	X	X	X
Lasionycteris noctivagans	Silver-haired bat	rare	X	X	X
Pipistrellus subflevus	Eastern Pipistrel Bat	rare	X	X	X
Eptesicus fuscus	Big brown bat	rare	X	X	X
Lasiurus borealus	Red bat	rare	X	X	X
Lasiurus cinereus	Hoary bat	rare	X	X	X
Sylvilagus floridanus	Cottontail	common	-	X	X
Tamias striatus	Chipmunk	common	X	X	-
Marmota monax	Woodchuck	common	X	X	-
Sciurus carolinensis	Gray Squirrel	common	X	-	-
Tamiasciurus hudsonicus	Red Squirrel	occasional	X	-	-
Gleucomys volans	Flying squirrel	occasional	X	-	-
Peromyscus leucopus	White-footed mouse	common	X	X	-
Peromyscus maniculatus	Deer mouse	common	X	X	
Neotoma floridana	Eastern Wood rat	rare	X	X	-
Clethrionomys gapperi	Red-backed vole	occasional	X	X	-
Microtus pennsylvanicus	Meadow vole	common	-	X	X
Microtus pinetorum	Woodland vole	occasional	X	-	-
Ondatra zibethicus	Muskrat	common	-	X	X
Zapus hudsonius	Jumping mouse	rare	-	X	X
Vulpes fulva	Red fox	rare	X	X	X
Procyon lotor	Raccoon	common	X	-	X
Mustela erminea	Short-tail weasel	rare	X	X	X
Mustela frenata	Long-tailed weasel	rare	X	X	X
Mephitis mephitis	Skunk	common	X	X	-
Odocoileus virginianus	White-tailed deer	common	X	X	X
Mus musculus	House mouse	occasional	X	X	-
Rattus norvegicus	Barn/Brown rat	occasional	X	X	-
Rattus rattus	Roof/black rat	occasional	X	X	-

Table 6

Summary of Vegetative Communities & Land Use For Properties Along The Rahway River Corridor

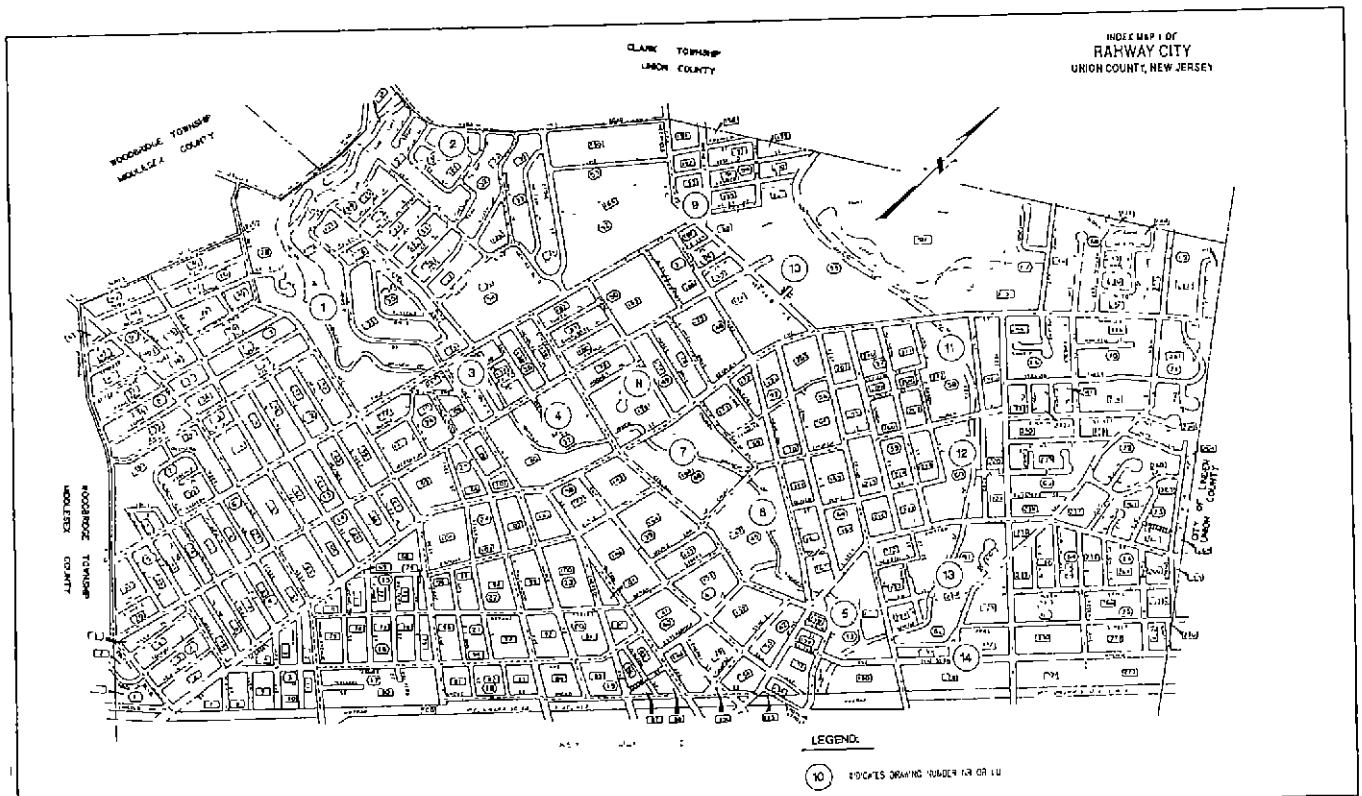
Robinson's Branch			
Block Number	**Lot Number**	**Vegetative Community[1]**	**Land Use[2]**
114	1,2,3,4,5,,6	ML, FW, VB	Res.
121	46,47	ML, FW, VB	Res.
136	9,10,11,12,23,24,26	ML, FW, VB	Res, Com, Pk
137	2,3,5,6,7,8,9,10,11,15,17,18	ML, FW, VB	Res, Com, Pk
140	1,2,8,13,14,19,20,21,22,23,24	ML, FW, VB	Res, Com, Pk
161	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15, 16,17,32,34,37,38,39	VB	Res,Com
162	2	VB	Res,Com
167	1,2,3,4,9,10,20,21,29,30,32,37,45	VB	Res,Com
168	4,5,6,7,8,9,10,11,12,13,14,15,16,22, 22.01,23,35,36,40,41,42,43,45,46	FU, VB	Res
178	3,4,5,30	ML, FU	Res, Pk
North Branch			
Block Number	**Lot Number**	**Vegetative Community[1]**	**Land Use[2]**
160	1,2,3,4,5,6,7,8,9,10,11,12	ML,VB	Res, Com, Pk
161	39,40	ML,VB	Res, Com, Pk
200	1	ML, VB, FW,	Pk
201	1,2,29	ML, VB, FW,	Pk
212	1,2	ML, FW, FU	Com, Pk
219	1,2,3,4,8,9,13,19	ML, FU, FW, VB	Res, Pk
224	12,14,15,16,17,18,21,23,26,27,32,33, 34,35,38,39,40,45,46,52,53,54, & an unmarked exempt lot	ML, FU, FW, VB	Res, Pk
305	1,2,4,5,8	VB	Res
319	7	VB	Com
321	1,2,12.02,13,14	VB	Res, Com
327	1,2	VB	Res, Com
328	7,8,9,10,11,12,13,14,15,16,17, 18,19,20,21,22	VB	Res, Com
500	16,17	VB	Com
	South Branch		
Block Number	**Lot Number**	**Vegetative Community[1]**	**Land Use[2]**
274	1,2	VB,FU	Ind, Com
276	1,2,3,4,5,6,7,8,10	VB	Ind, Com
277	9,10,17,18,22	FW, VB	Ind, Com
278	1,5,13,14,15.01,15.02,16,17	ML, FW	Com, Res
292	1,2,3.01,3.02,4,5,6,7,8,9,10,11,12,13, 14,15,16,17,18,19,20	ML, VB	Res, Ind
298	1,2,3,4,5,6,7,8,9,10,11,12,13,14, 15,16,17,18,19,20	VB	Res
	Rahway River		
Block Number	**Lot Number**	**Vegetative Community[1]**	**Land Use[2]**
303	1,3,4	TW, VB	Res
338	1,2,3,4,6,7,9,10	TW,VB	Ind, Res
339	1	TW,VB	Ind, Res
340	5	TW,VB	Ind, Res
341	1	TW,VB	Ind, Res
342	3,4	TW,VB	Ind, Res
343	2	TW,VB	Ind, Res
344	1	TW,VB	Ind, Res
345	1,2,3	TW,VB	Ind, Res

[1]Vegetative Community Codes

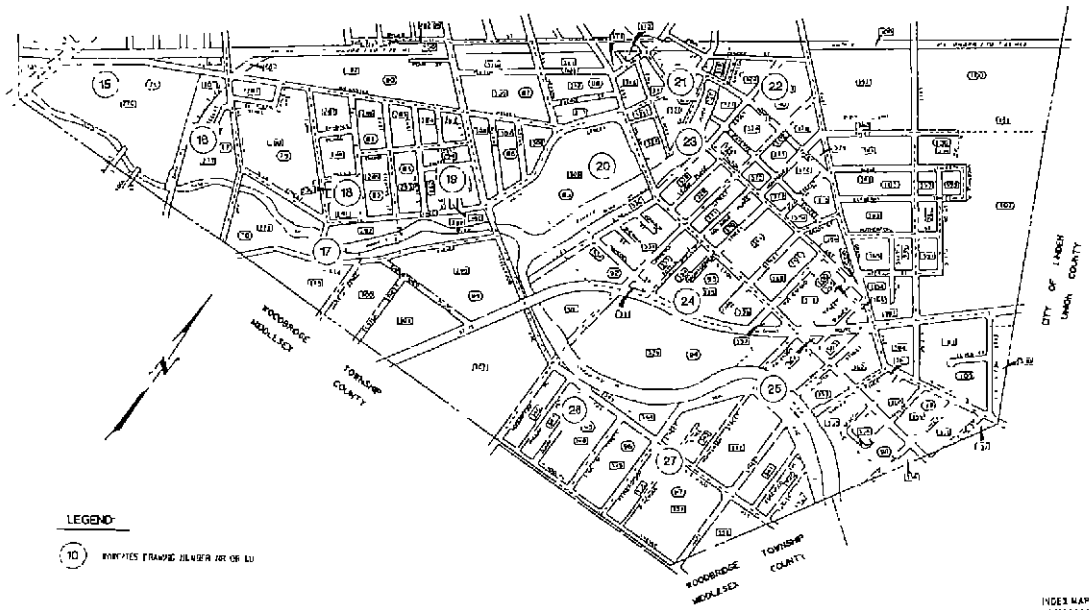
ML - Manicured Lawn; FW - Forested Wetland; VB - Vegetated Bank; FU - Forested Upland
FW-Forested Wetland
VB-Vegetated Bank
FU-Forested Upland
TW - Tidal Wetland

[2]Land Use Code

Res - Residential; Com. - Commercial; Ind. - Industrial; Pk - County or Township Park
Com-Commercial
Ind-Industrial
Pk-County or Township Park

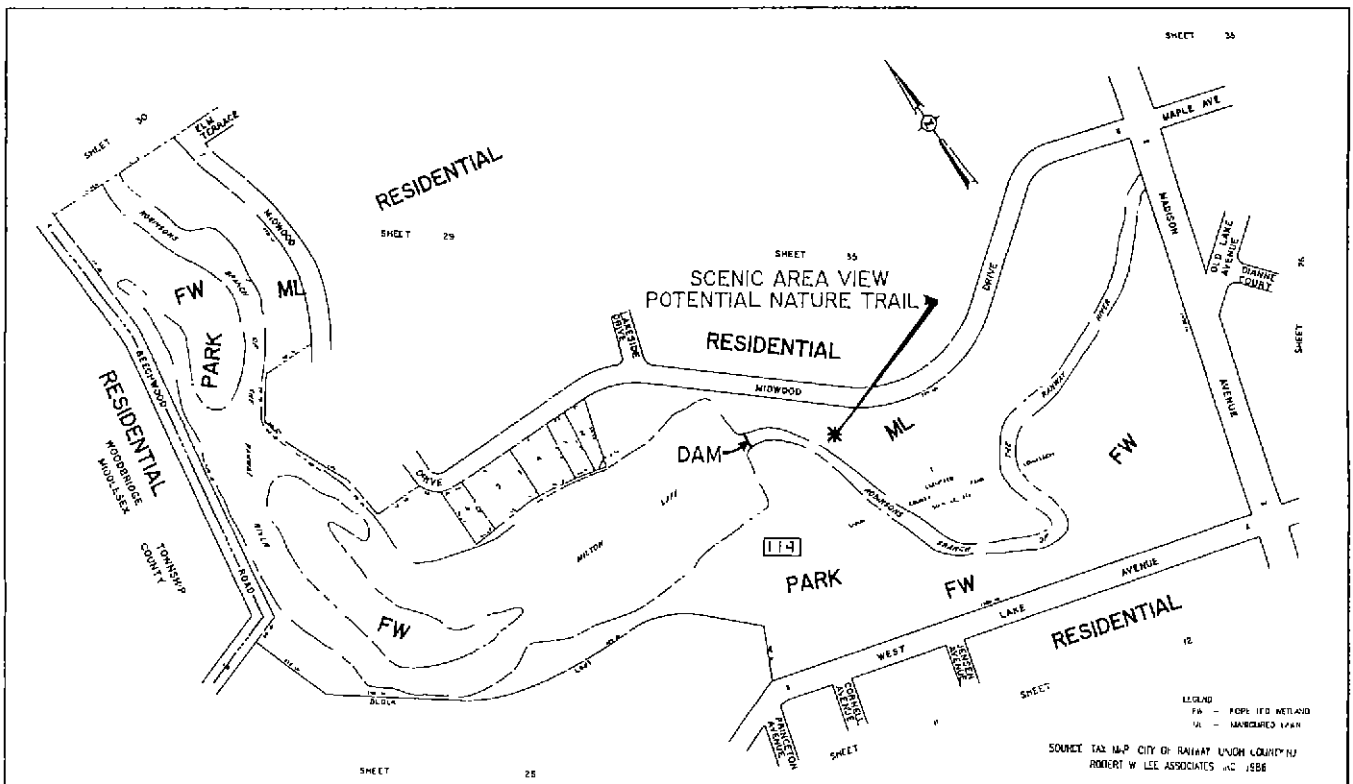


	CITY OF RAHWAY TAX MAP No	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY KEY MAP	SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No KEY 1

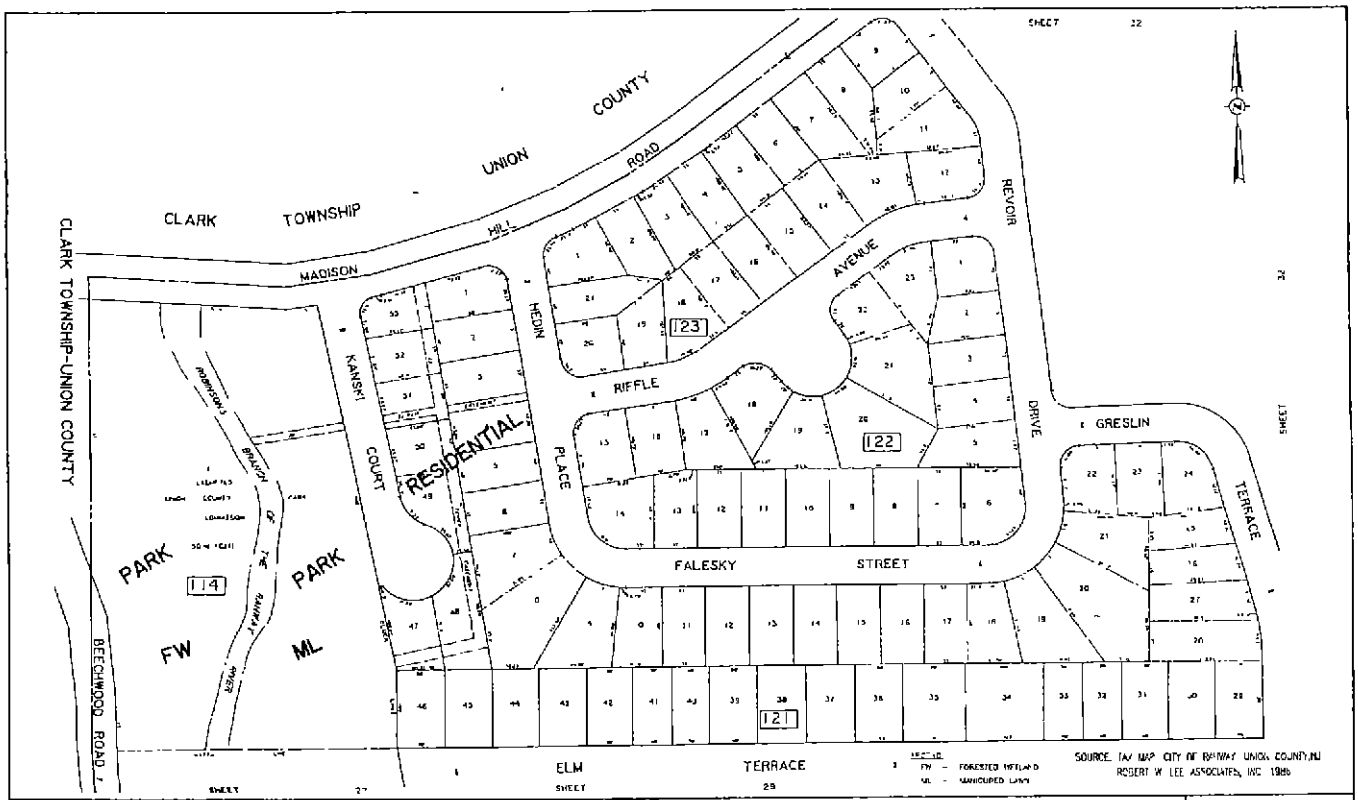


INDEX MAP OF
RAHWAY CITY
UNION COUNTY, NEW JERSEY

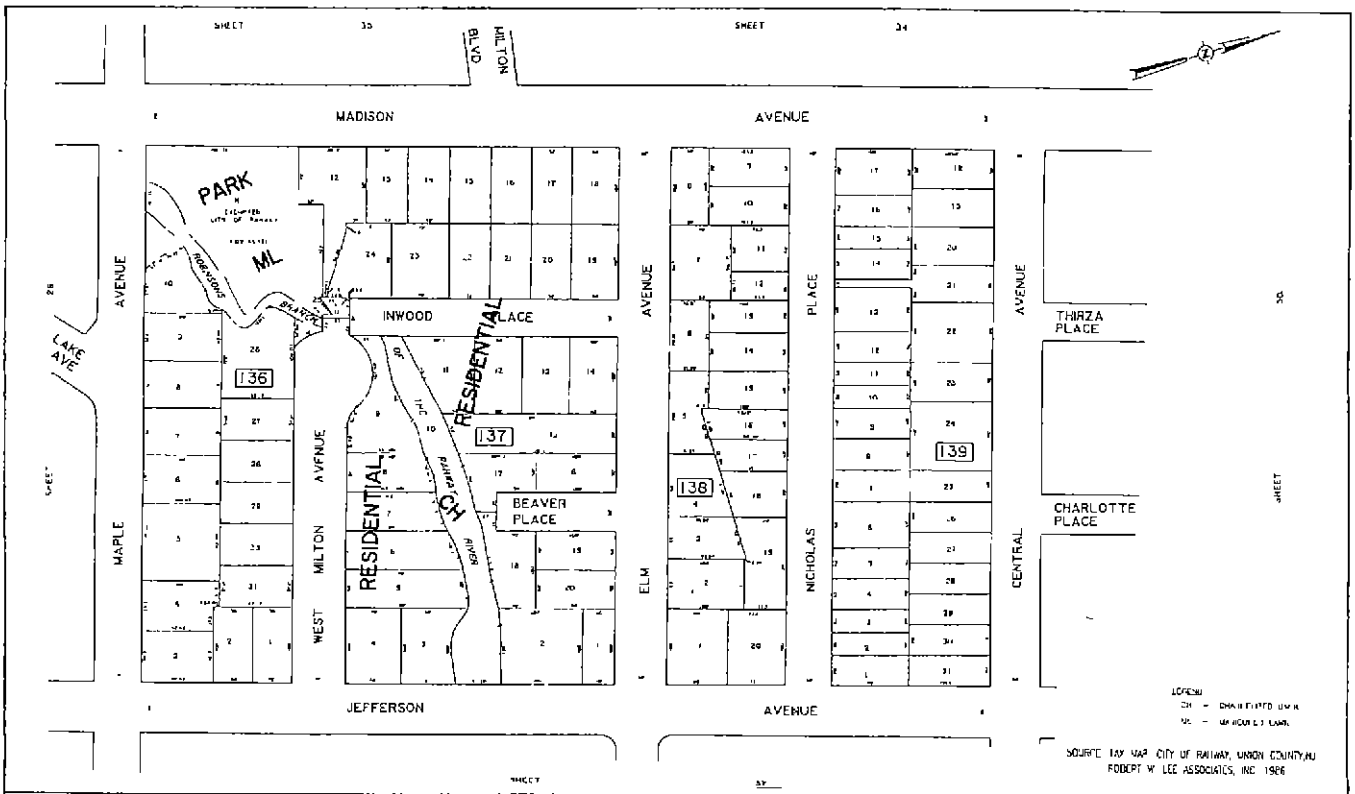
RAHWAY RIVER CORRIDOR STUDY KEY MAP	CITY OF RAHWAY TAX MAP No SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DATE JANUARY 199- DRAWING No KEY 2



	APPROX. SCALE 1" = 200'	CITY OF RAHWAY TAX MAP No 27	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No LU1

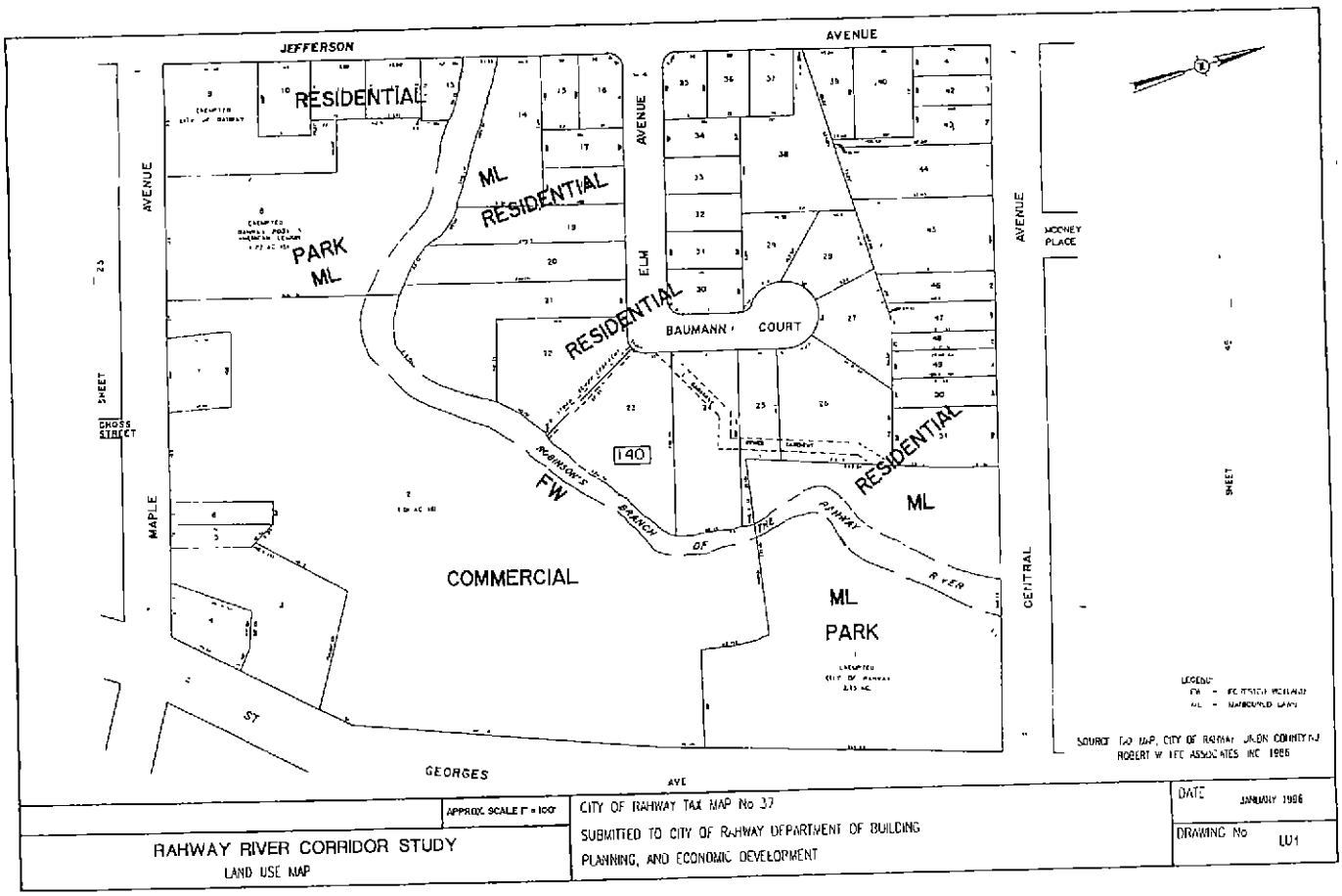


	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 30	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No LU2



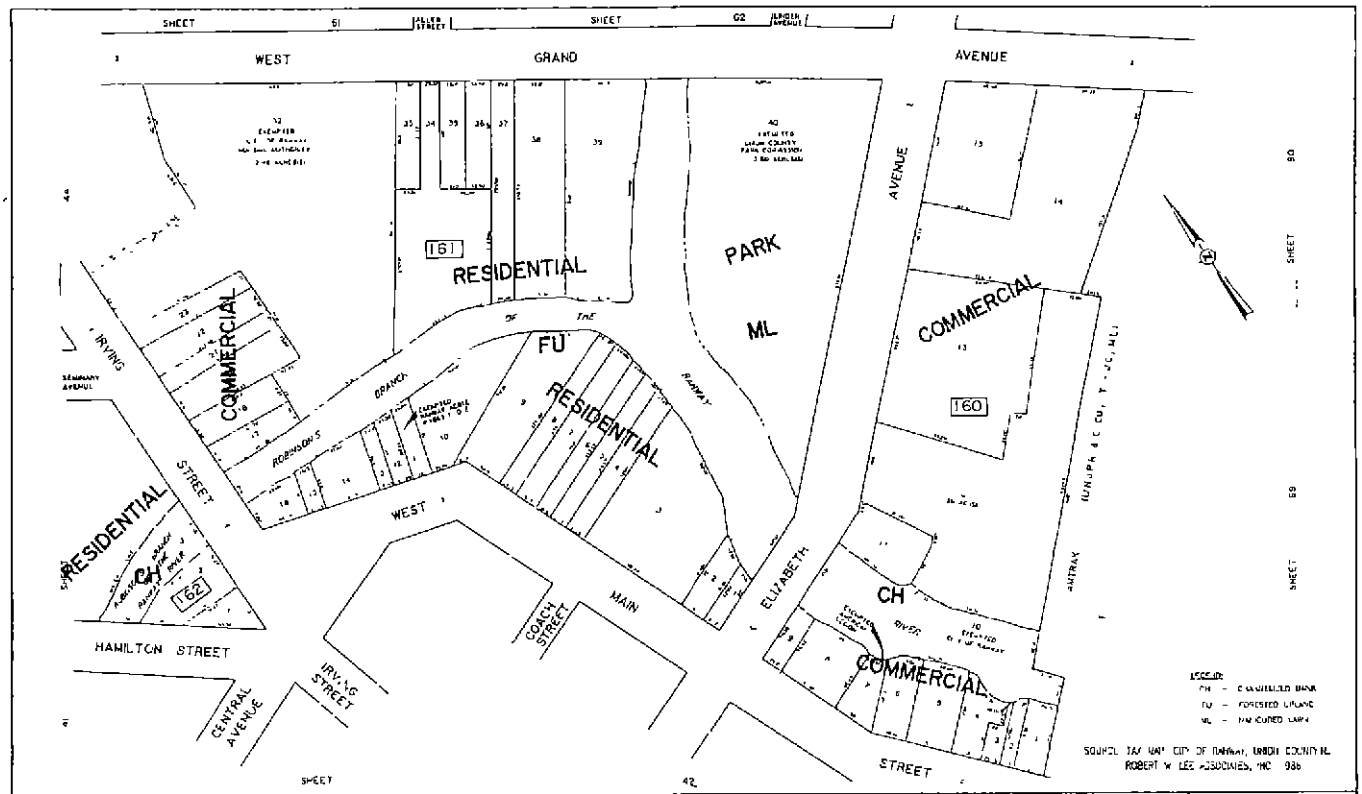
SOURCE TAX MAP CITY OF RAHWAY, UNION COUNTY, NJ
ROBERT W LEE ASSOCIATES, INC 1986

	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 36	DATE JANUARY 1986
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No LU3

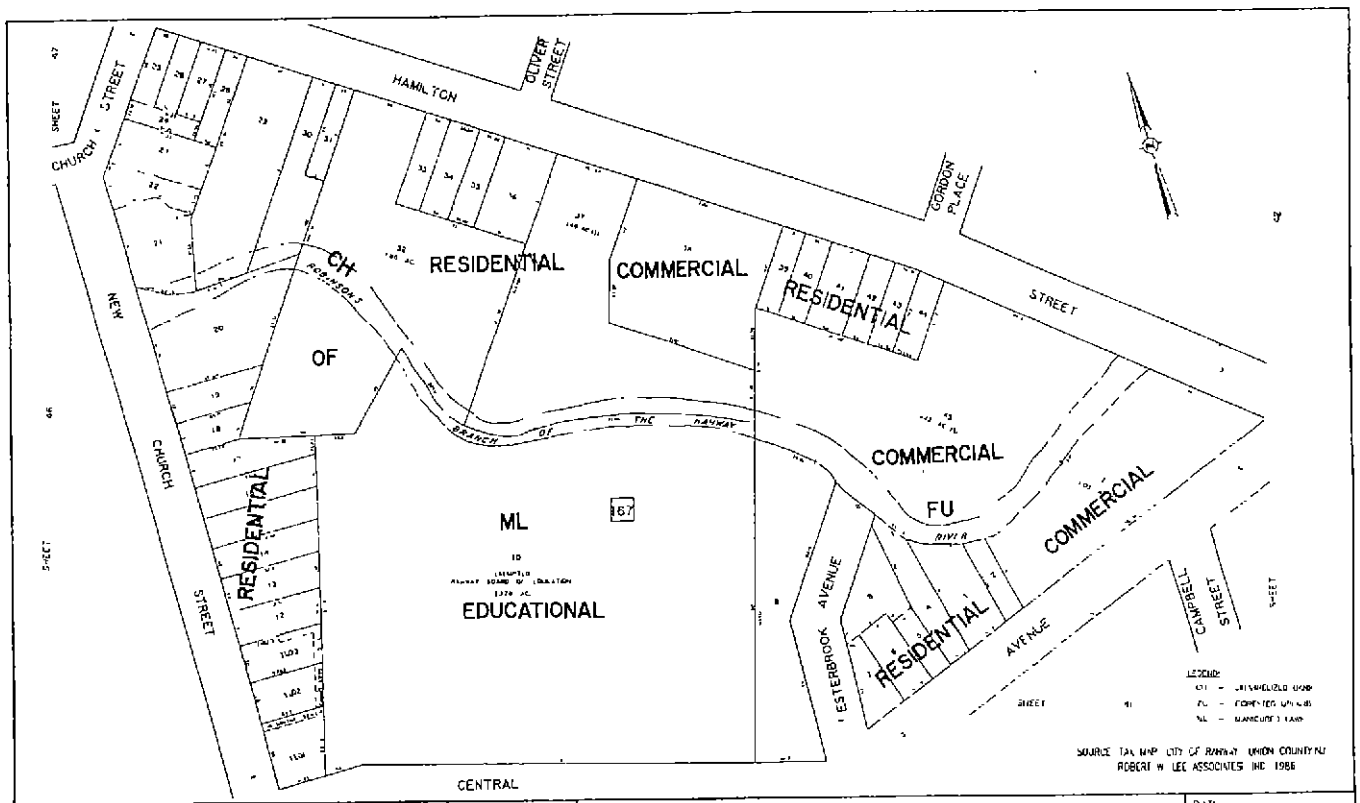


	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No. 37
RAHWAY RIVER CORRIDOR STUDY		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING
LAND USE MAP		PLANNING, AND ECONOMIC DEVELOPMENT

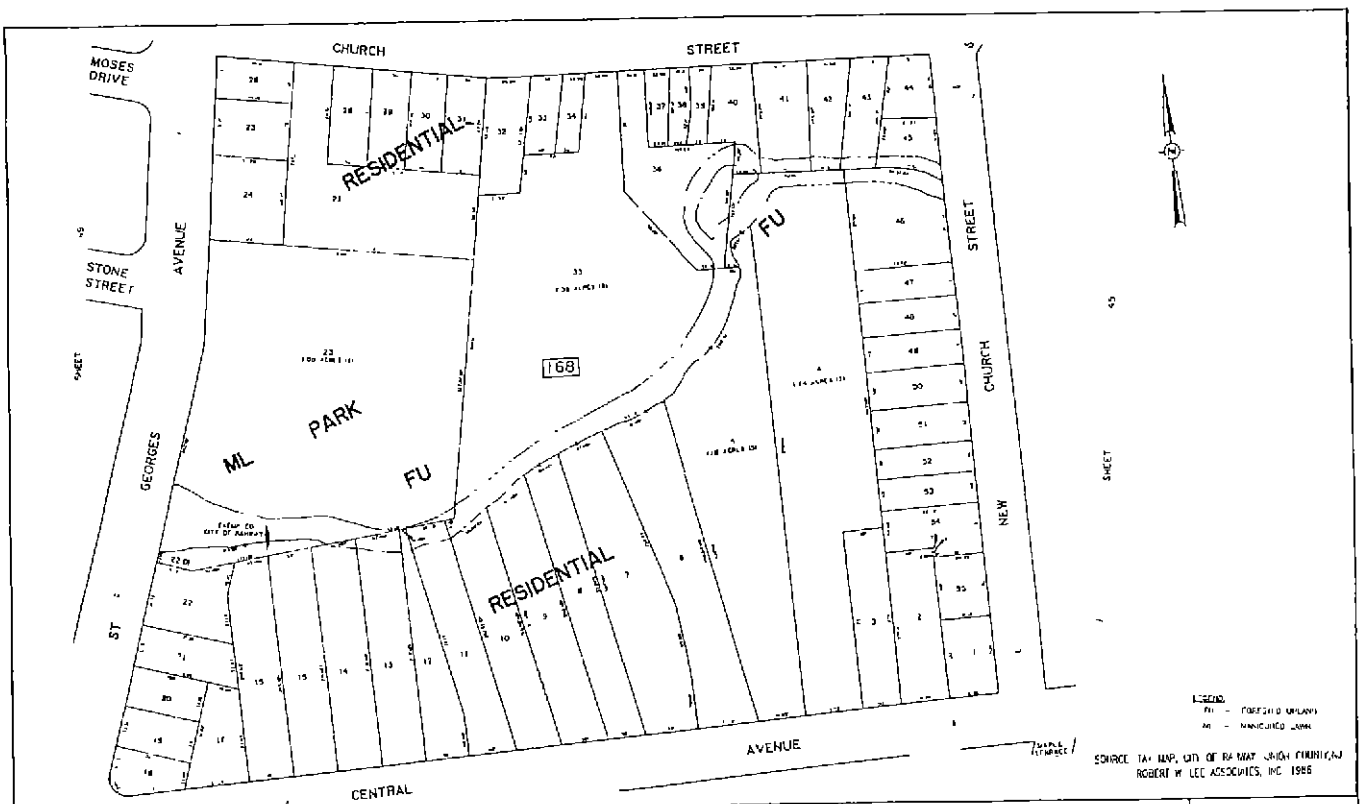
DATE	JANUARY 1986
DRAWING No.	LU1



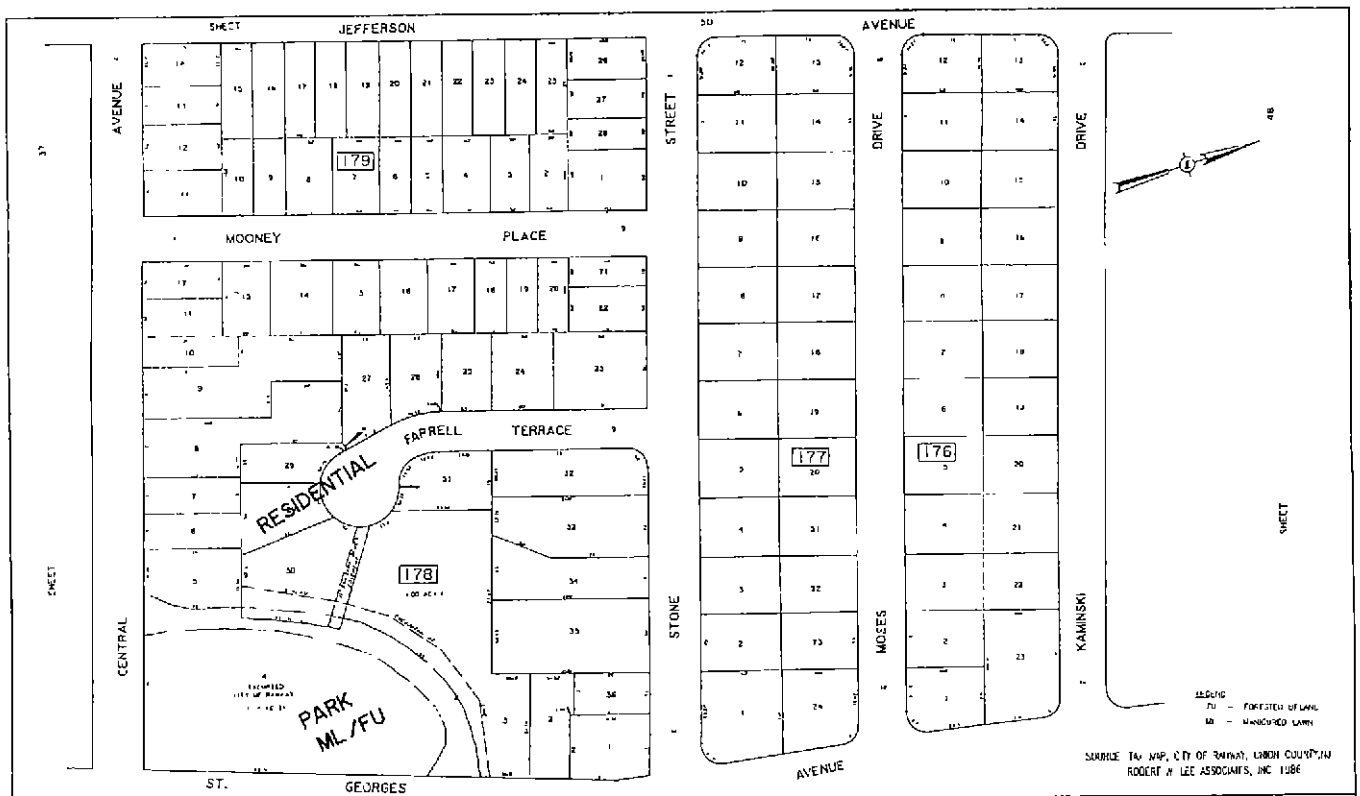
	APPROX. SCALE 1" = 200'	CITY OF RAHWAY TAX MAP No 45	DATE JANUARY 1986
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No LU5



APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 45	DATE JANUARY 1986
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP	SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No LU6



	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No. 46	DATE JANUARY 1986
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING AND ECONOMIC DEVELOPMENT	DRAWING No. LU7



APPROX. SCALE 1" = 100'

RAHWAY RIVER CORRIDOR STUDY

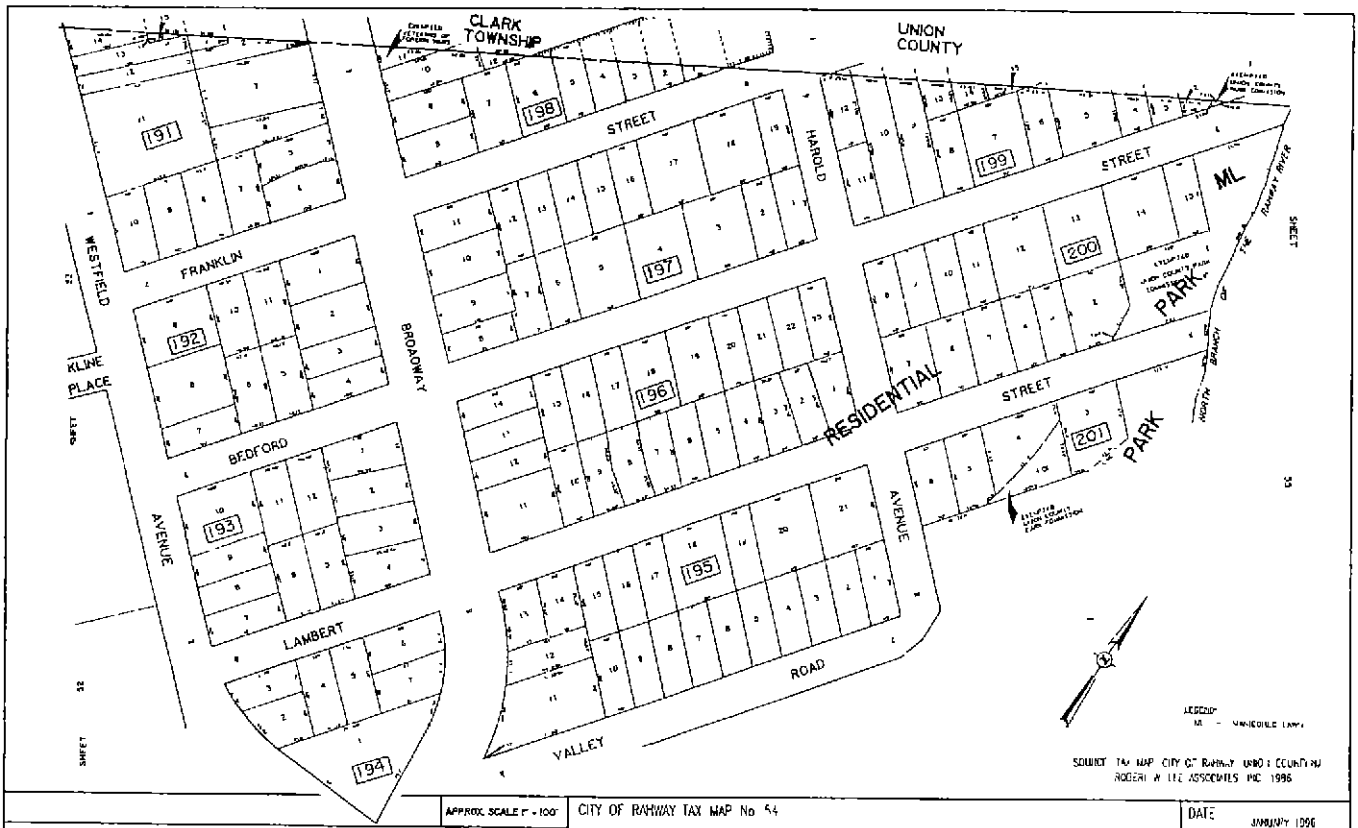
LAND USE MAP

CITY OF RAHWAY TAX MAP No 49

SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT

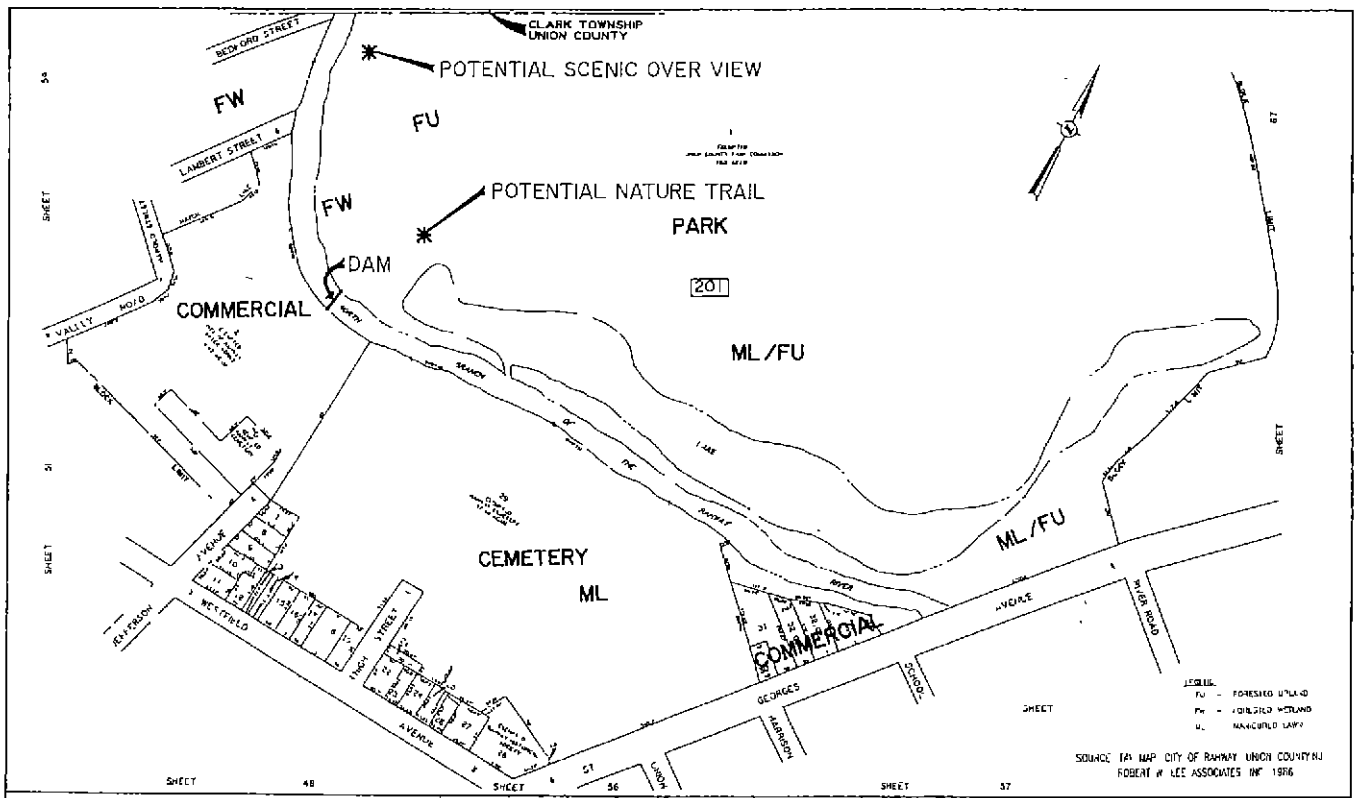
DATE JANUARY 1956

DRAWING No LUR

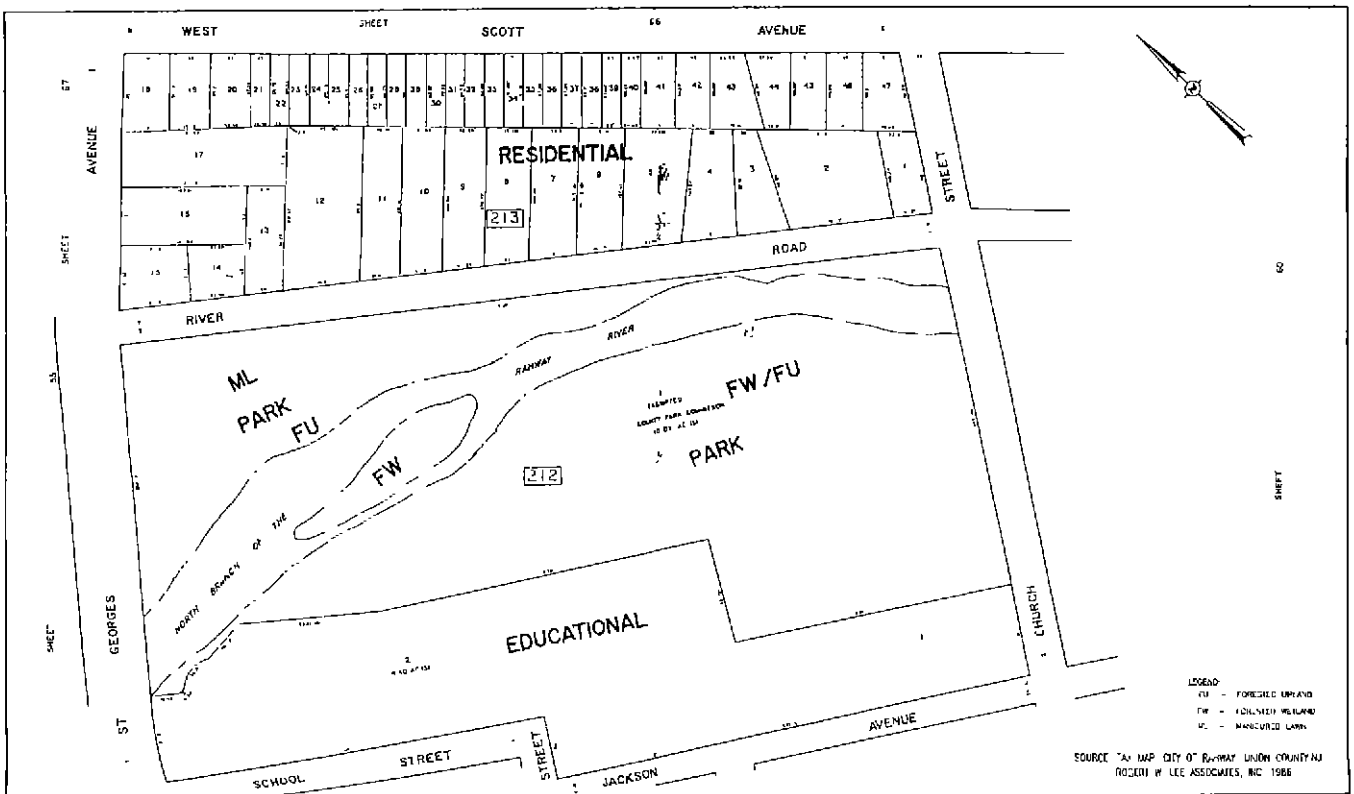


SOURCE TAX MAP CITY OF RAHWAY UNION COUNTY NJ
ROBERT W LEE ASSOCIATES INC 1996

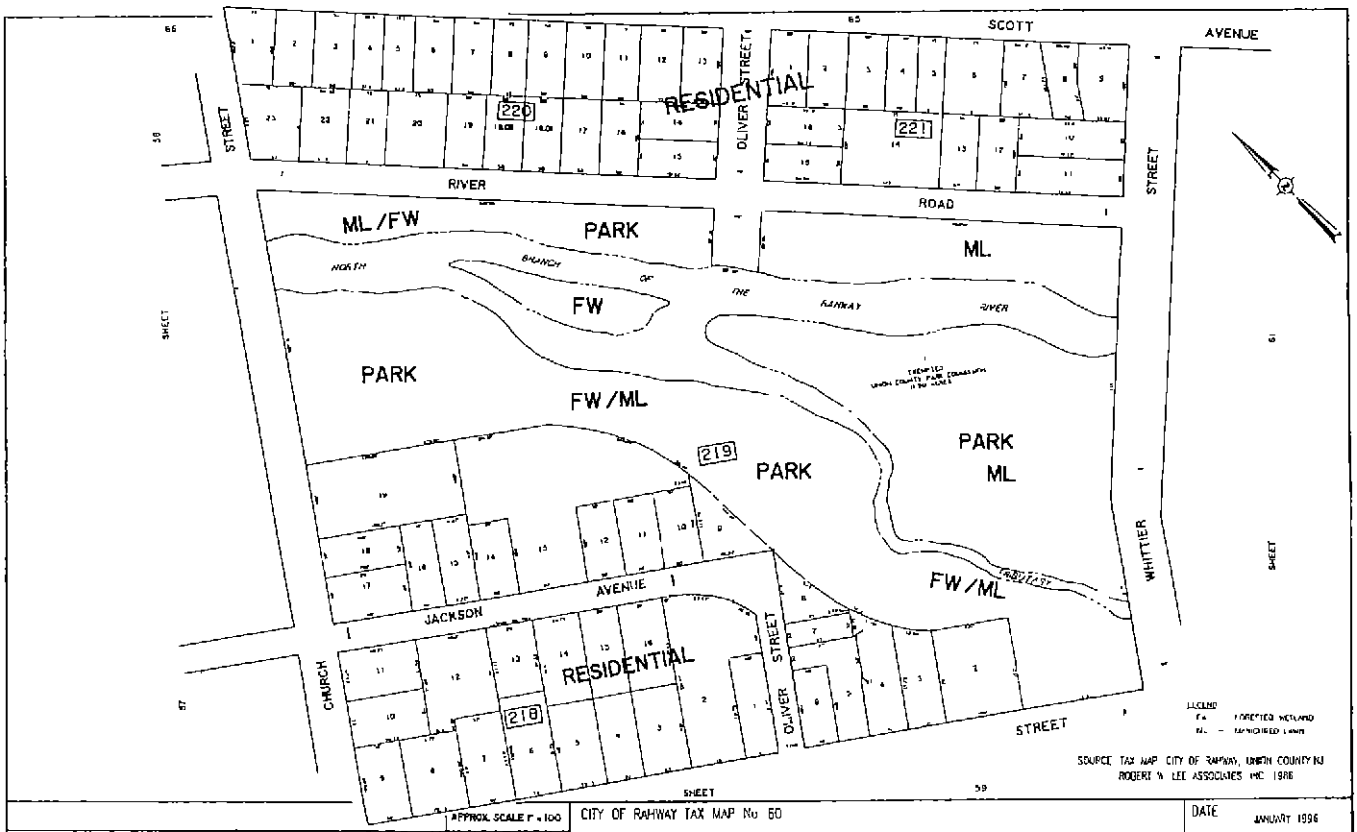
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 54 SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT	DATE JANUARY 1996 DRAWING No LU9



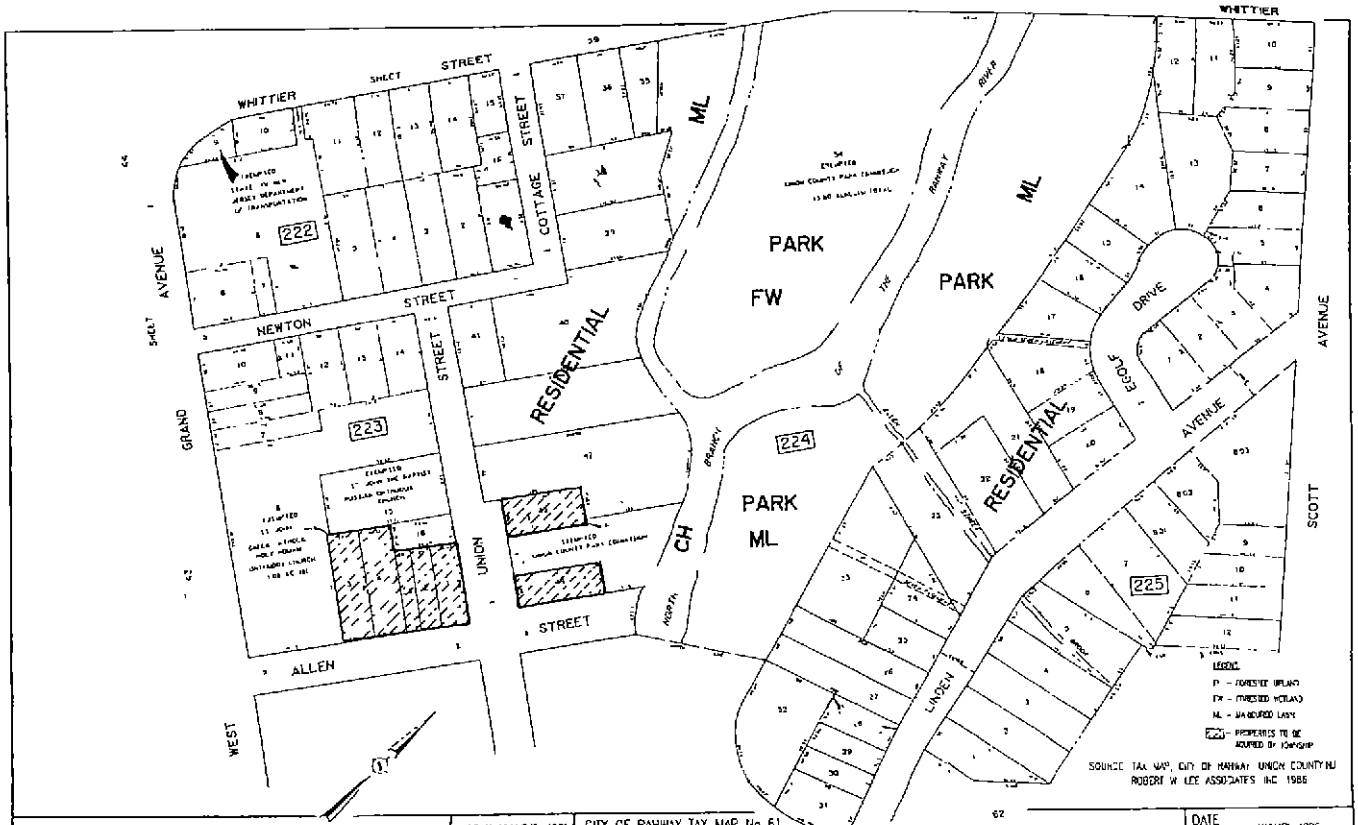
	APPROX. SCALE 1" = 200'	CITY OF RAHWAY TAX MAP No 55	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No LU10



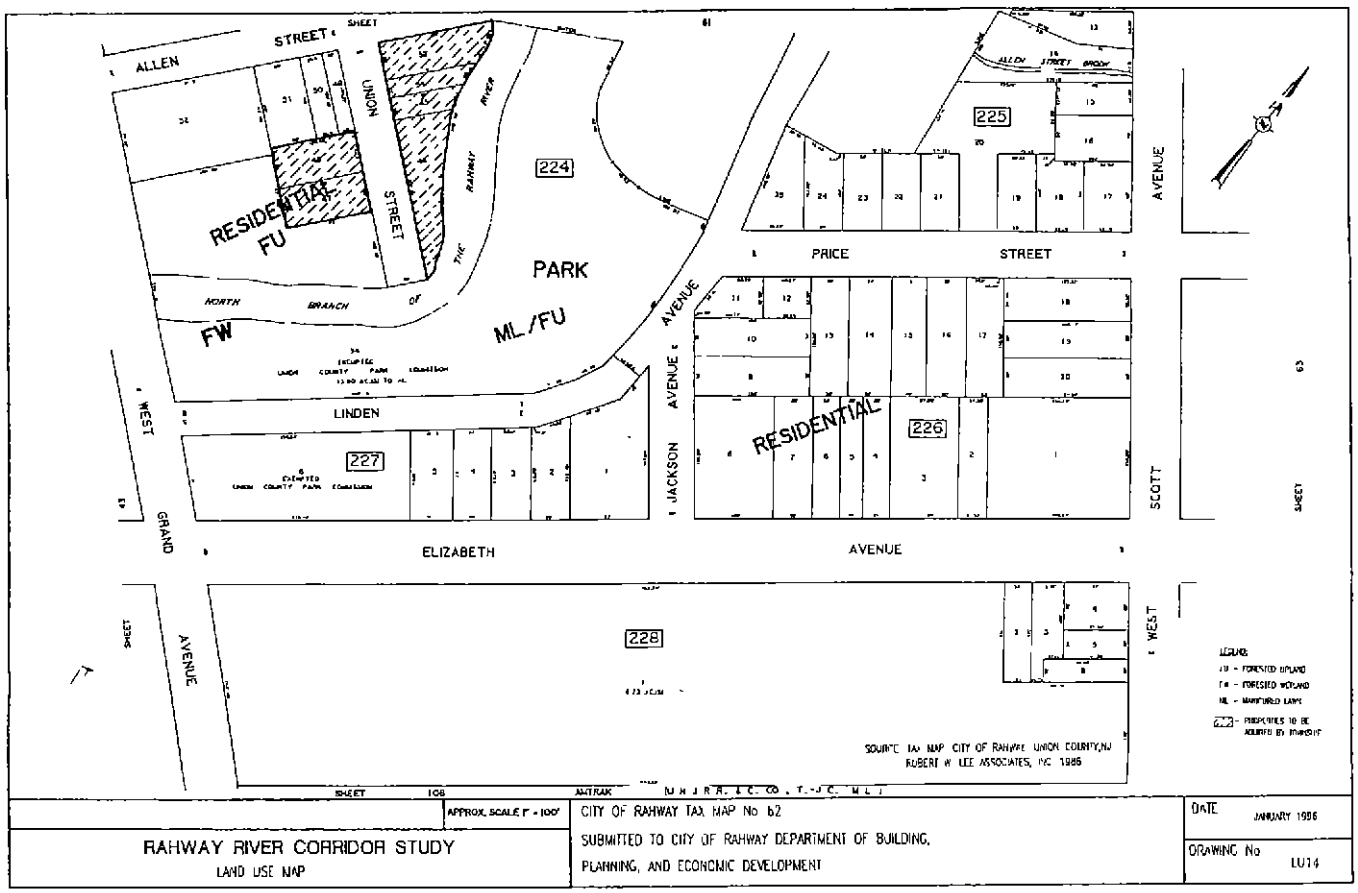
	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No. 58	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No LU11



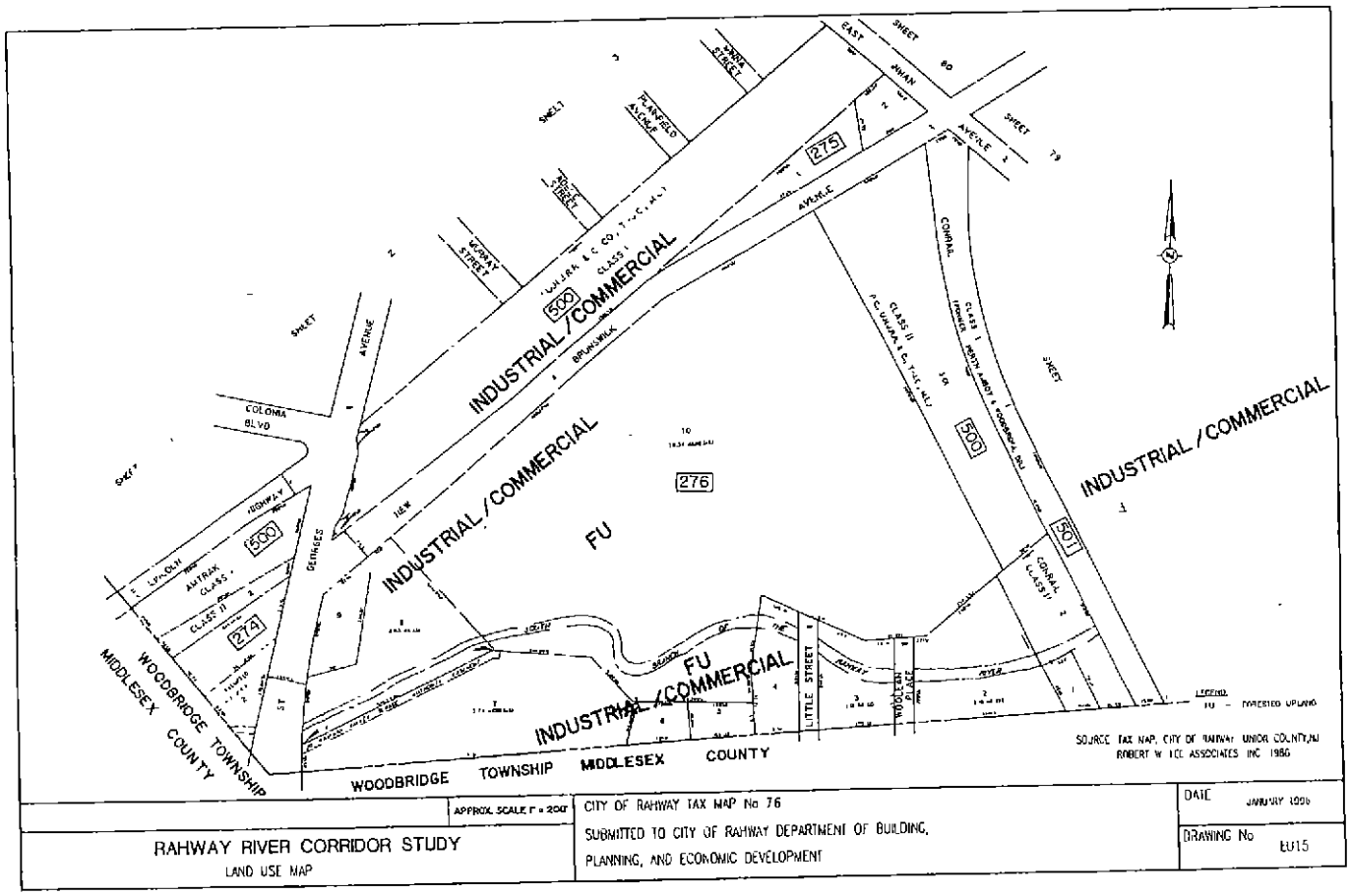
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP	CITY OF RAHWAY TAX MAP No 60 SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DATE JANUARY 1996 DRAWING No LU12



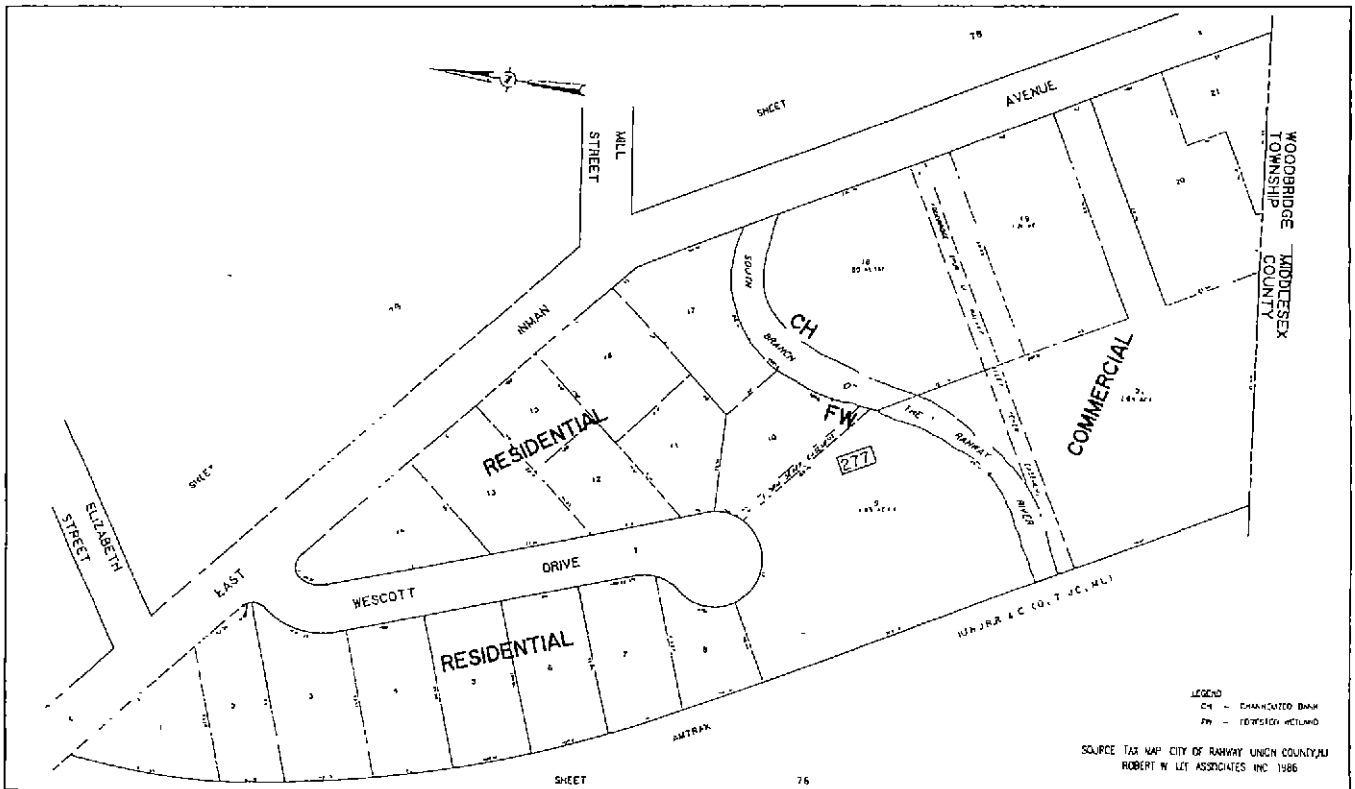
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No. 61 SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DATE JANUARY 1986 DRAWING No. LU13



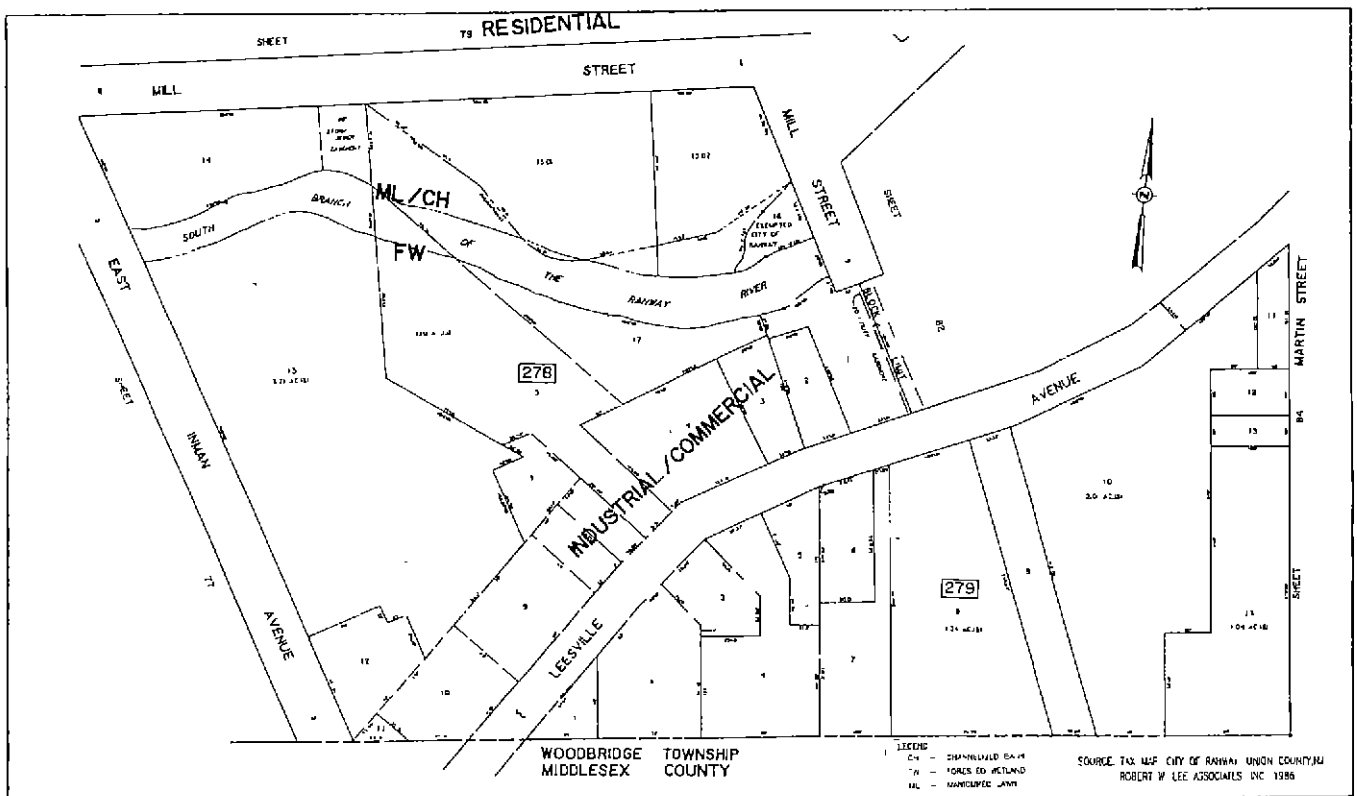
	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 62	DATE JANUARY 1986
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No LU14



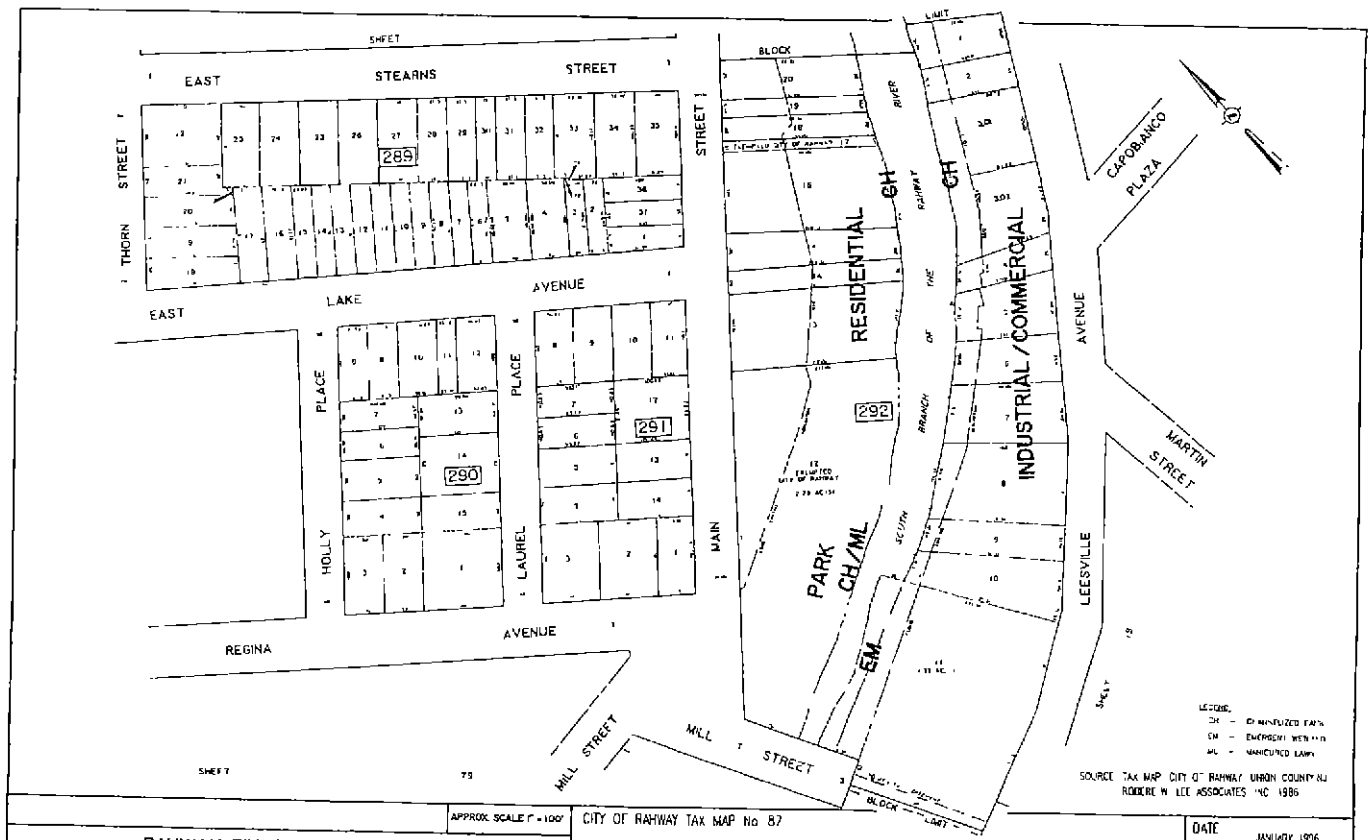
APPROX. SCALE 1" = 200'	CITY OF RAHWAY TAX MAP No 76	DATE JANUARY 1990
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP	SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No LU15



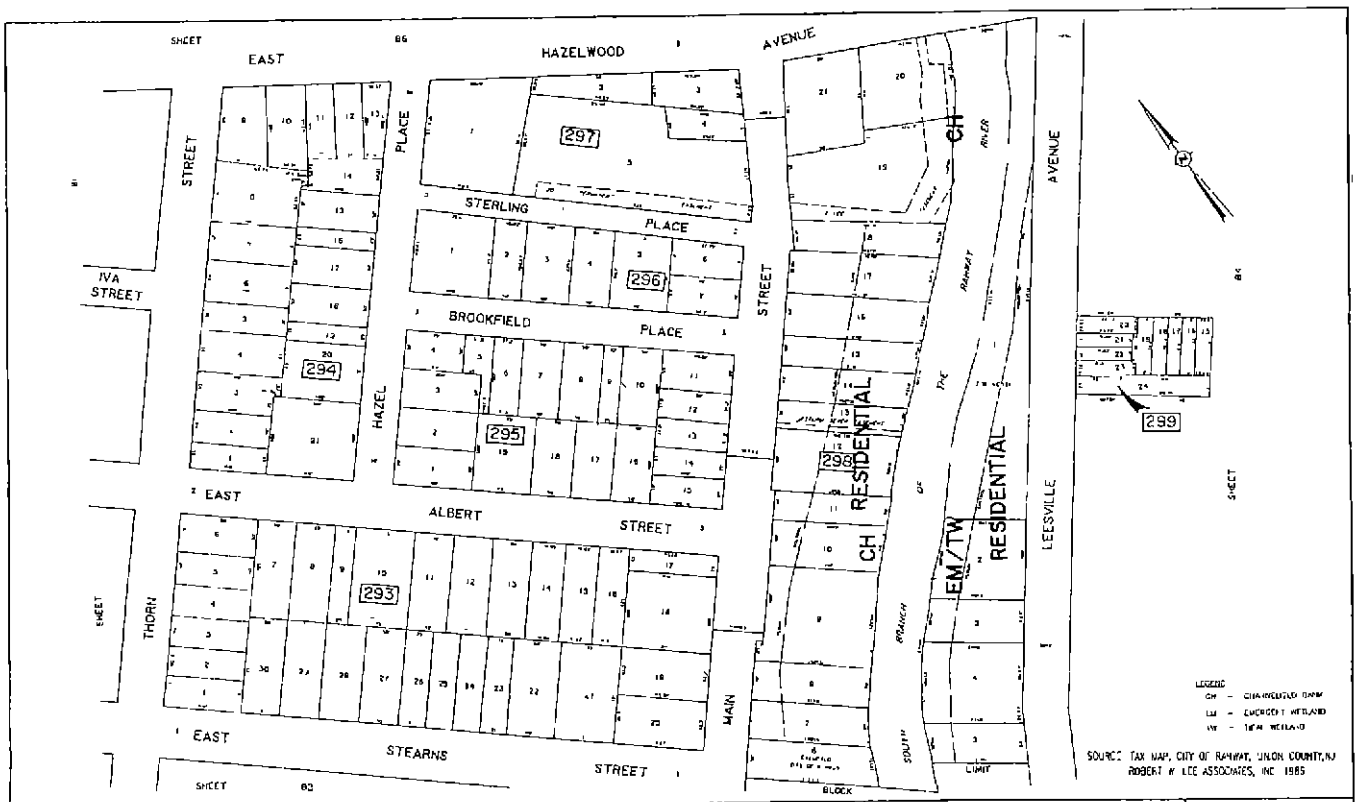
	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 77	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No LU16



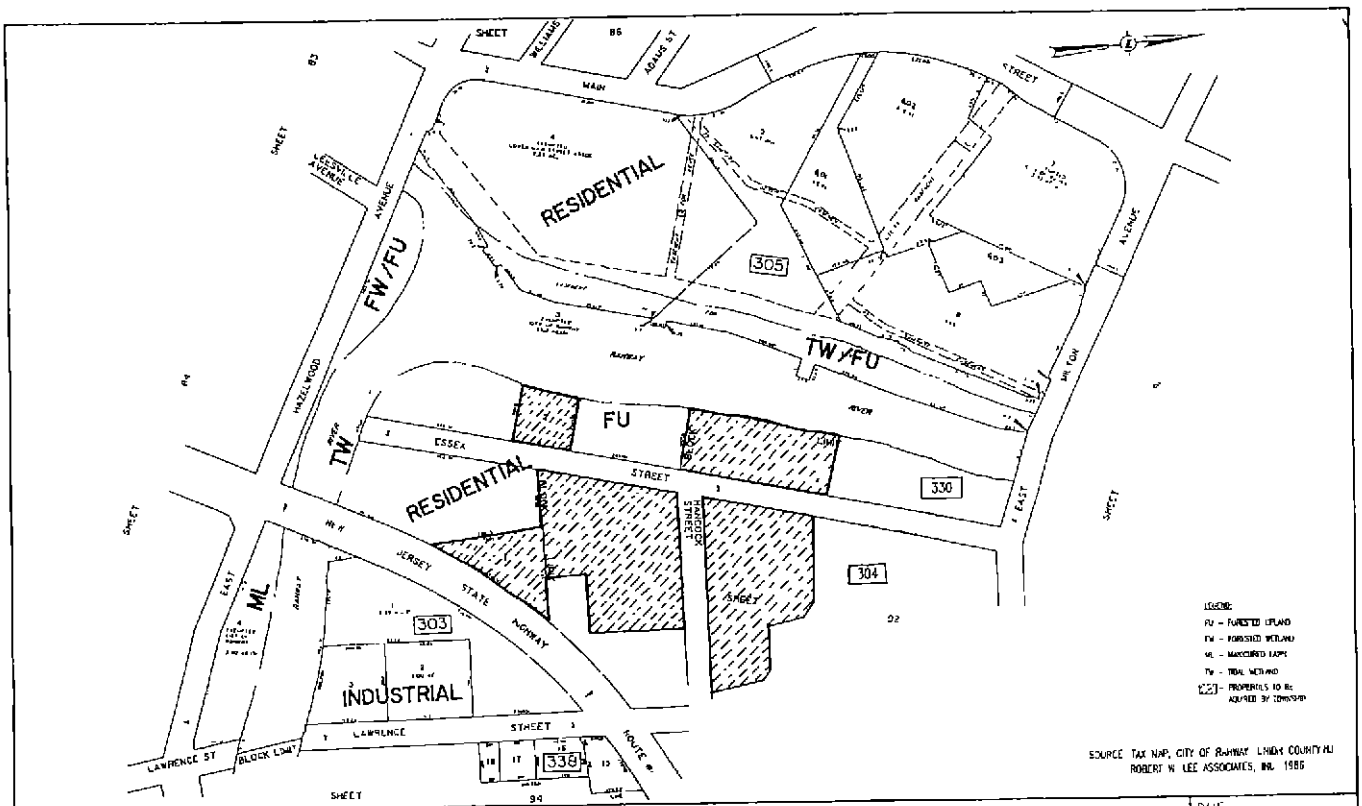
	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 78	DATE JANUARY 1986
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No LU17



RAHWAY RIVER CORRIDOR STUDY LAND USE MAP	APPROX SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 87 SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT
		DATE JANUARY 1906
		DRAWING No LU18



	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 83	DATE JANUARY 1986
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING AND ECONOMIC DEVELOPMENT	DRAWING No LU19



APPROX. SCALE 1" = 200'

CITY OF RAHWAY TAX MAP No 85

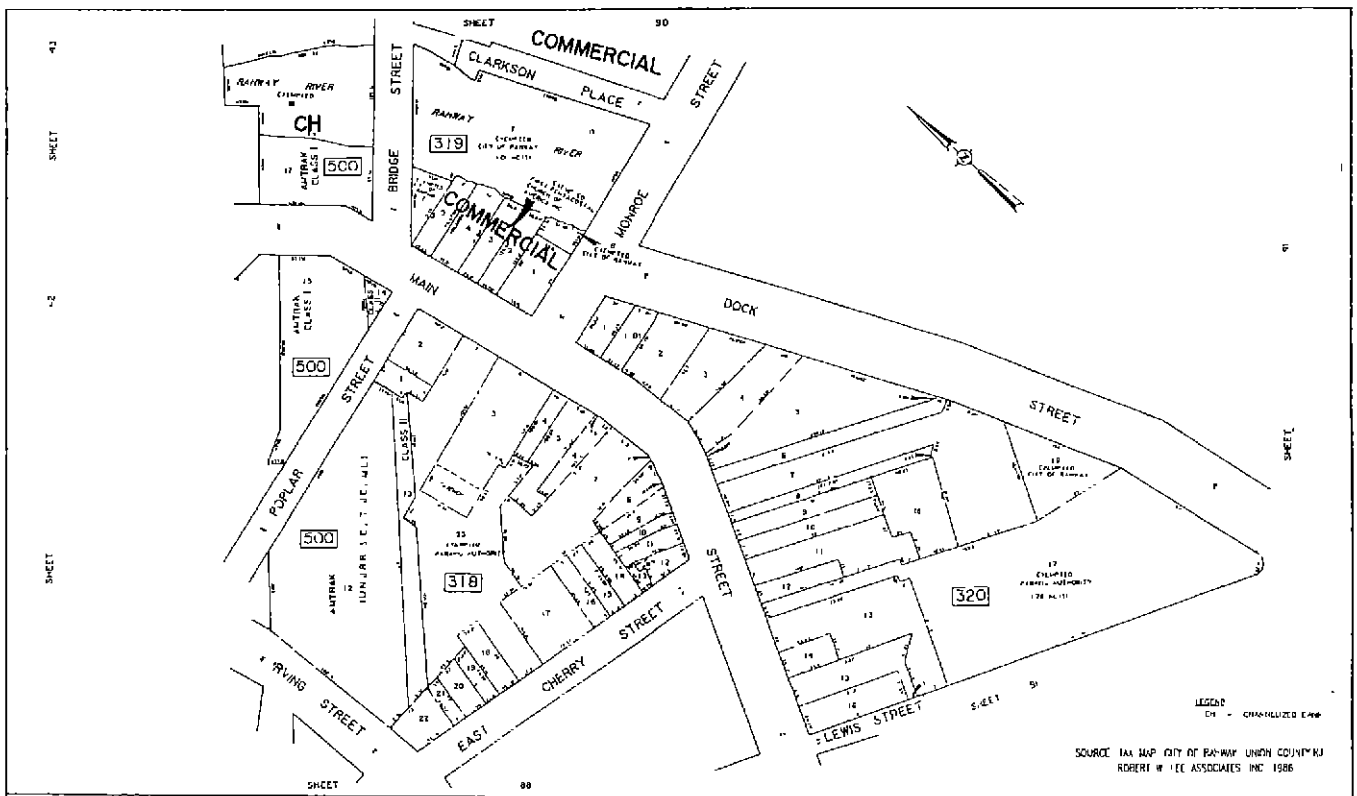
SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT

DATE JANUARY 1986

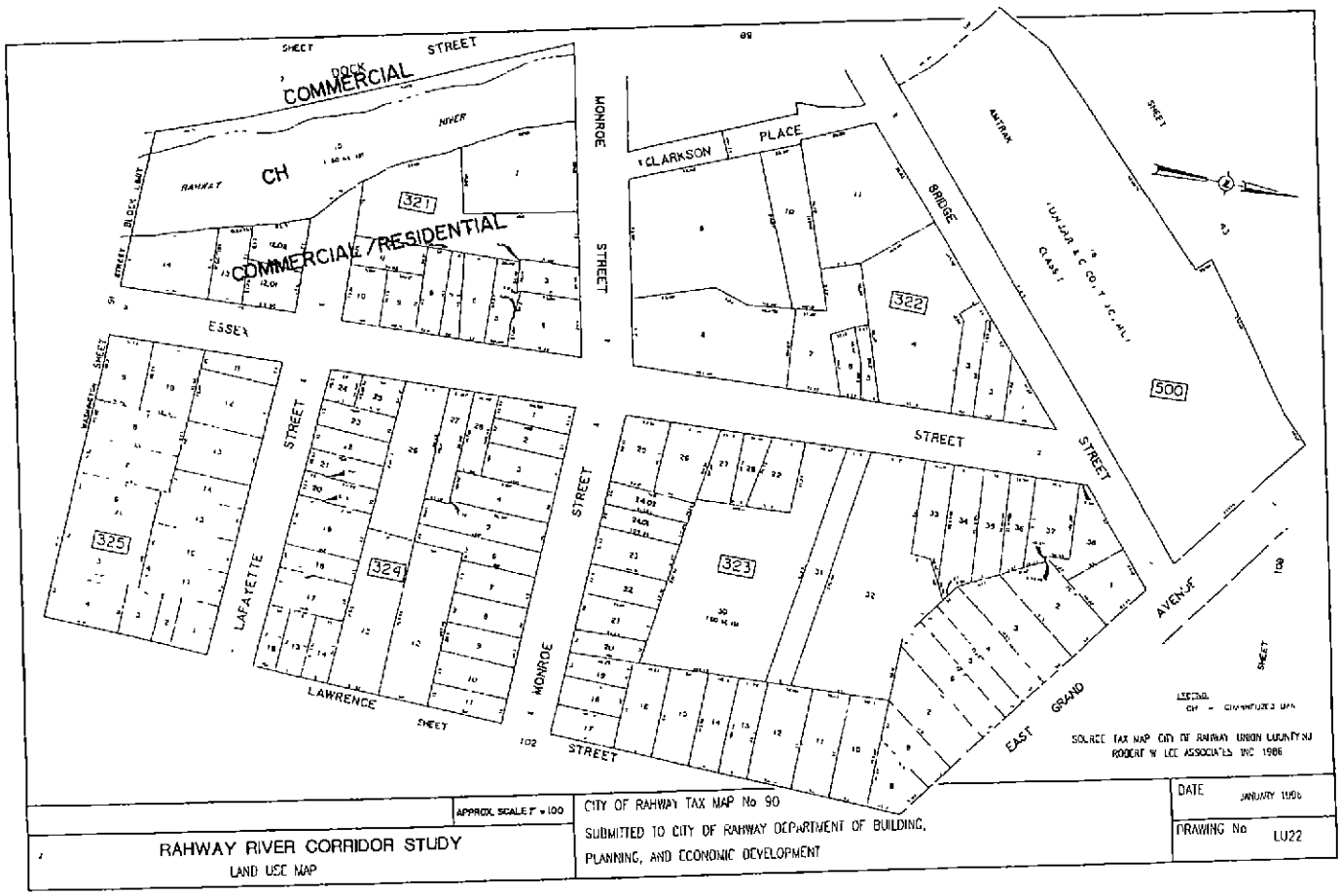
DRAWING No LU20

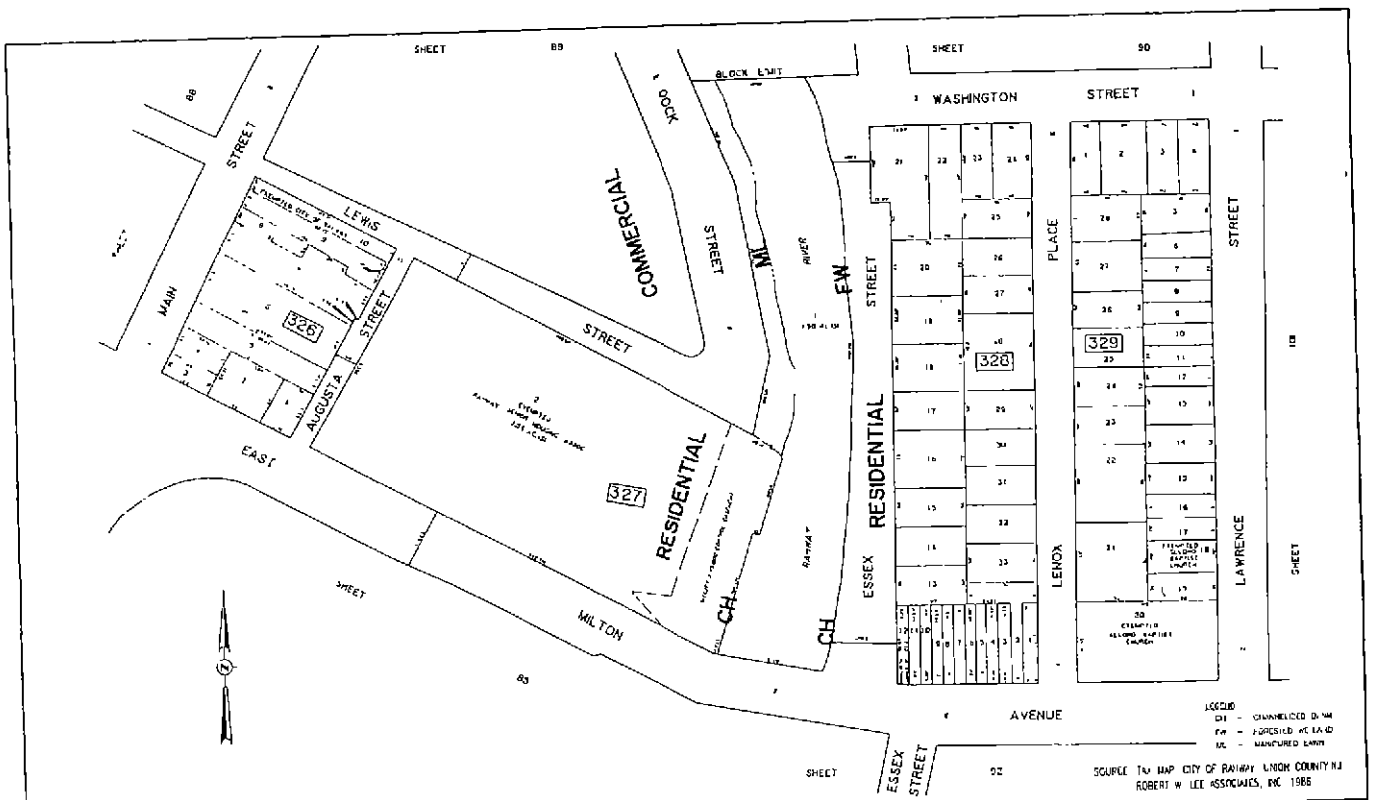
RAHWAY RIVER CORRIDOR STUDY

LAND USE MAP



APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 89	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP	SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No LU21


DOCK STREET
COMMERCIAL
RAHWAY RIVER
CH
321
COMMERCIAL/RESIDENTIAL
ESSEX STREET
MONROE STREET
CLARKSON PLACE
BRIDGE STREET
AMTRAK
322
500
325
LAFAYETTE STREET
324
LAWRENCE STREET
MONROE STREET
323
EAST GRAND AVENUE
SOURCE TAX MAP CITY OF RAHWAY UNION COUNTY NJ
ROBERT W LEE ASSOCIATES INC 1986
APPROX. SCALE 1" = 100'
CITY OF RAHWAY TAX MAP No 90
SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING,
PLANNING, AND ECONOMIC DEVELOPMENT
DATE JANUARY 1986
DRAWING No LU22
RAHWAY RIVER CORRIDOR STUDY
LAND USE MAP



APPROX. SCALE 1" = 100'

CITY OF RAHWAY TAX MAP No 91

SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING

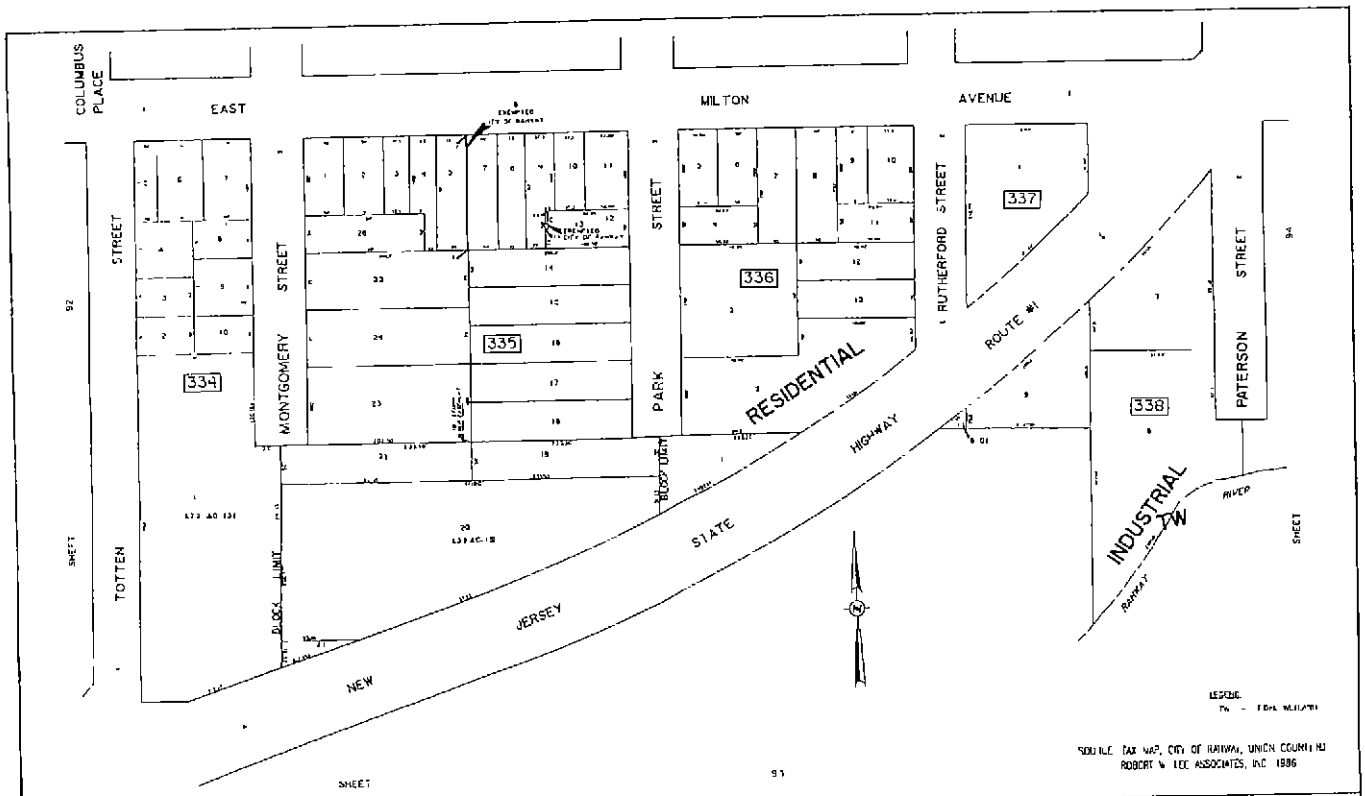
PLANNING, AND ECONOMIC DEVELOPMENT

DATE JANUARY 1988

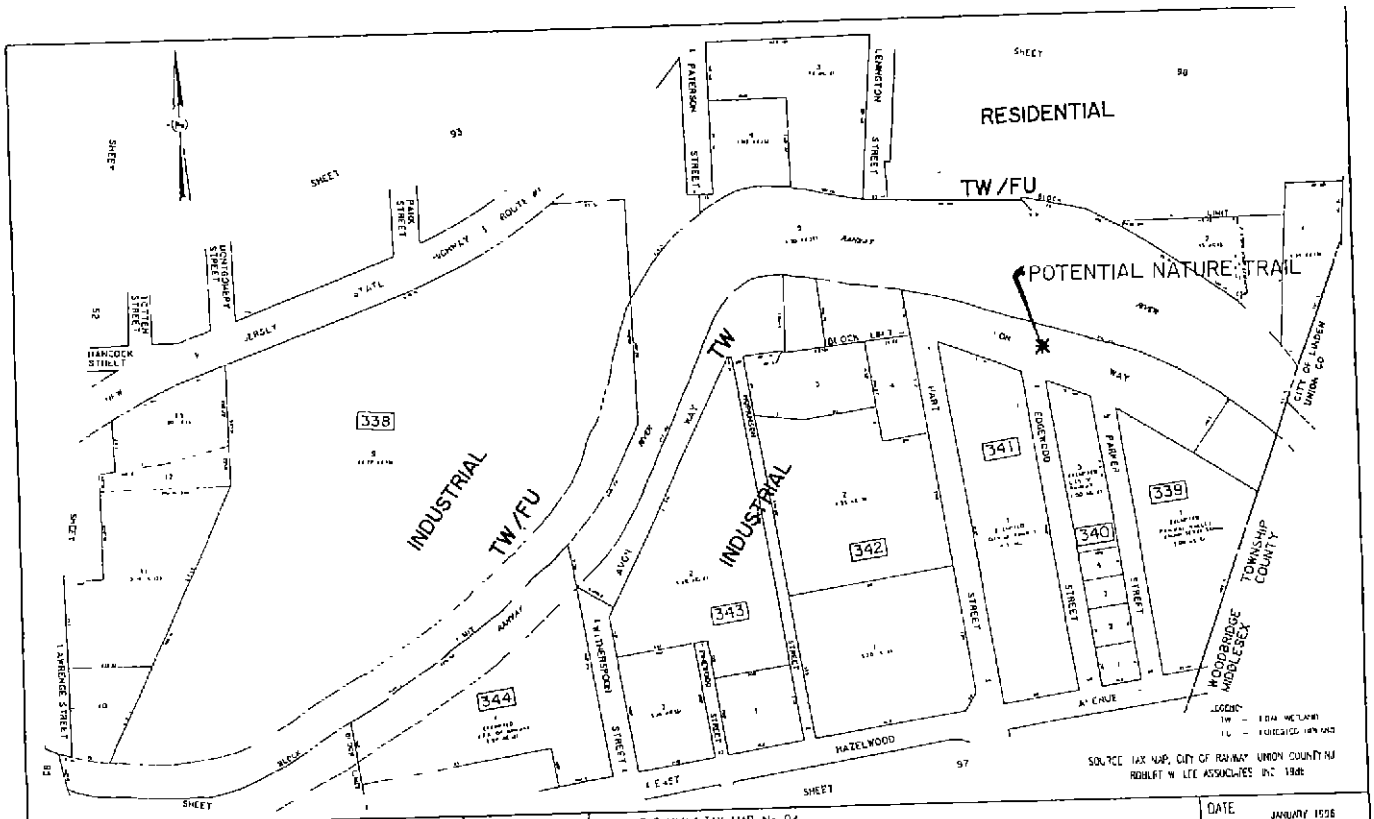
DRAWING No LU23

RAHWAY RIVER CORRIDOR STUDY

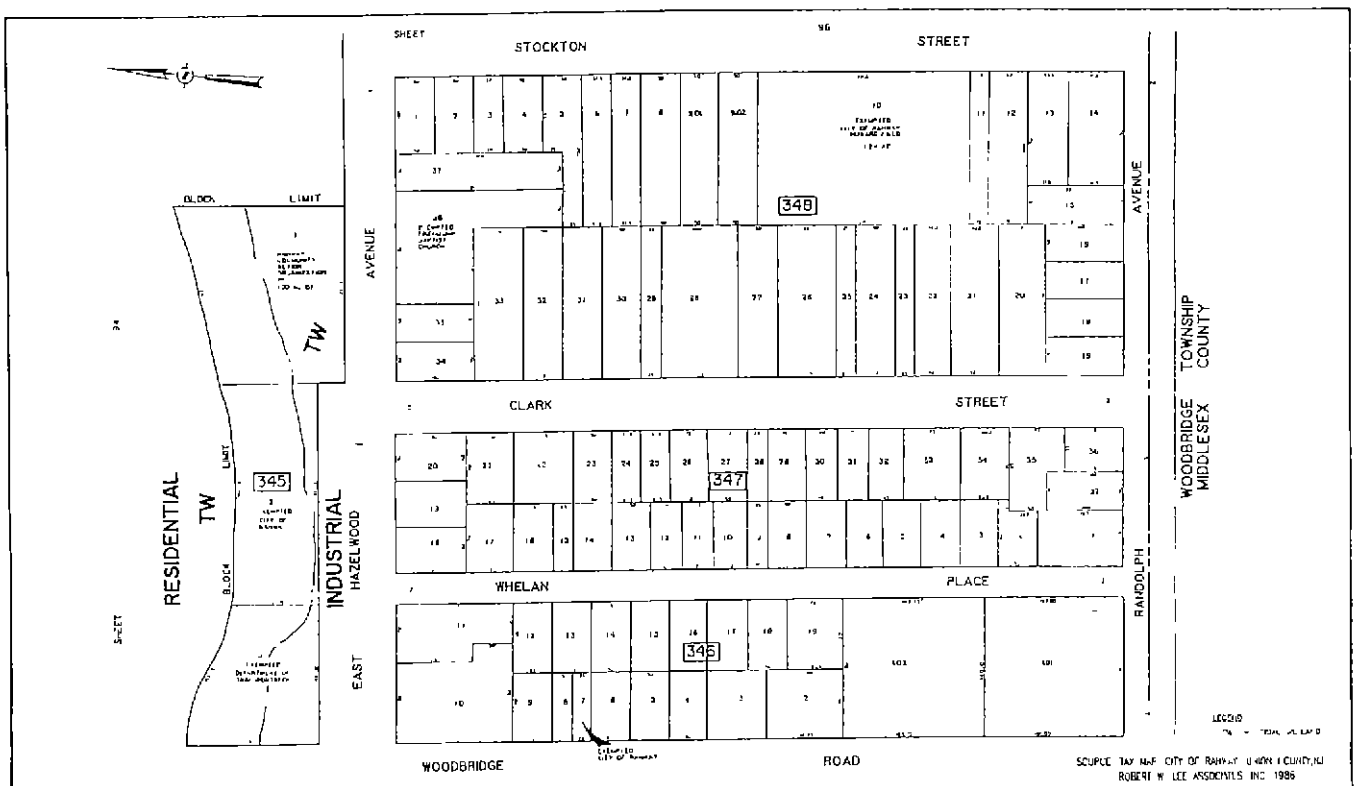
LAND USE MAP



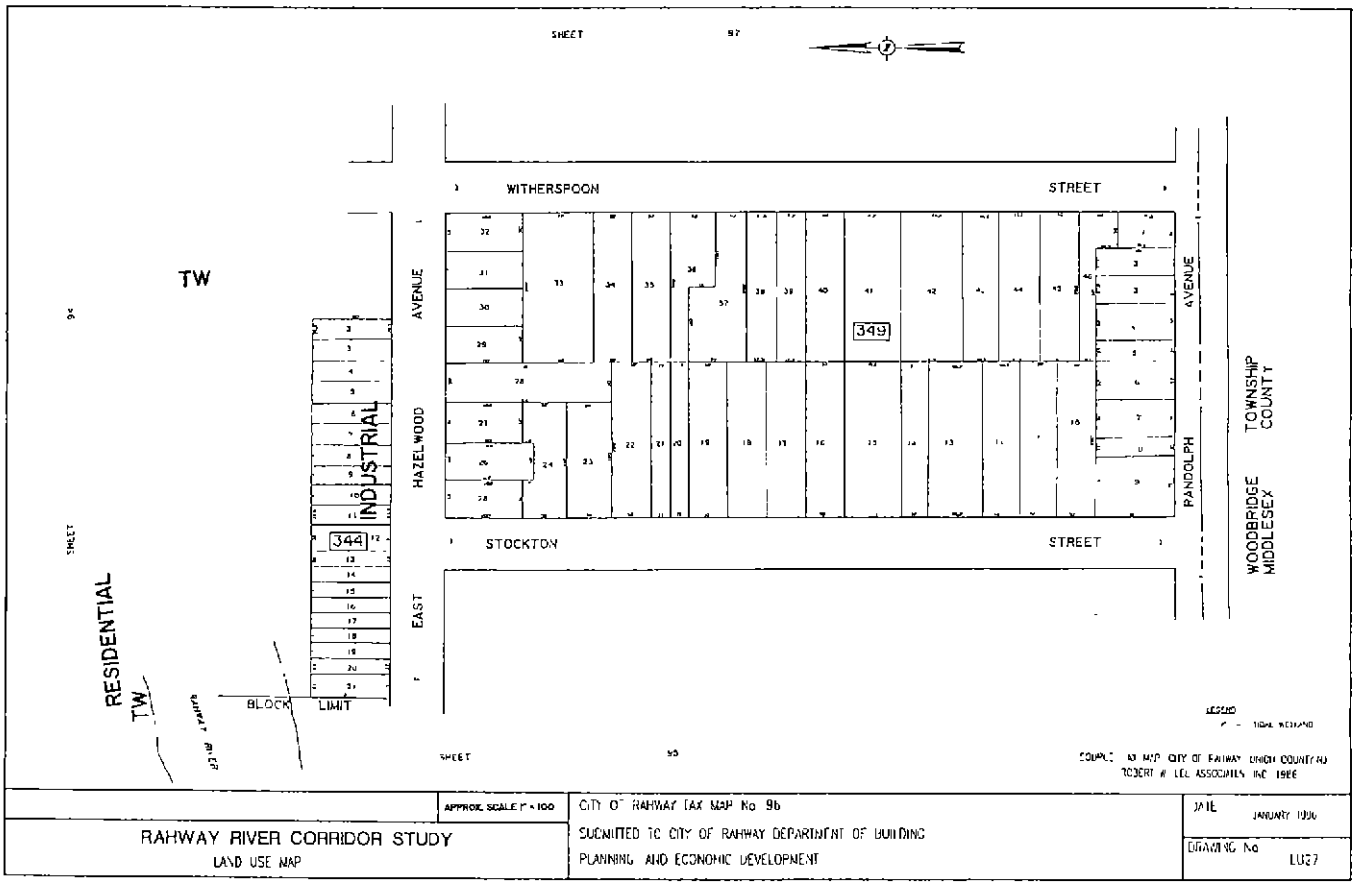
	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No. 93	DATE JANUARY 1986
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No. LU21



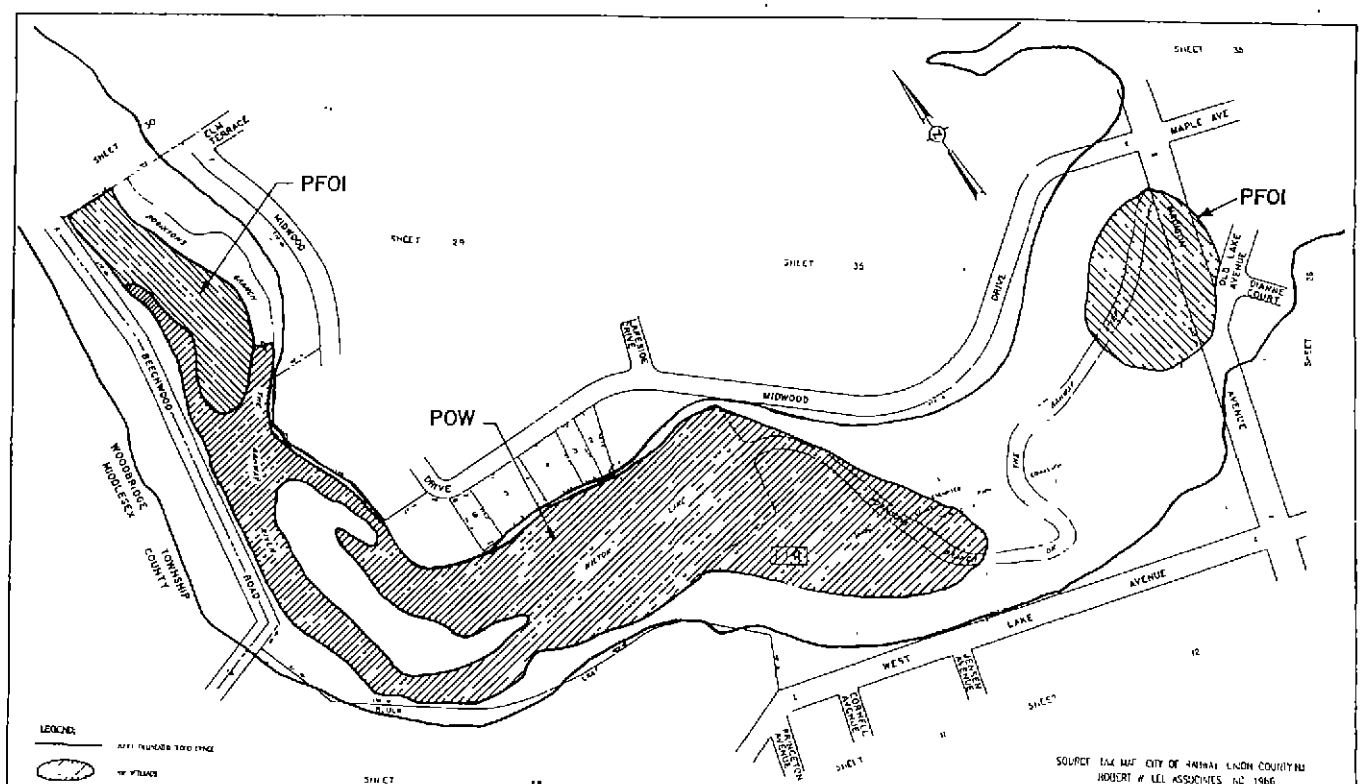
APPROX. SCALE 1" = 200'	CITY OF RAHWAY TAX MAP No. 94	DATE JANUARY 1986
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP	SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No. LU25



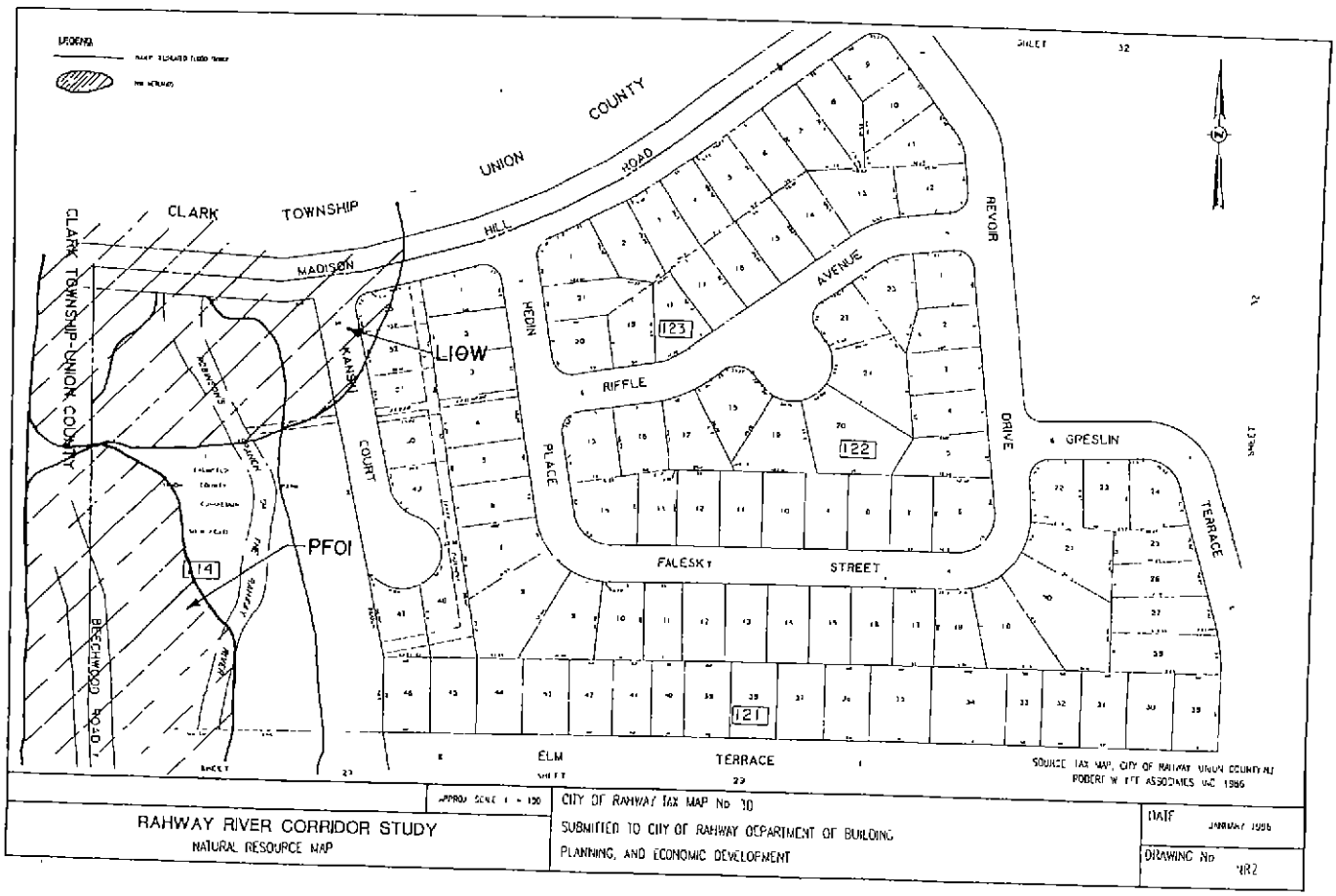
APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 95	DATE JANUARY 1988
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP	SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No LU76

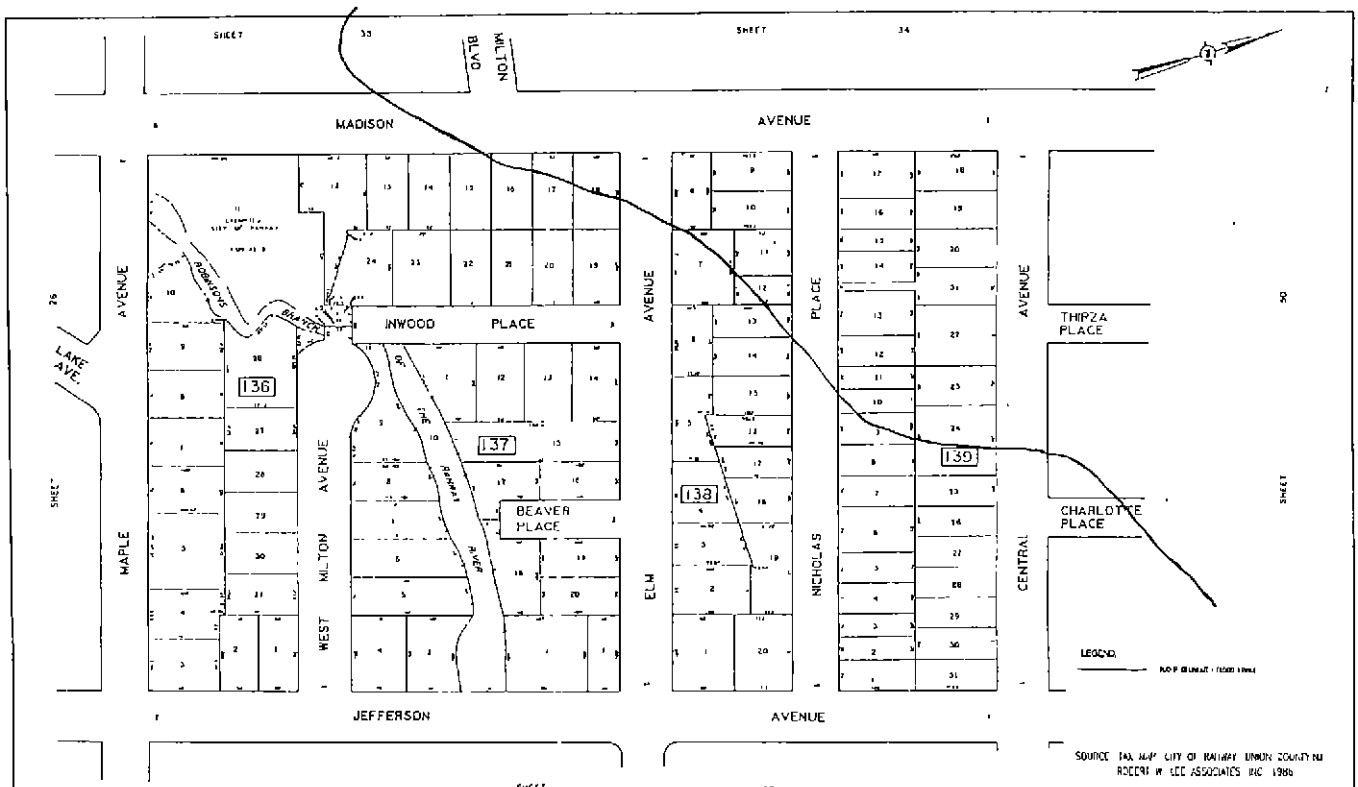


	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No. 9b	DATE JANUARY 1990
RAHWAY RIVER CORRIDOR STUDY LAND USE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING AND ECONOMIC DEVELOPMENT	DRAWING No. LU27

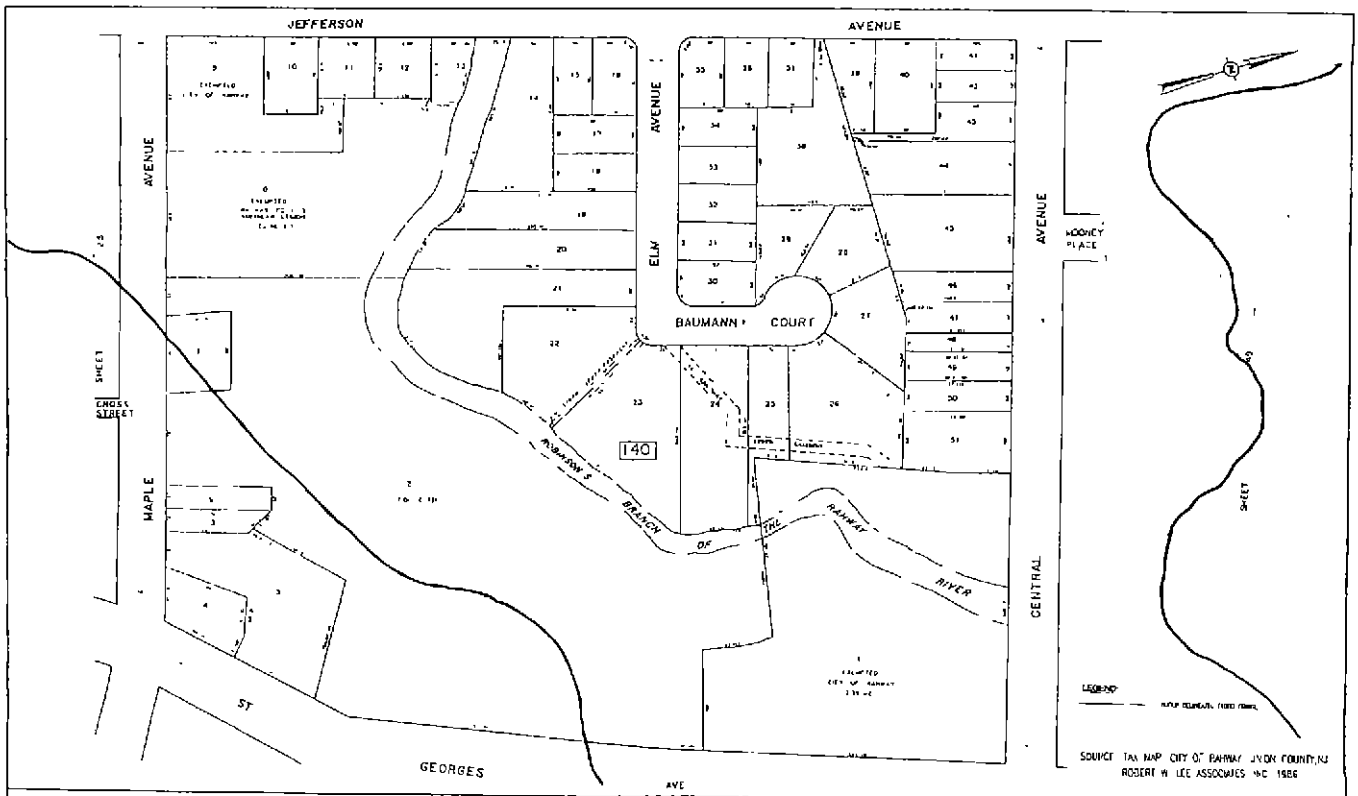


	APPROX SCALE 1" = 200'	CITY OF RAHWAY TAX MAP No 27	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING AND ECONOMIC DEVELOPMENT	DRAWING No NR1

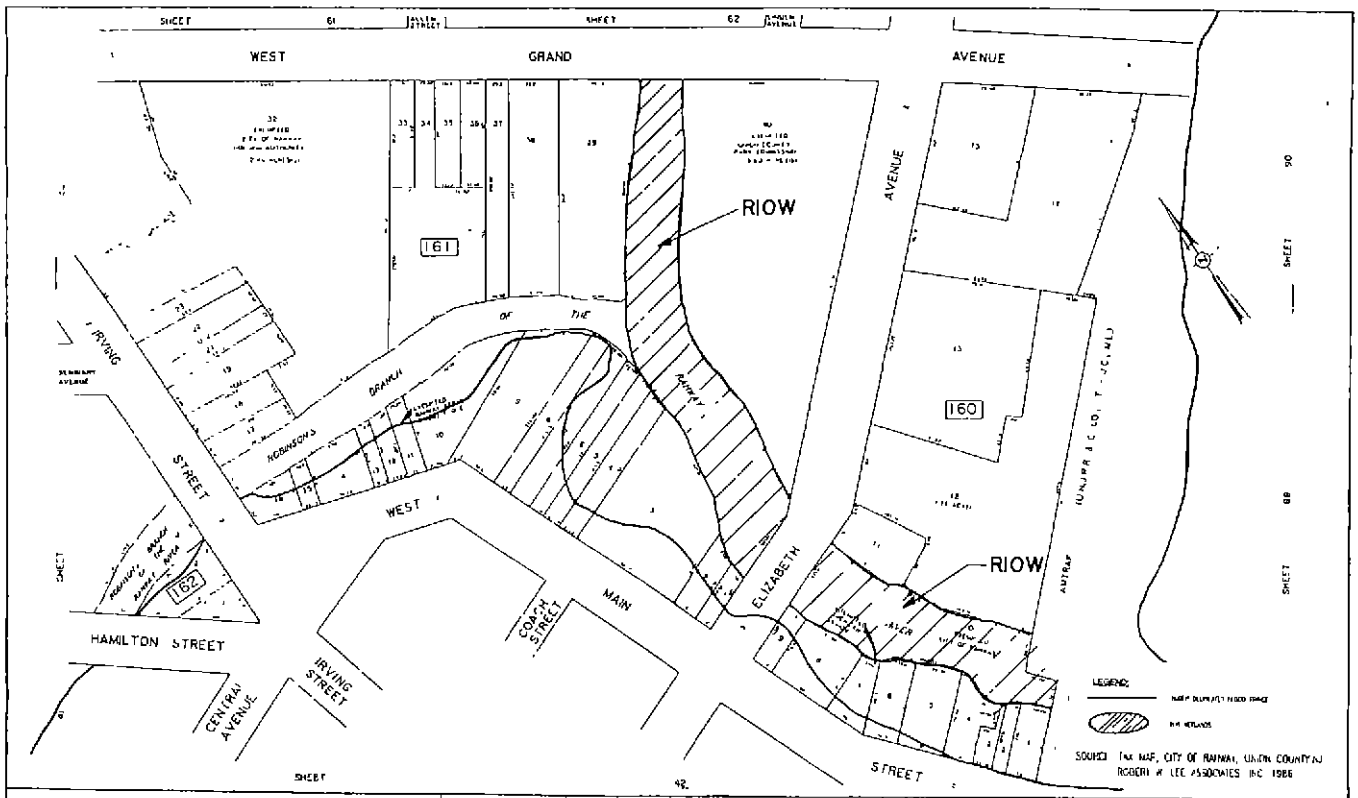

LEGEND
SHEET 32
UNION COUNTY
ROAD
HILL
CLARK TOWNSHIP
MADISON
CLARK TOWNSHIP-UNION COUNTY
LIOW
KANSAS
COURT
HEDIN
PLACE
123
RIFFLE
AVENUE
REVOR
DRIVE
GRESLIN
TERRACE
122
FALESKY
STREET
PFOI
14
BERGENWOOD ROAD
121
ELM
TERRACE
SHEET 23
SHEET 32
SOURCE TAX MAP, CITY OF RAHWAY UNION COUNTY, NJ
ROBERT W. FITT ASSOCIATES LLC 1986
APPROX SCALE 1" = 100'
CITY OF RAHWAY TAX MAP No 30
SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING
PLANNING, AND ECONOMIC DEVELOPMENT
DATE JANUARY 1986
DRAWING No NR2
RAHWAY RIVER CORRIDOR STUDY
NATURAL RESOURCE MAP



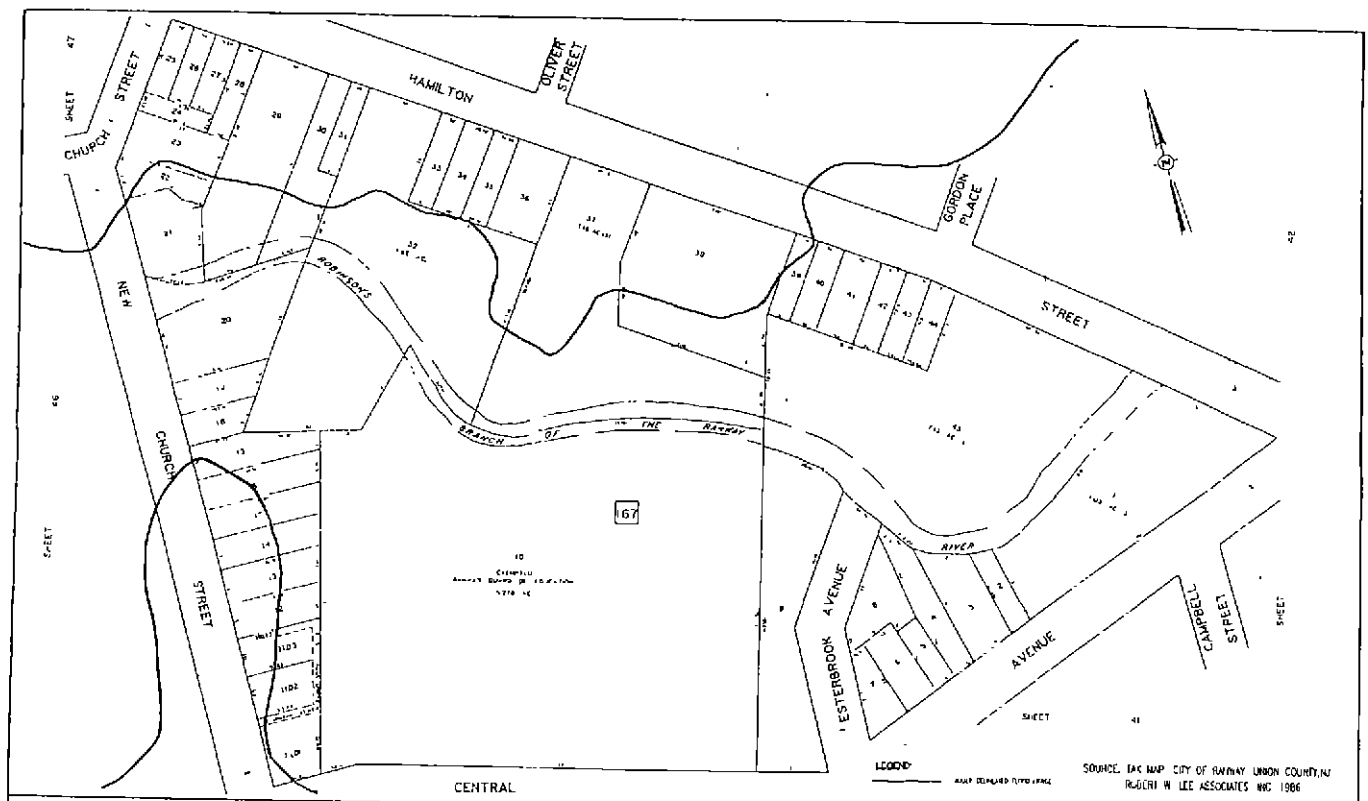
APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No. 36	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP	SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No. NR3



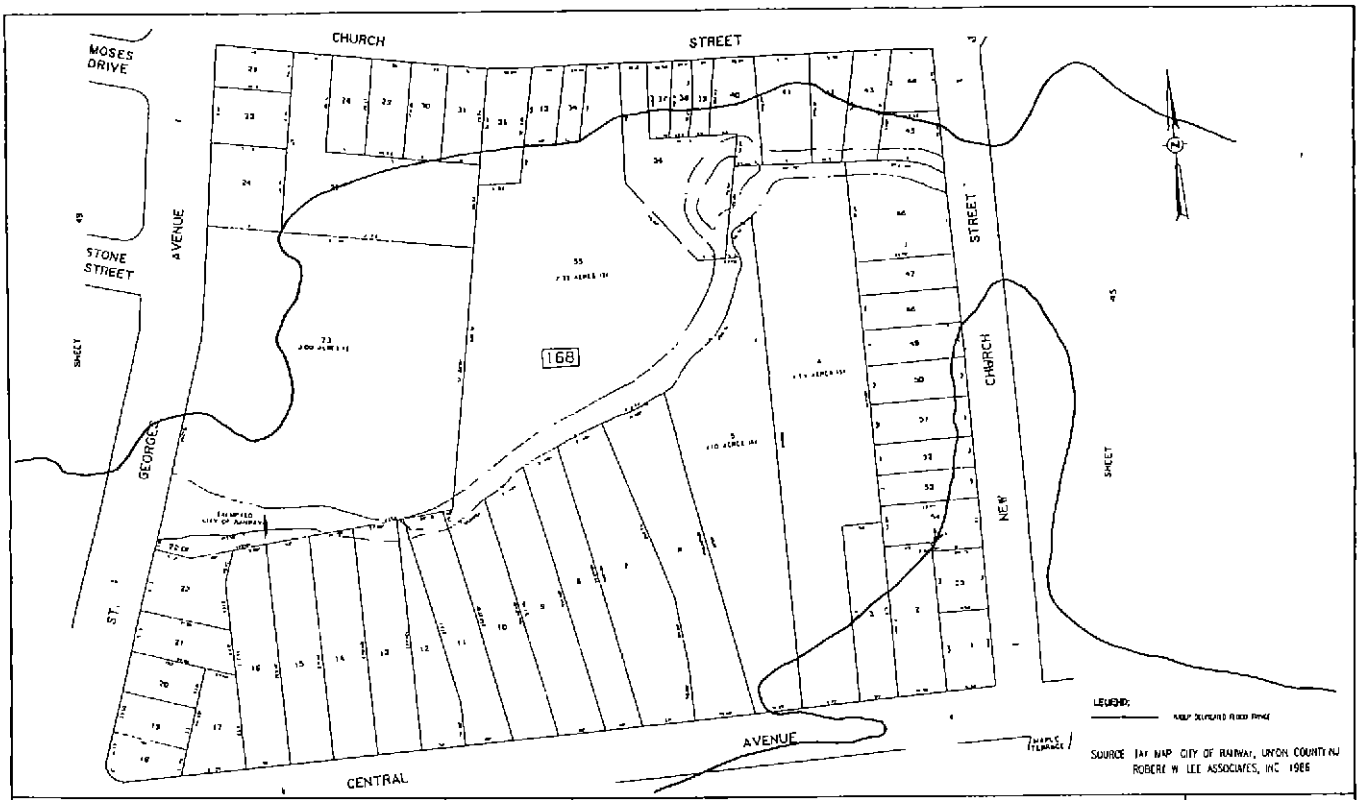
APPROX. SCALE 1 = 100	CITY OF RAHWAY TAX MAP No 37	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP	SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No NR4



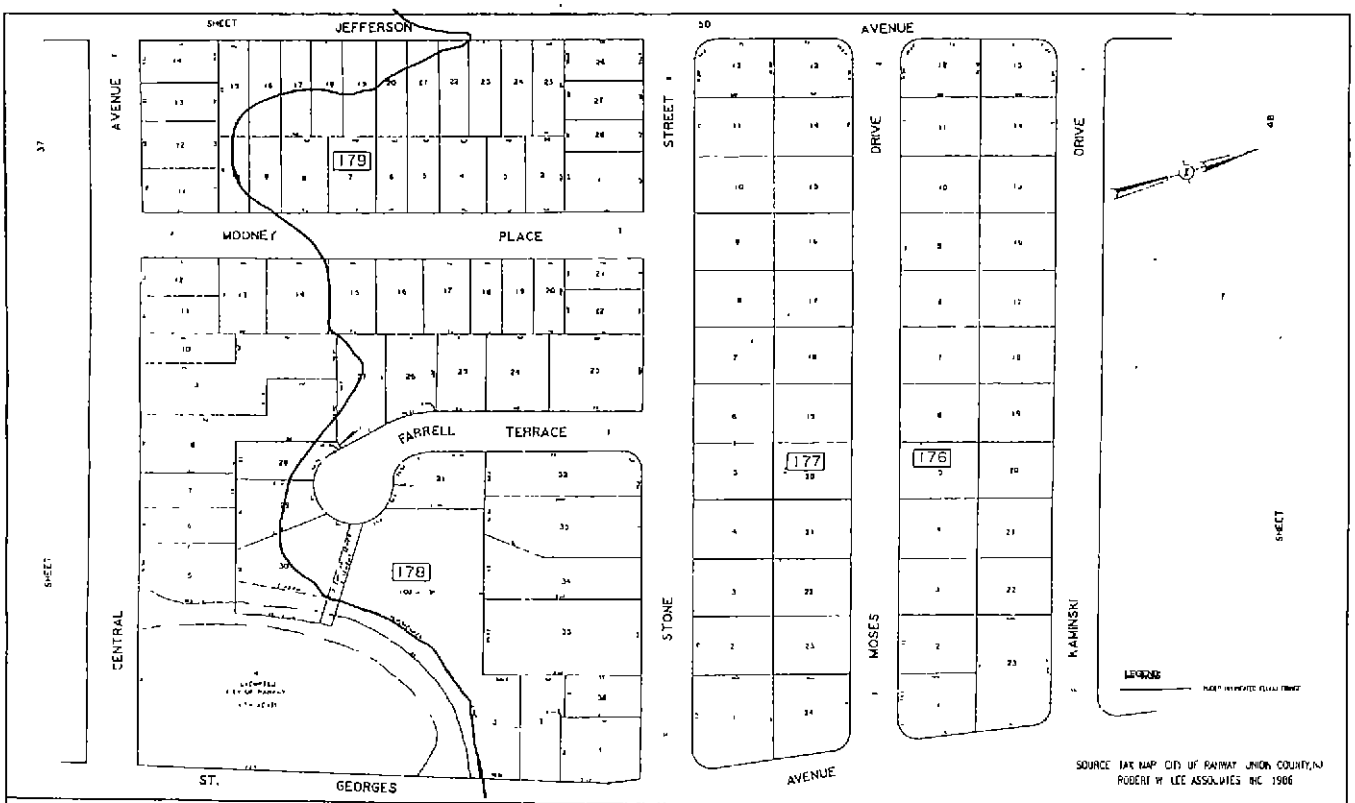
	APPROX SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 43	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No NR5



RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP	APPROX SCALE 1 = 100	CITY OF RAHWAY TAX MAP No 45 SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT	DATE JANUARY 1996 DRAWING No NR6



	APPROX SCALE 1 = 100	CITY OF RAHWAY TAX MAP No 16	DATE JANUARY 1990
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No NR7



RAHWAY RIVER CORRIDOR STUDY

NATURAL RESOURCE MAP

APPROX SCALE 1" = 100'

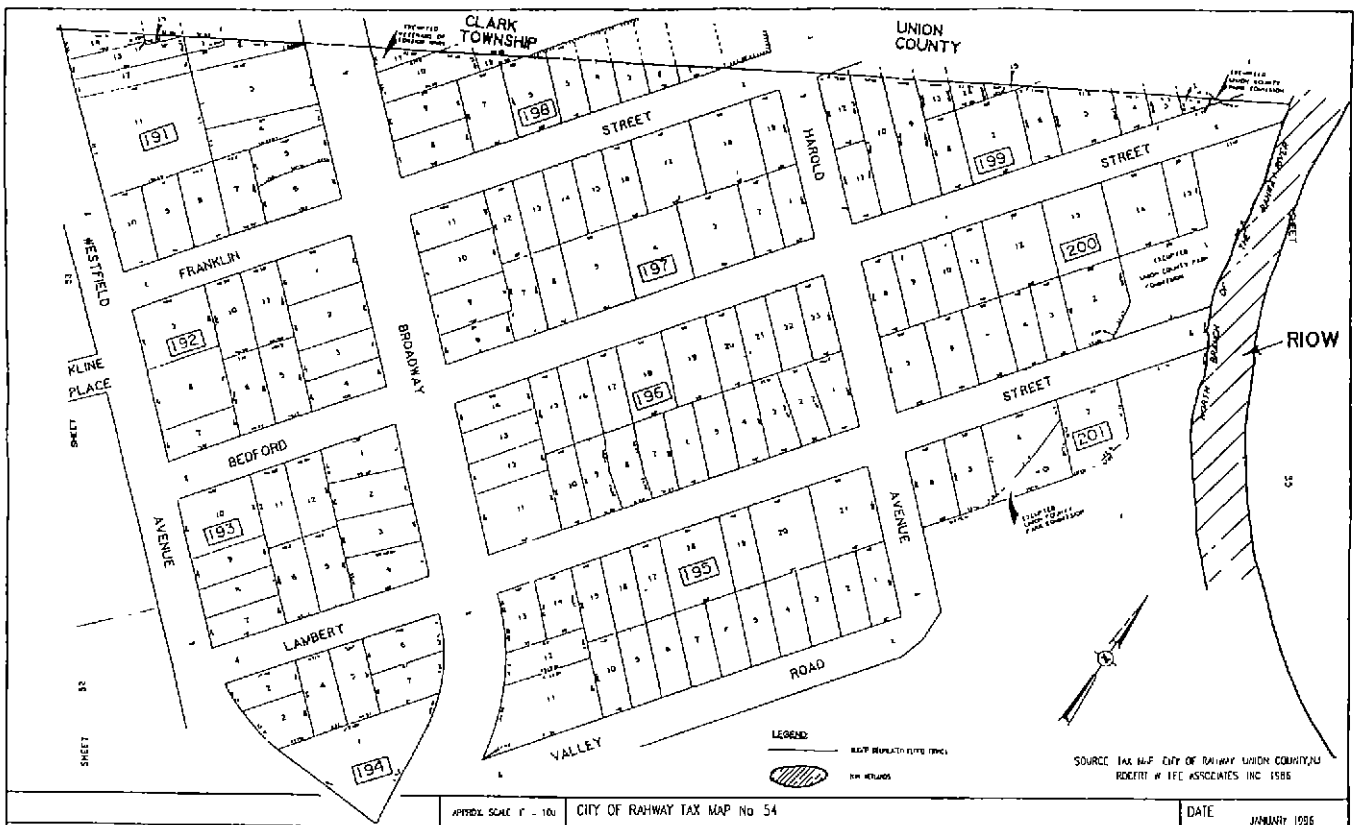
CITY OF RAHWAY TAX MAP No 49

SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING

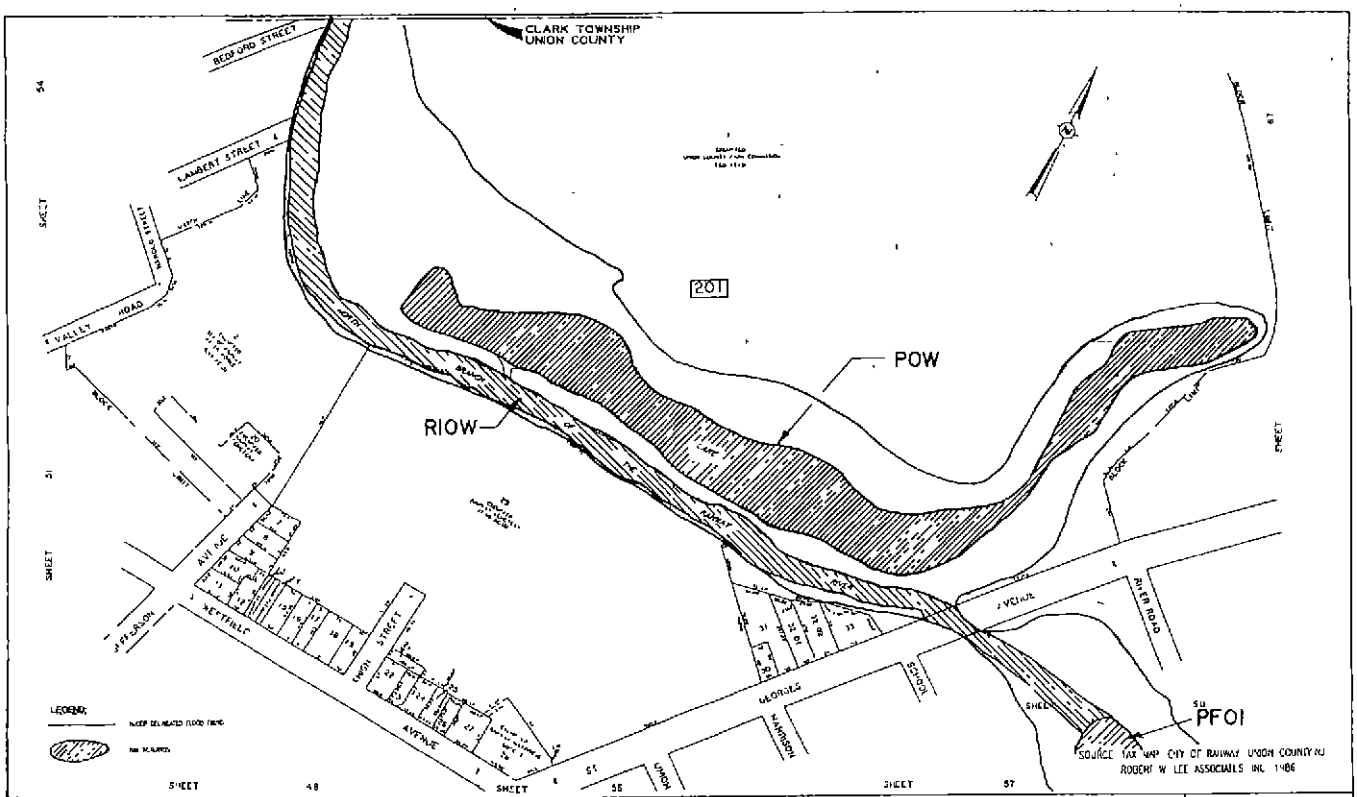
PLANNING, AND ECONOMIC DEVELOPMENT

DATE JAN 24TH 1996

DRAWING No NRB



RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No. 54 SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DATE: JANUARY 1986 DRAWING No.: NRS



RAHWAY RIVER CORRIDOR STUDY

NATURAL RESOURCE MAP

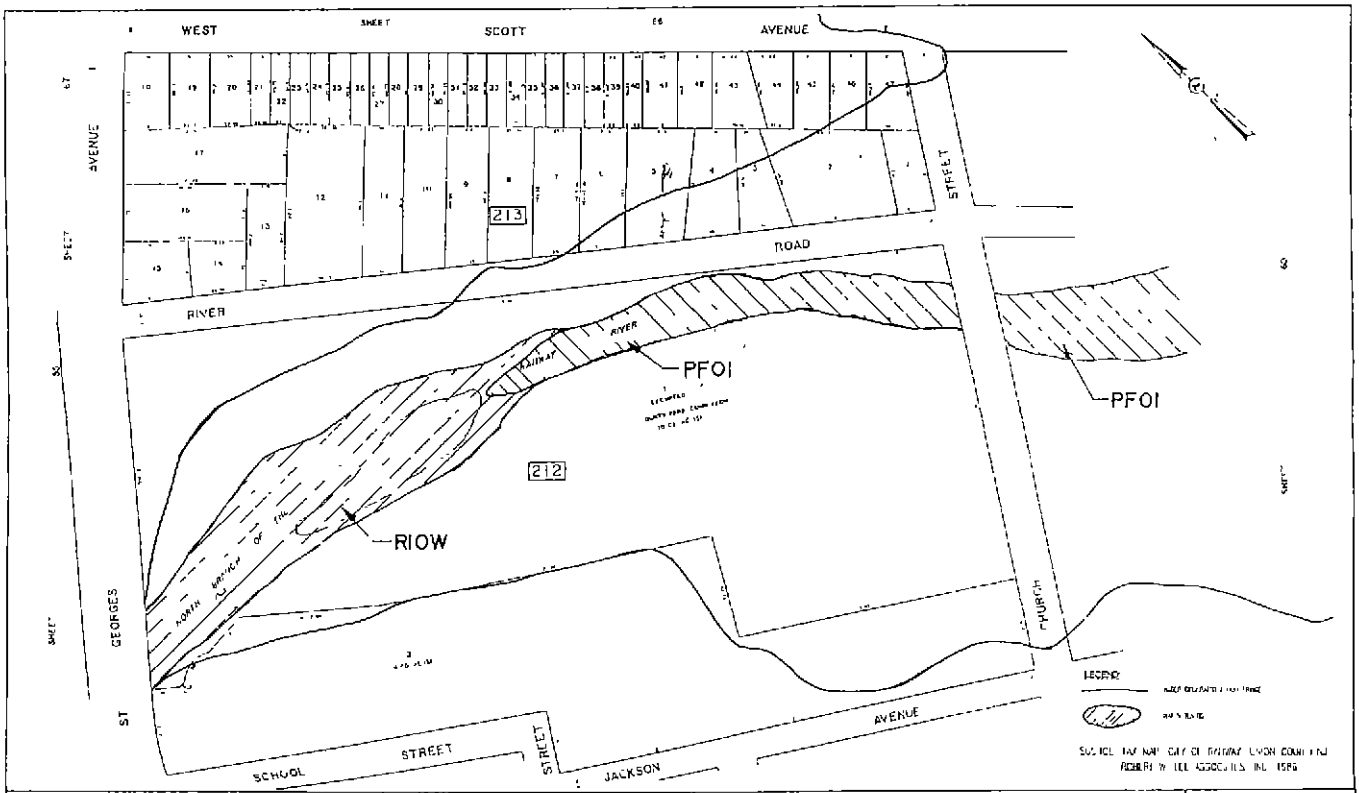
APPROX SCALE 1" = 200'

CITY OF RAHWAY TAX MAP No 55

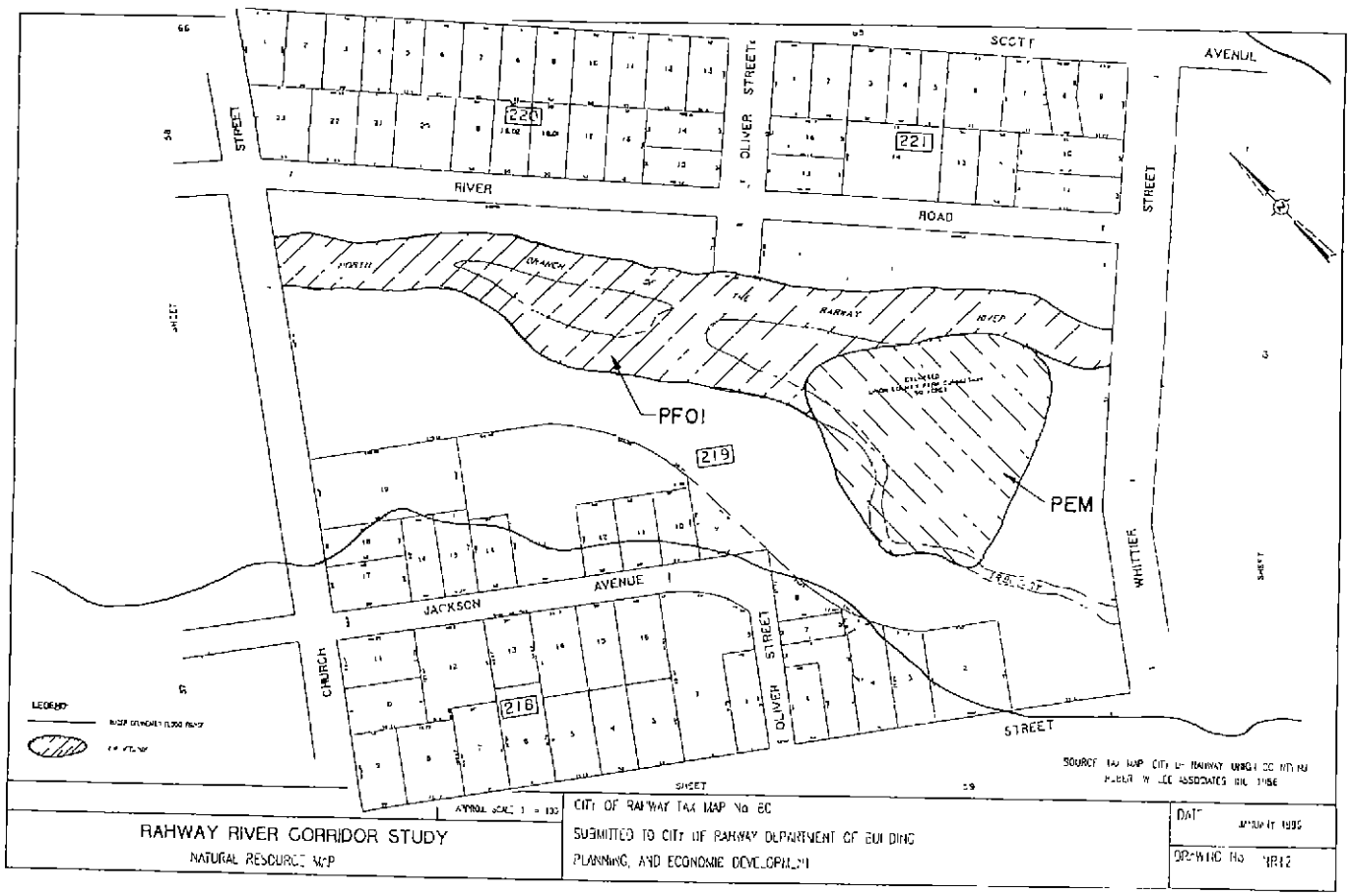
SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT

DATE JANUARY 1990

DRAWING No NR1C



RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No. 58 SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DATE JANUARY 1986 DRAWN No. NR11



RAHWAY RIVER CORRIDOR STUDY

NATURAL RESOURCE MAP

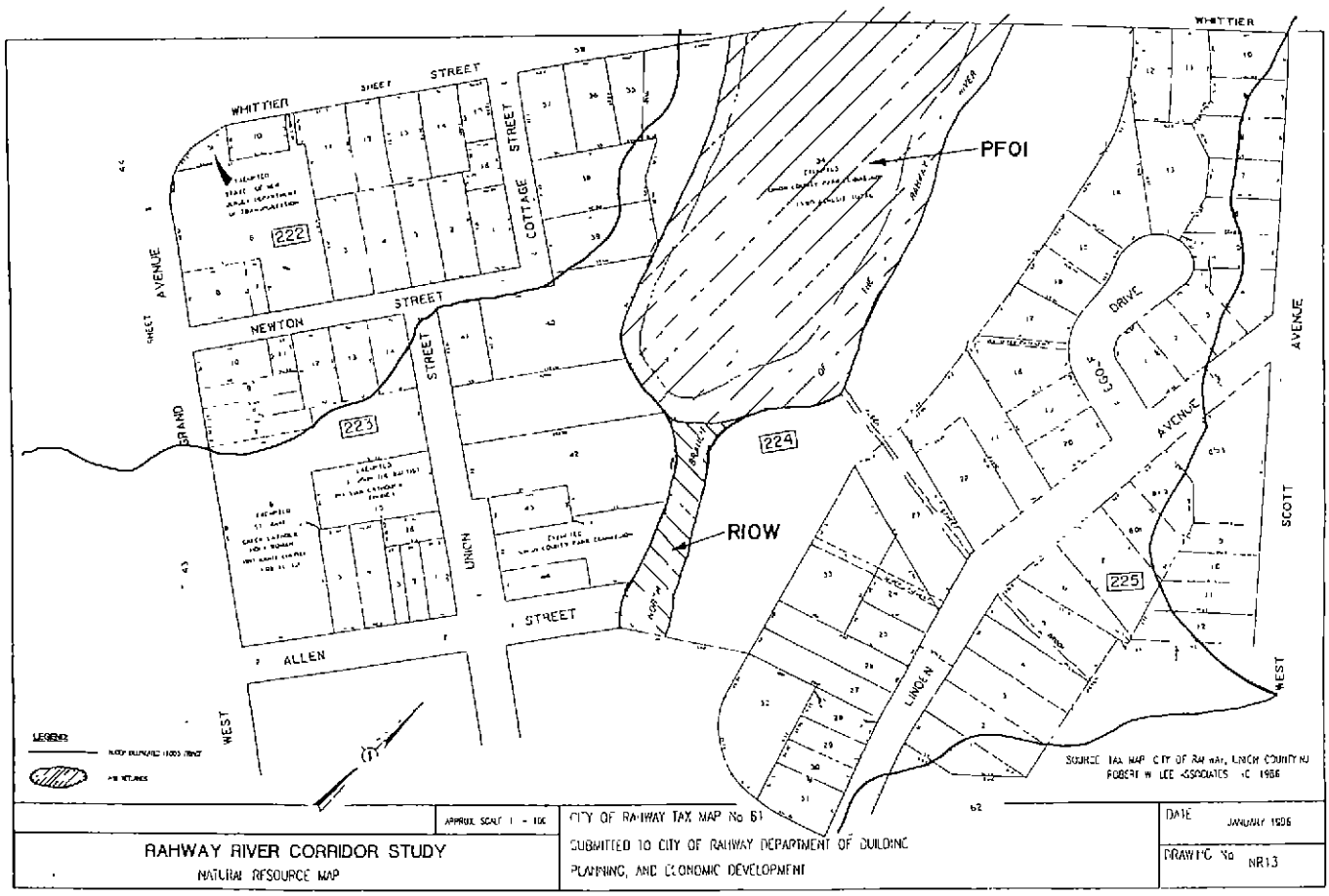
CITY OF RAHWAY TAX MAP No 60

SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING

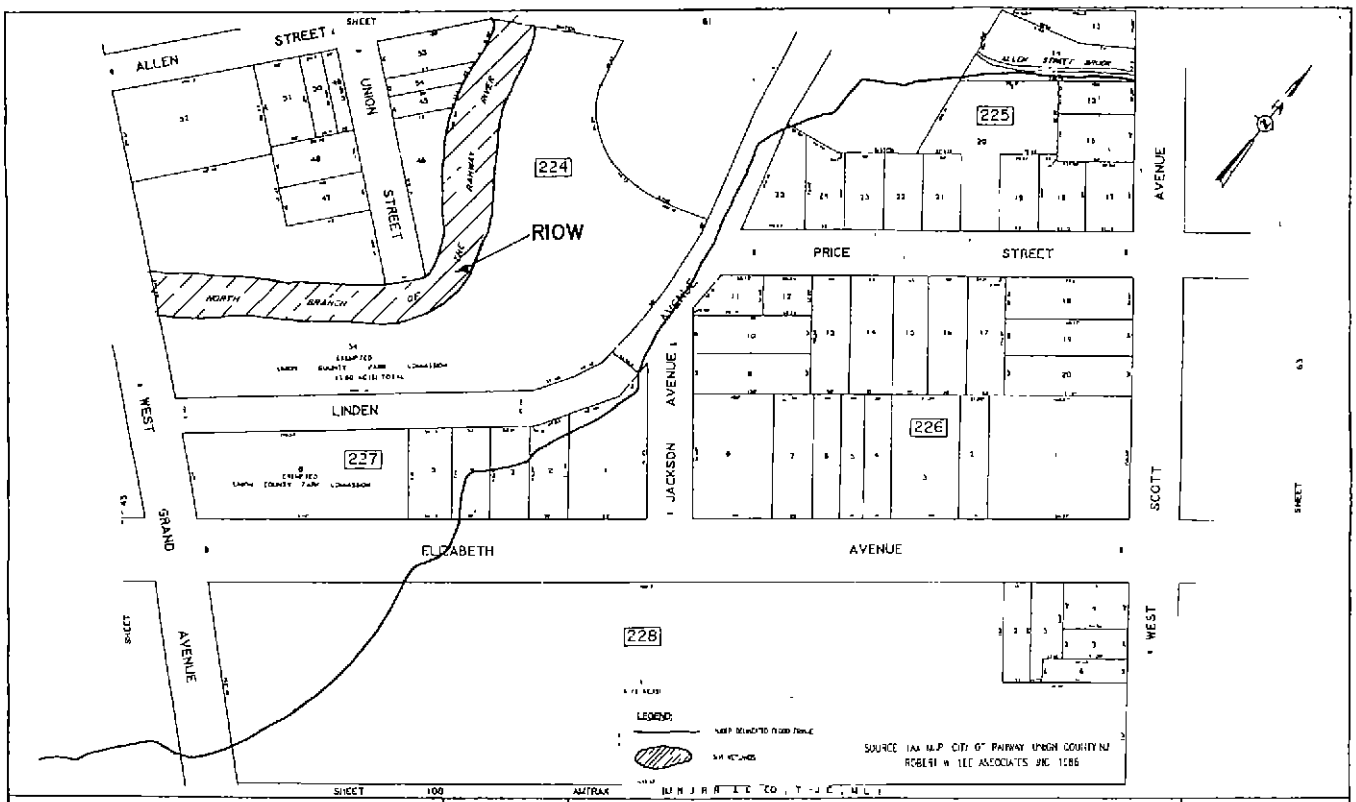
PLANNING, AND ECONOMIC DEVELOPMENT

DATE JANUARY 1995

DRAWING No 1812



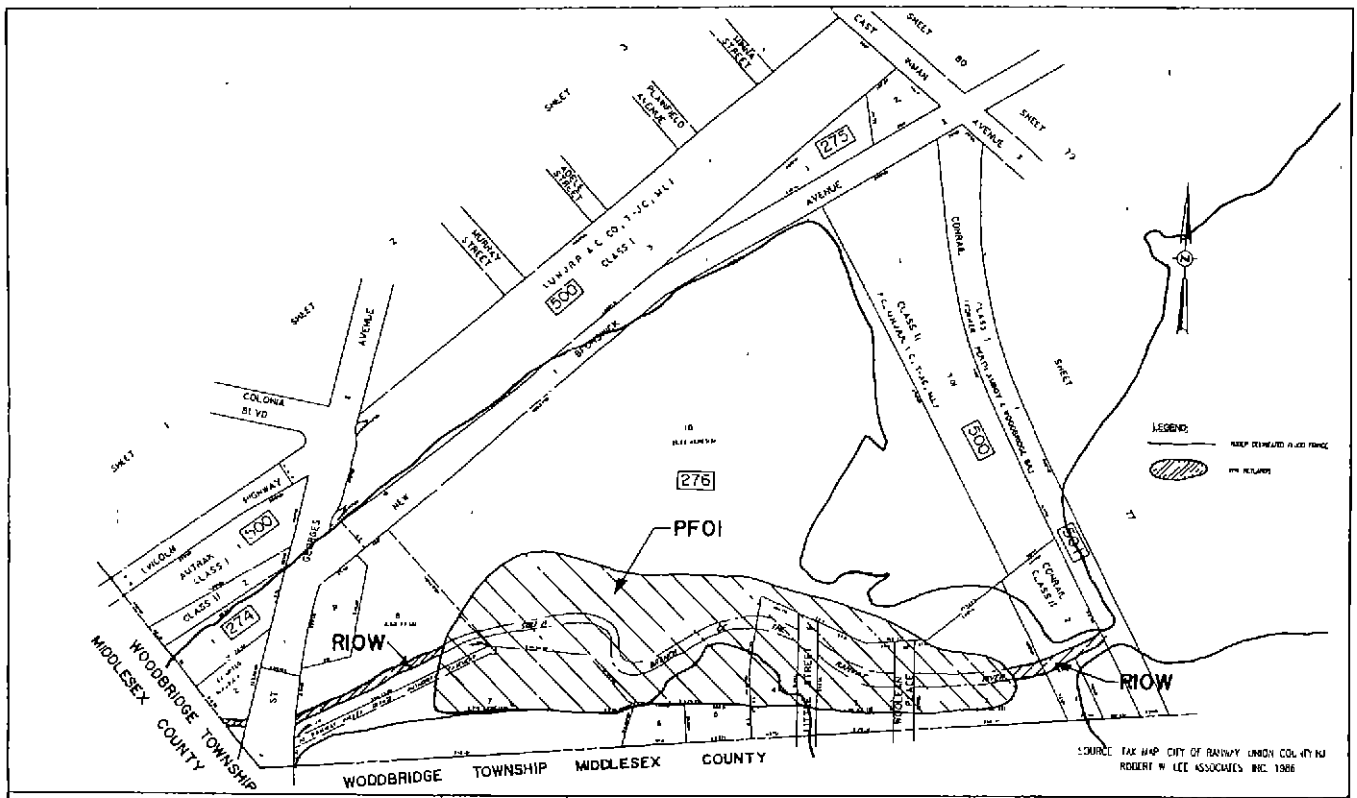
	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 61
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT
		DATE JANUARY 1986
		DRAWING No NR13



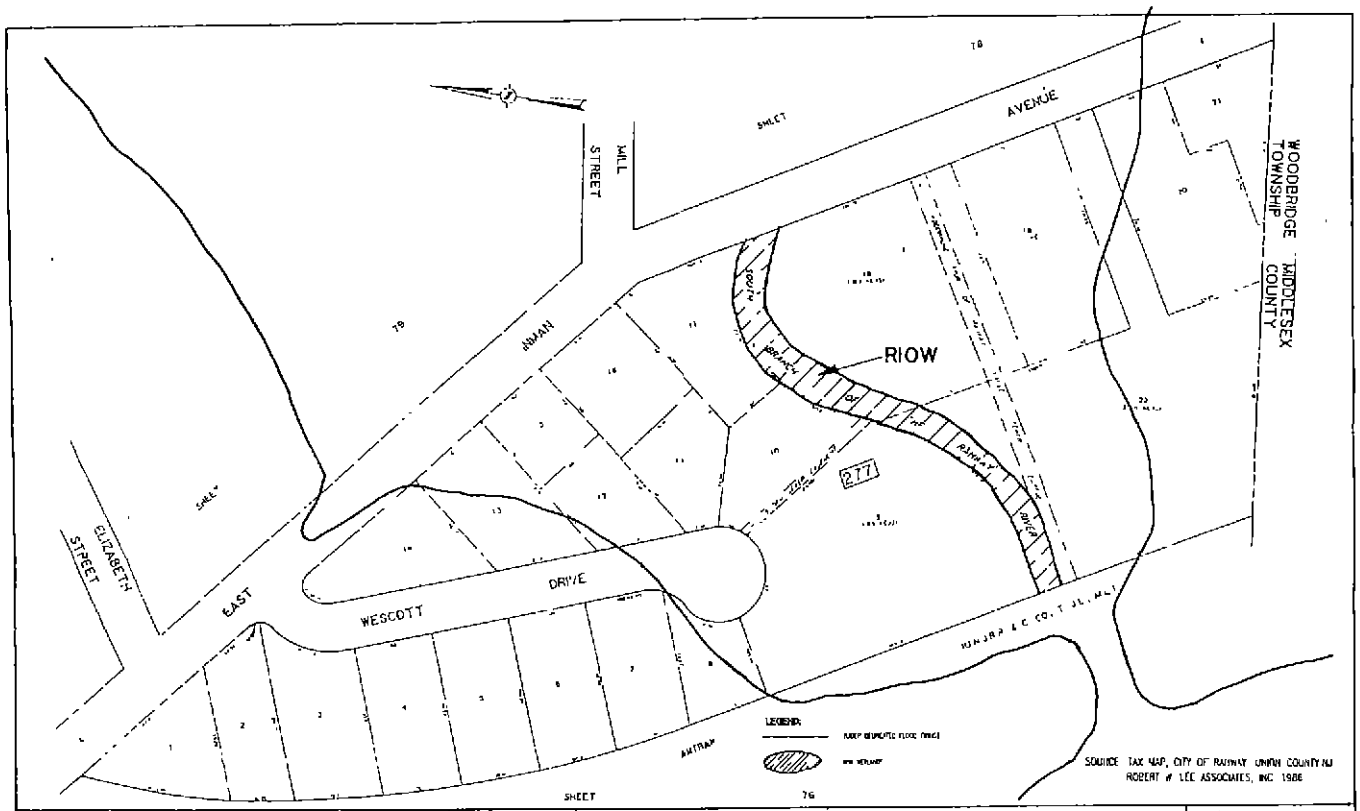
	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No. 62
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT

DATE: JANUARY 1990

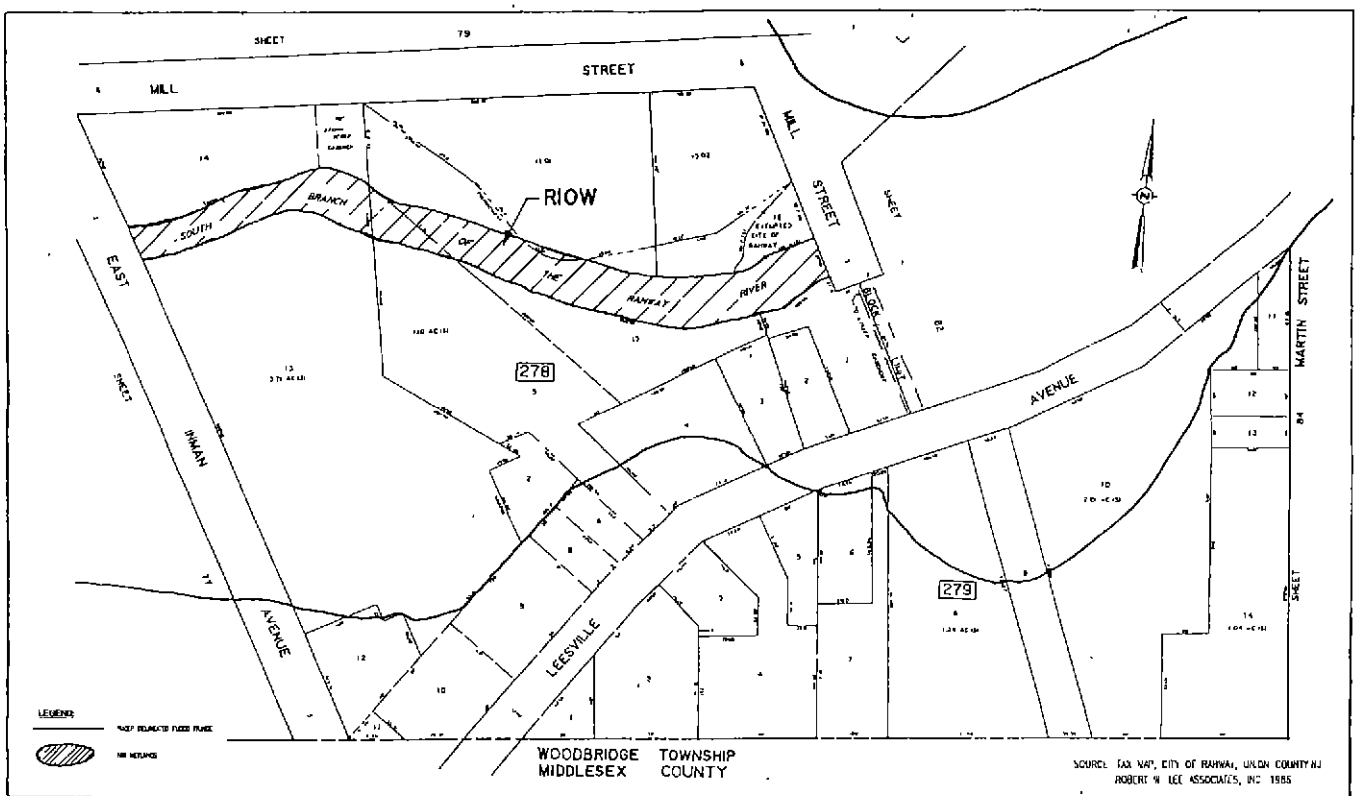
DRAWING No. NR14



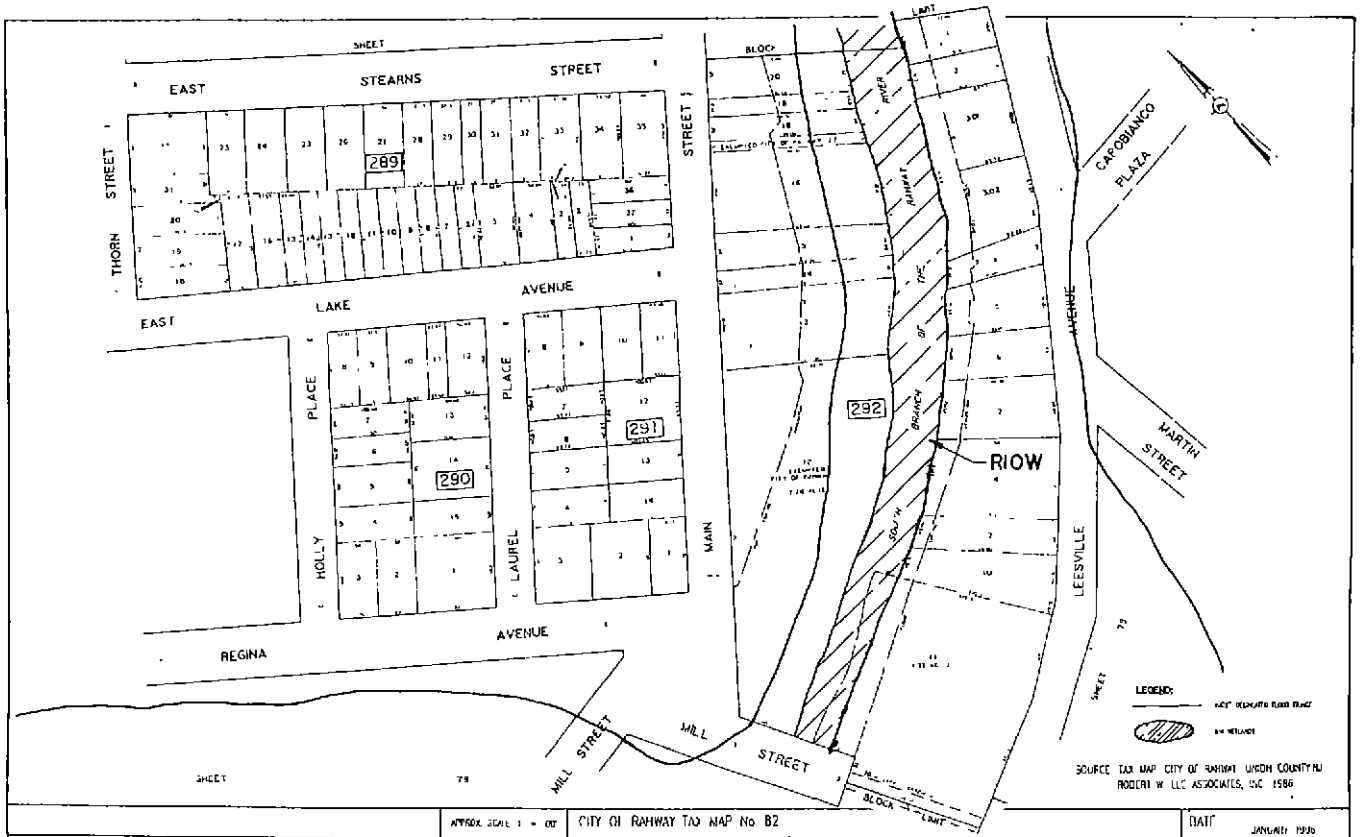
	APPROX. SCALE: 1" = 200'	CITY OF RAHWAY TAX MAP No 76	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No NR15



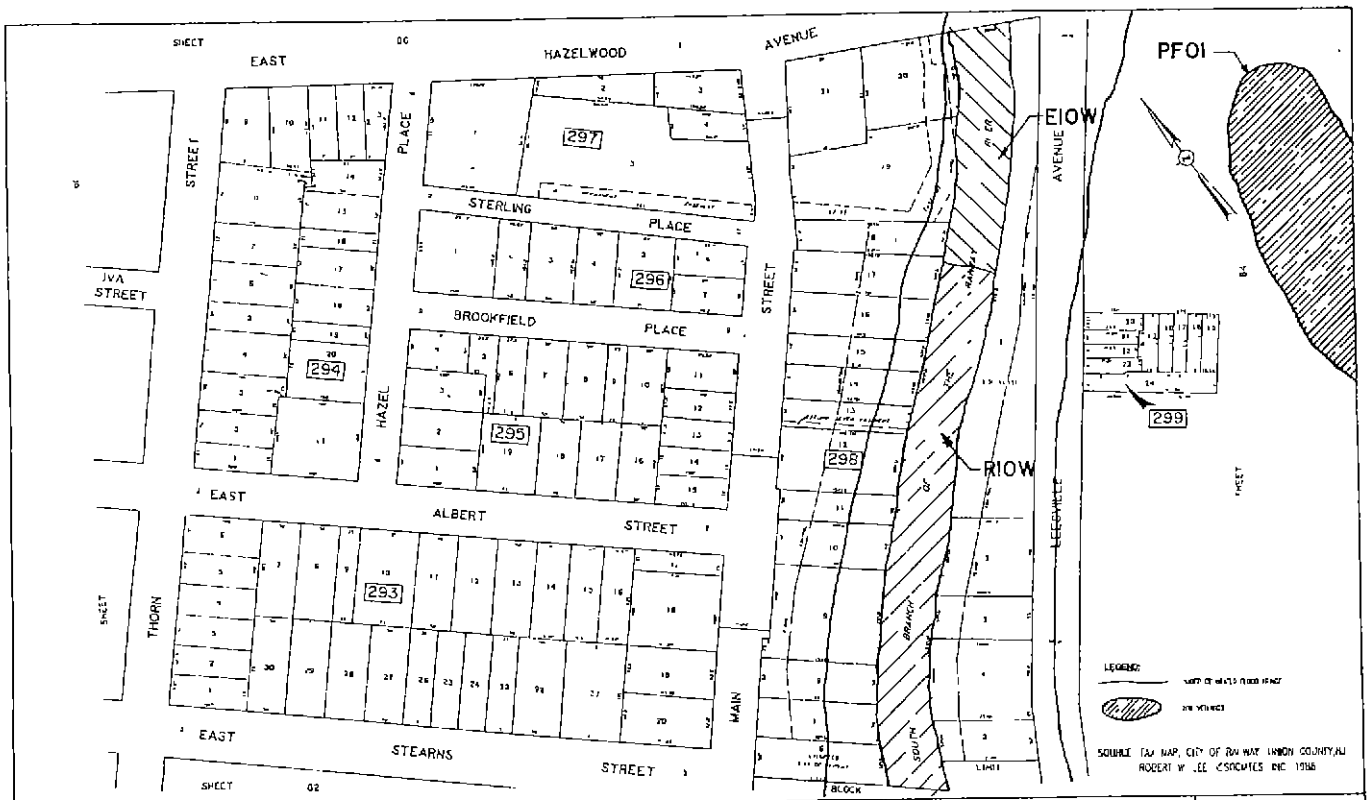
	APPROX SCALE 1 = 100	CITY OF RAHWAY TAX MAP No 77	DATE JANUARY 1986
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No HR16



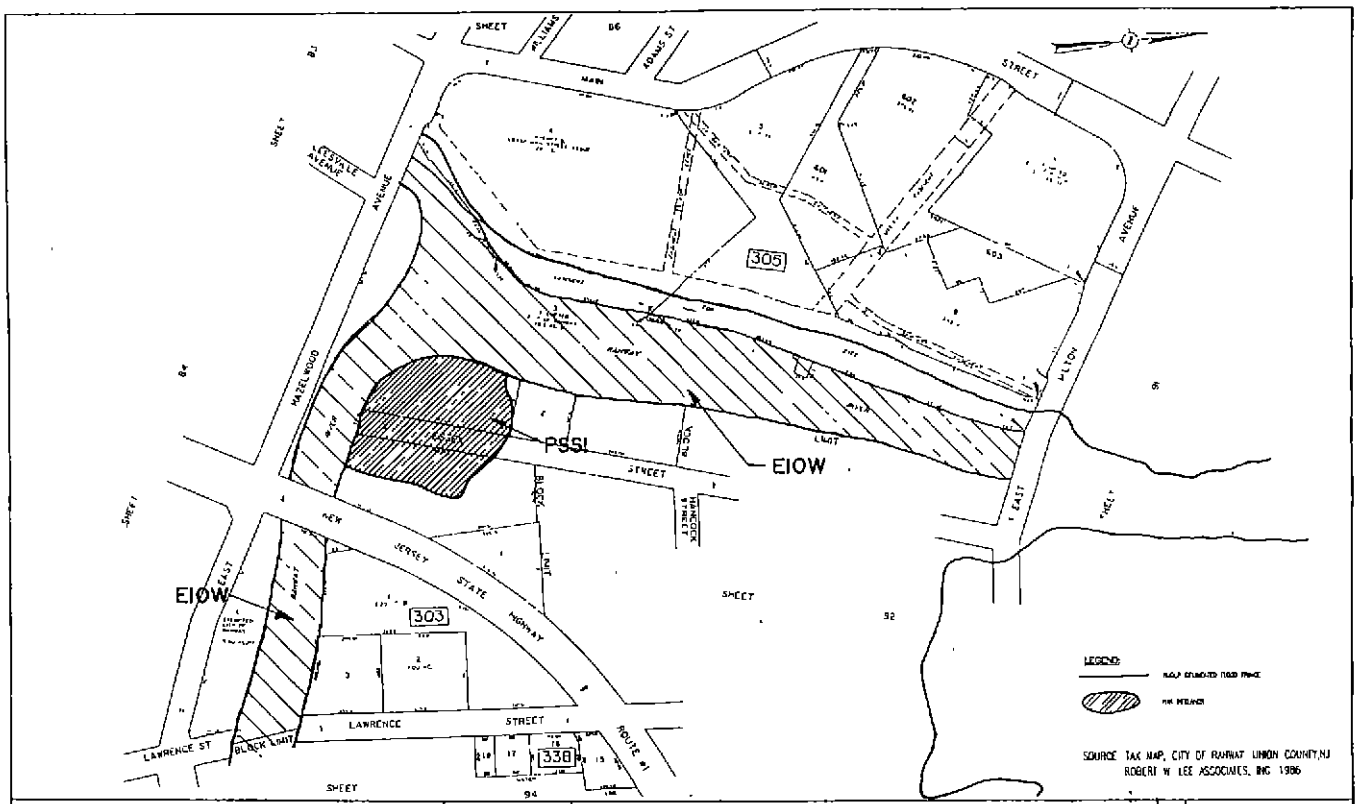
	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 78	DATE JANUARY 1986
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No NR17



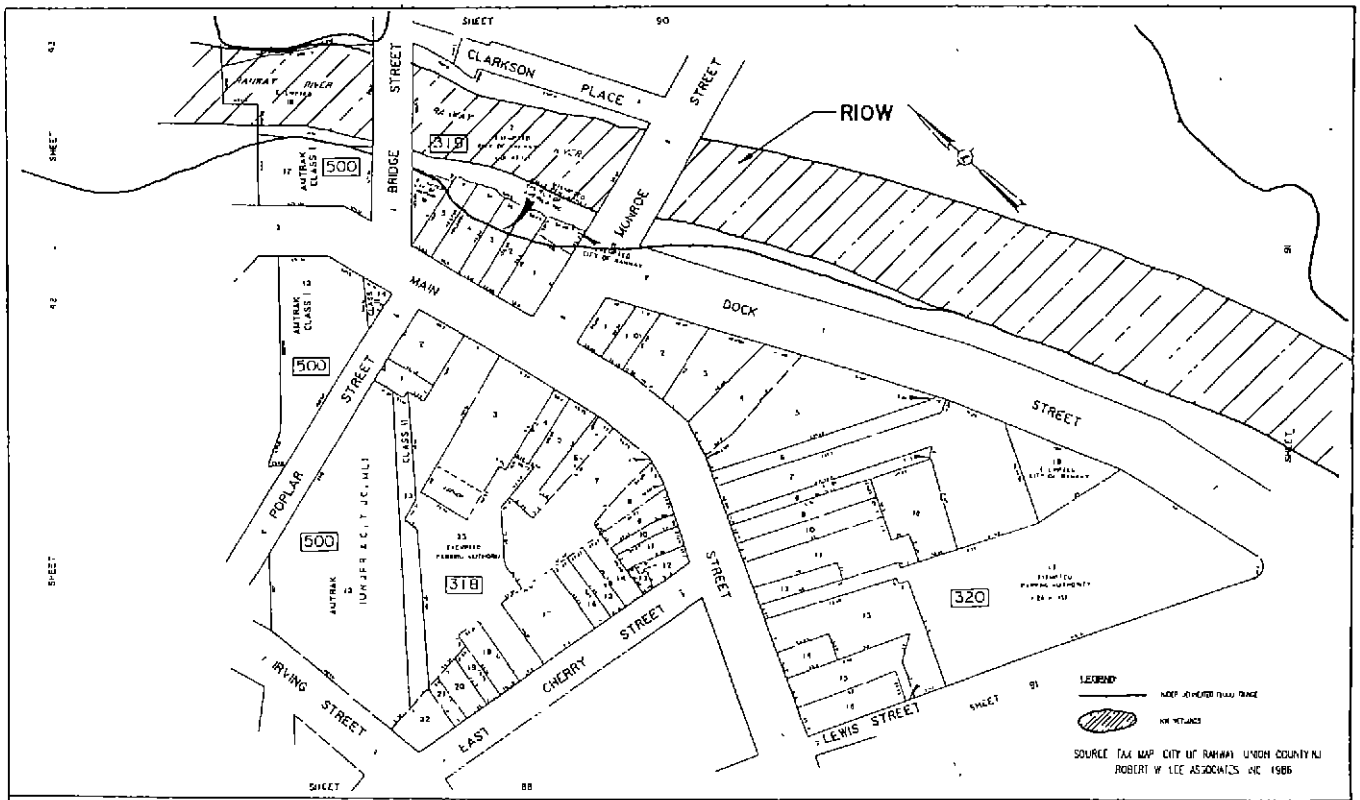
	APPROX. SCALE 1" = 80'	CITY OF RAHWAY TAX MAP No 82	DATE JANUARY 1990
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No NR1H



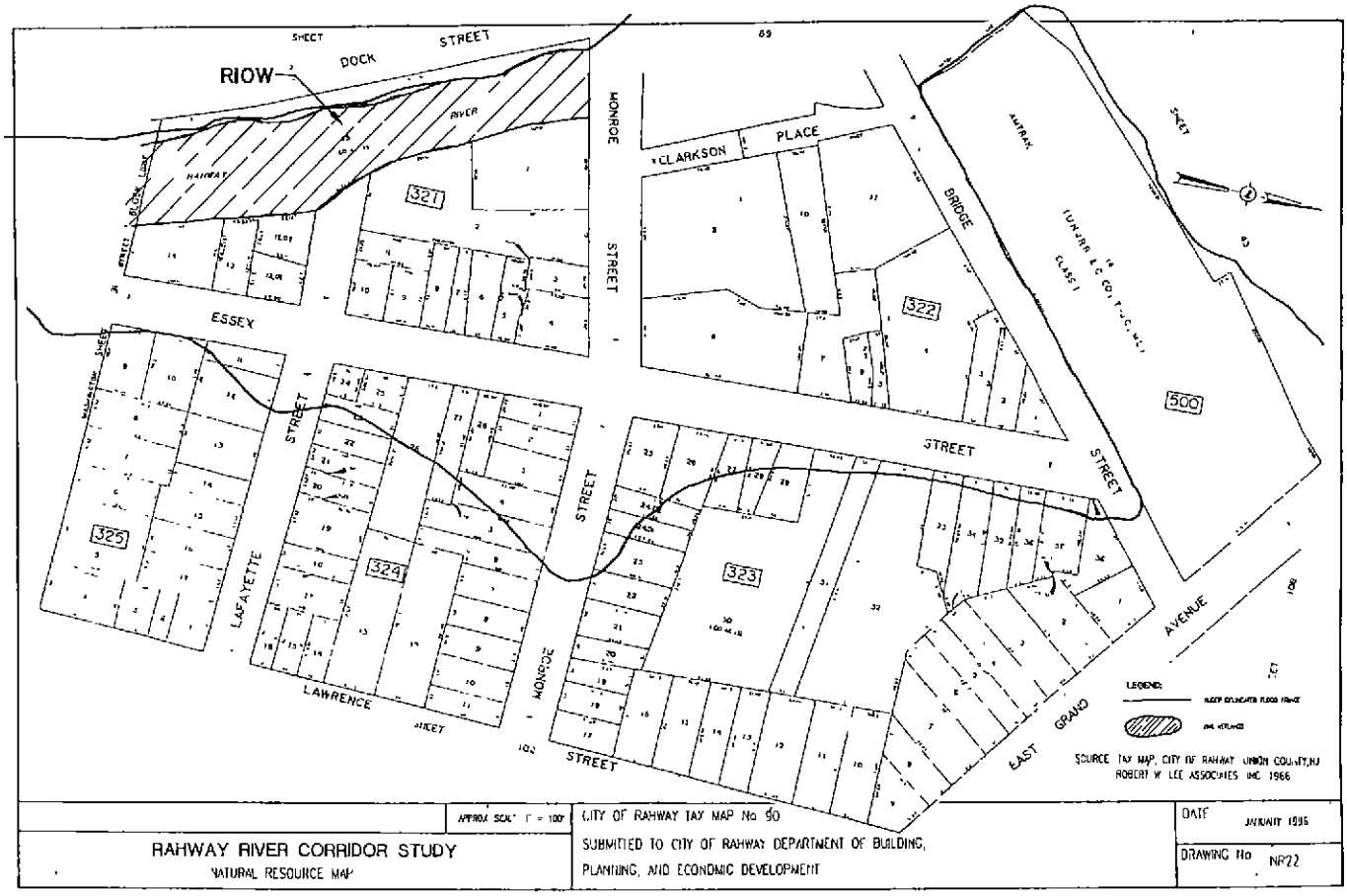
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 81 SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT
		DATE JANUARY 1989 DRAWING No NR19



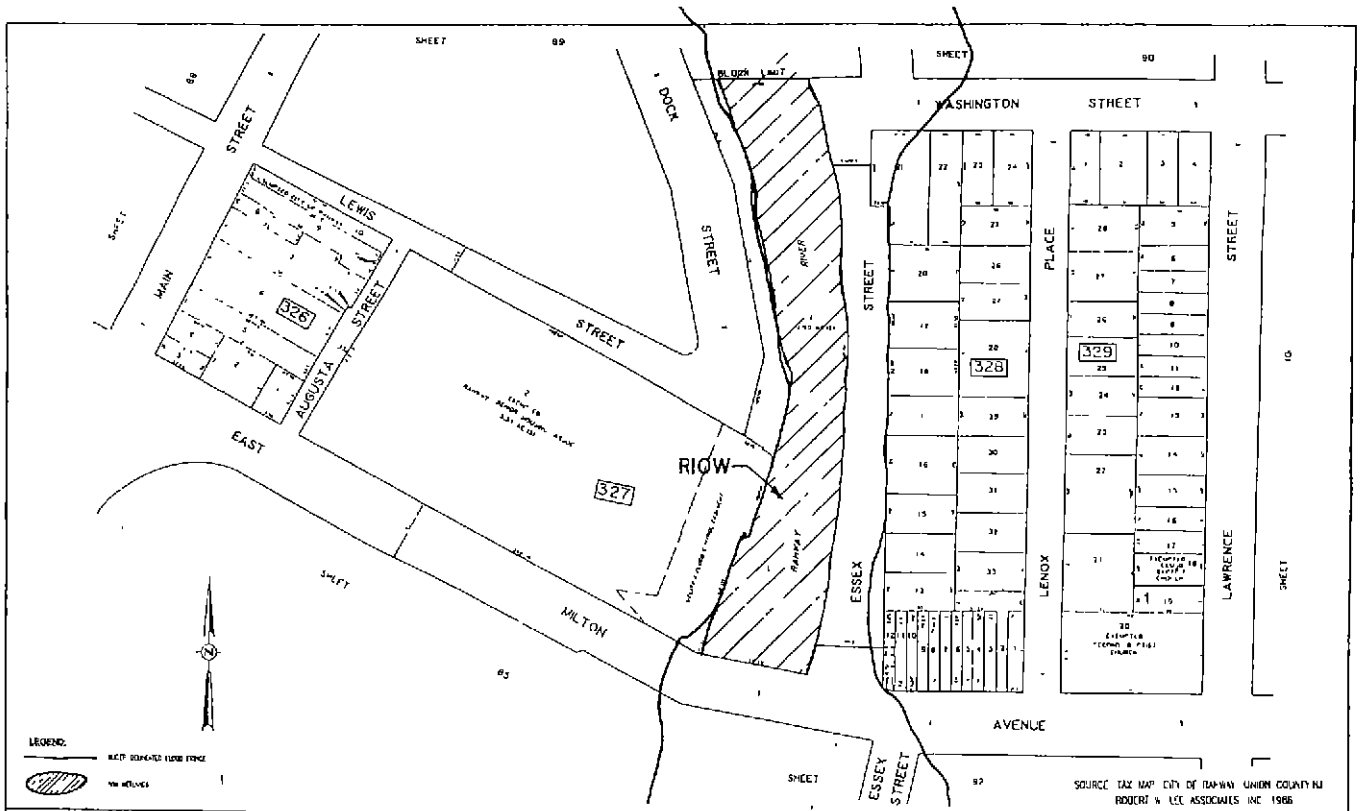
	APPROX. SCALE 1" = 200'	CITY OF RAHWAY TAX MAP No 85	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No NR2D



RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP	CITY OF RAHWAY TAX MAP No 89 SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT	DATE JANUARY 1986 DRAWING No NR21



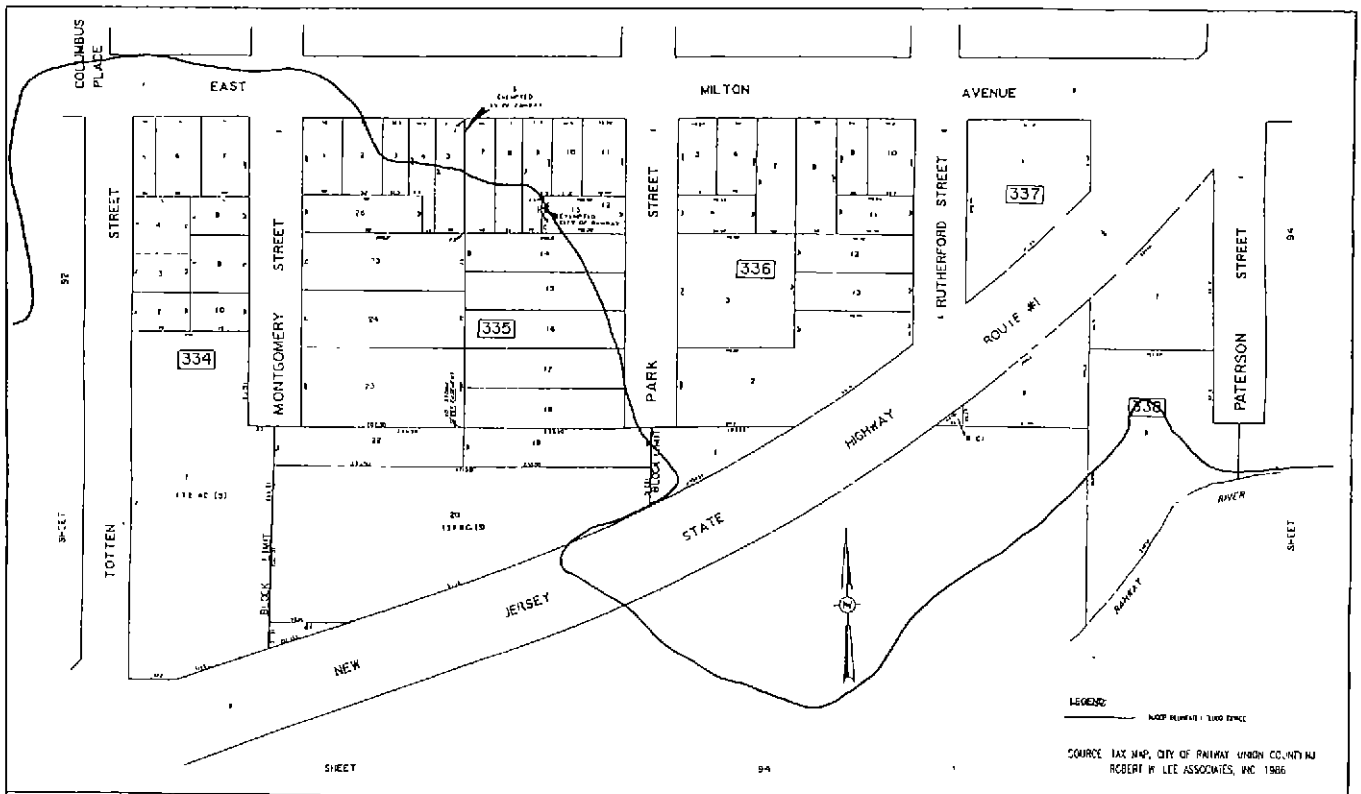
	APPROX SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No. 90
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT
		DATE JANUARY 1995
		DRAWING No NR22



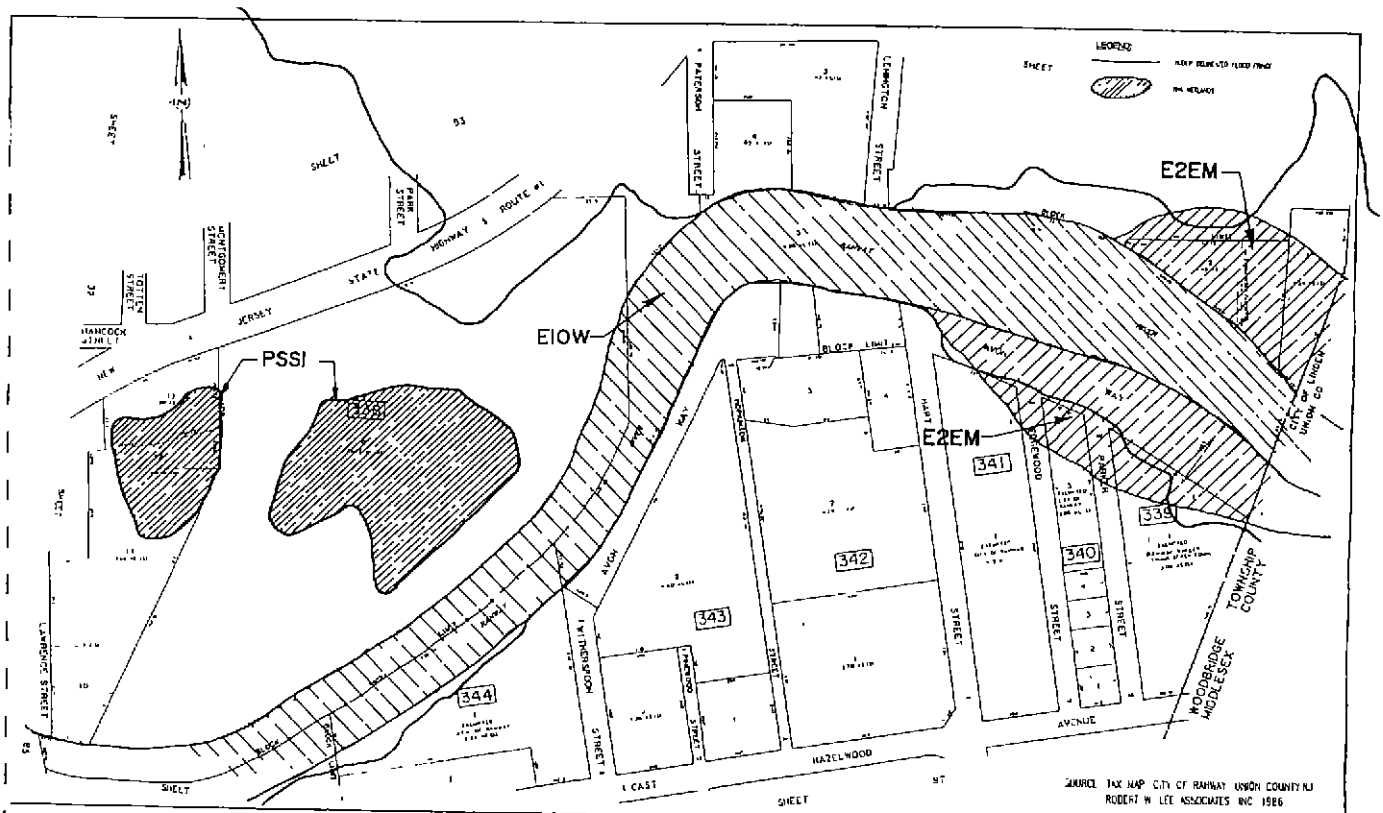
	APPROX. SCALE 1" = 100'	CITY OF RAHWAY TAX MAP -No 91
RAHWAY RIVER CORRIDOR STUDY		SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING
NATURAL RESOURCE MAP		PLANNING, AND ECONOMIC DEVELOPMENT

DATE JANUARY 1996

DRAWING No NR23



APPROX SCALE 1" = 100'	CITY OF RAHWAY TAX MAP No 93	DATE JANUARY 1996
RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP	SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT	DRAWING No NR24



RAHWAY RIVER CORRIDOR STUDY

NATURAL RESOURCE MAP

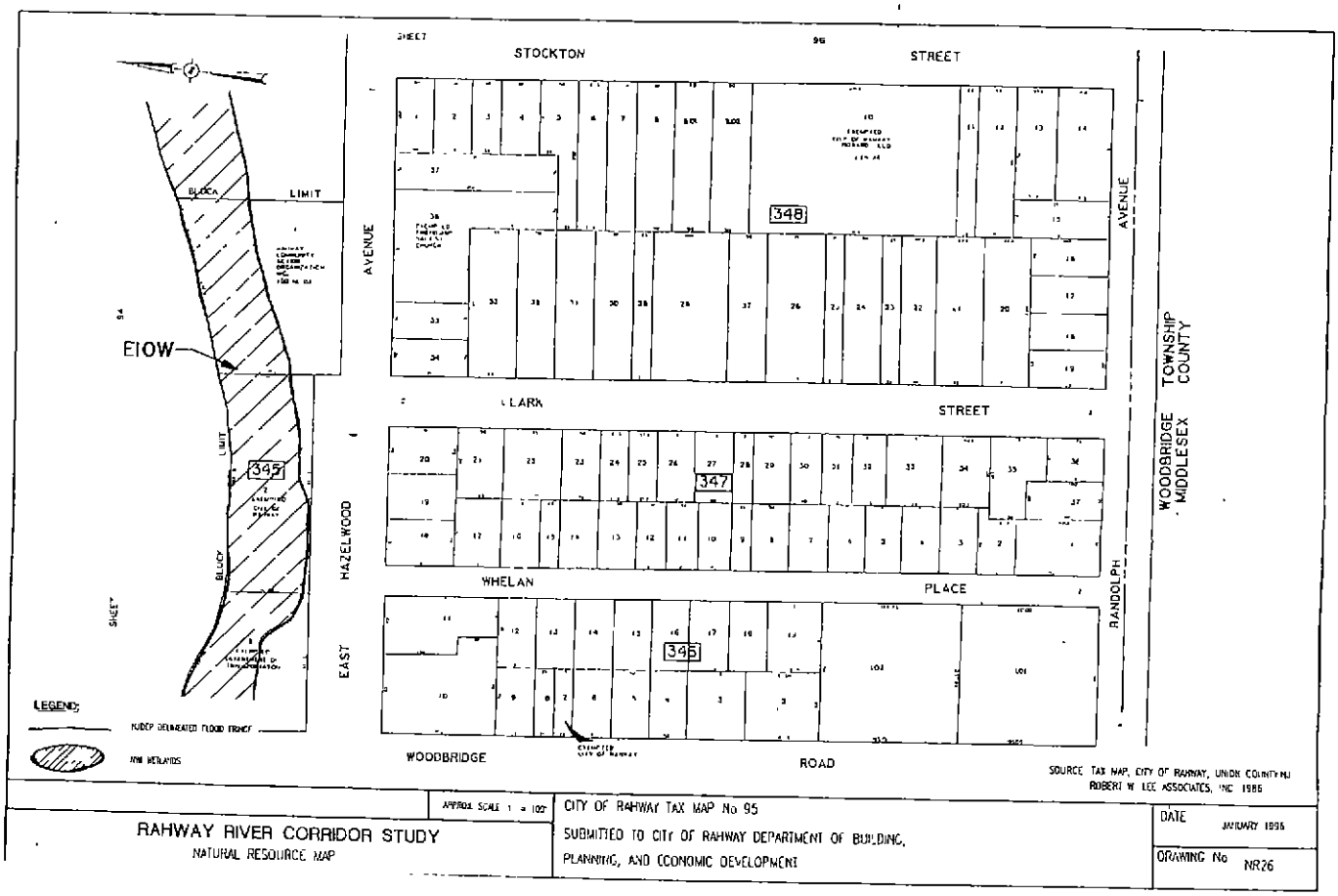
APPROX. SCALE 1" = 200'

CITY OF RAHWAY TAX MAP No 94

SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT

DATE JANUARY 1990

DRAWING No NR25



APPROX. SCALE 1 = 100'

RAHWAY RIVER CORRIDOR STUDY

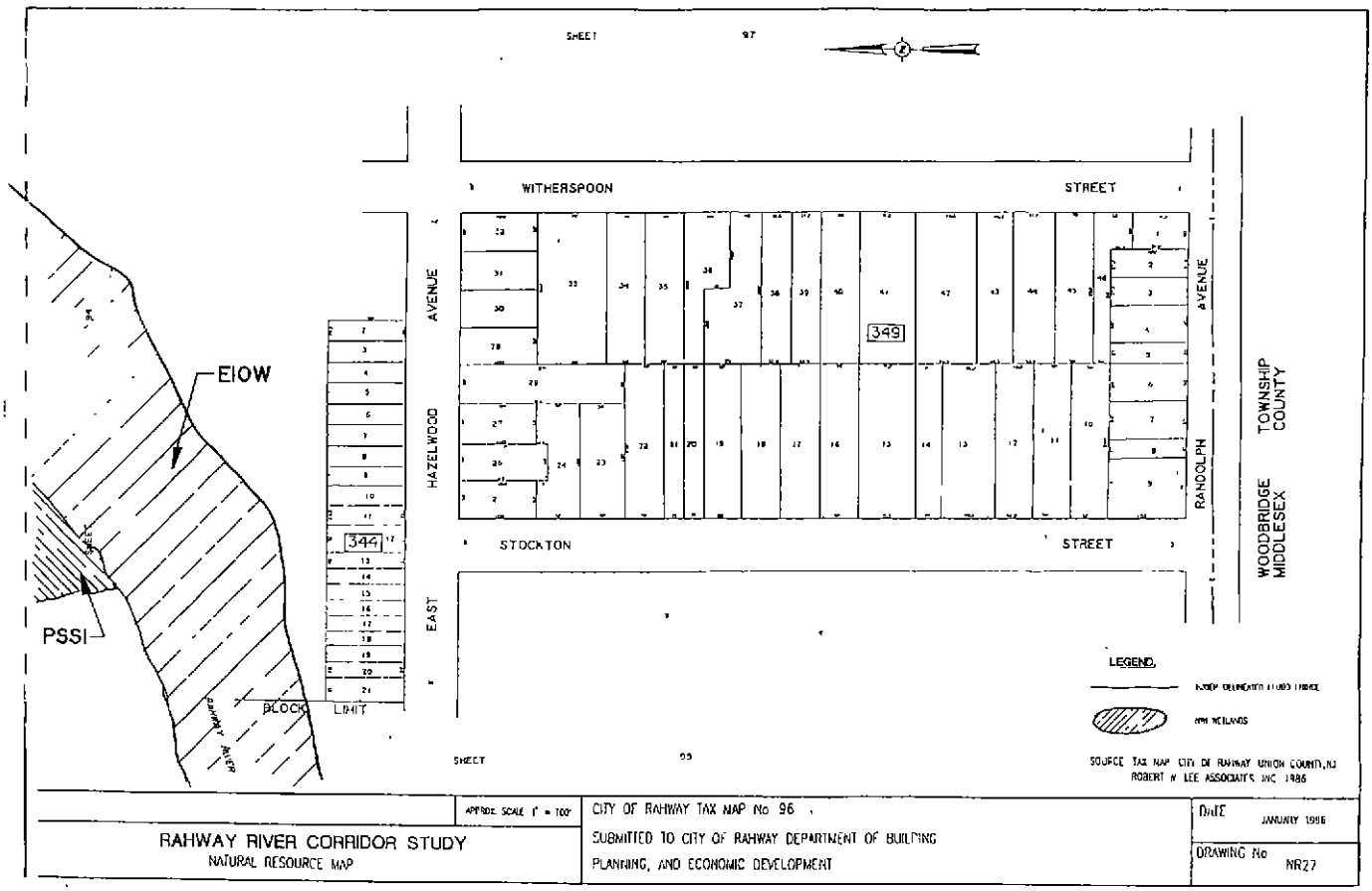
NATURAL RESOURCE MAP

CITY OF RAHWAY TAX MAP No 95

SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING, PLANNING, AND ECONOMIC DEVELOPMENT

DATE JANUARY 1996

DRAWING No NR26



RAHWAY RIVER CORRIDOR STUDY NATURAL RESOURCE MAP	APPROX. SCALE 1" = 700'	CITY OF RAHWAY TAX MAP No 96 SUBMITTED TO CITY OF RAHWAY DEPARTMENT OF BUILDING PLANNING, AND ECONOMIC DEVELOPMENT	DATE JANUARY 1996 DRAWING No NR27