



Matawan Borough

MASTER PLAN

MONMOUTH COUNTY, NEW JERSEY
ADOPTED OCTOBER 5, 2015

Prepared By





Matawan Borough Unified Planning and Zoning Board of Adjustment

Ken Cassidy, Chairman (Class IV)
John McKenna, Vice Chairman (Class IV)
Paul Buccellato, Class I
Robert Montfort, Class II
Donna Gould, Class III
Angelo Gallego, Jr., Class IV
Joseph A. Urciuoli, Class IV
Rickey Butler, Class IV
Dan Acquafredda, Class IV
Andrew Lopez, Alt. II
Rochelle Malanga, Alt. IV

Michael Irene, Jr., Board Attorney
Nancy Jo Palermo, Recording Secretary
Robert W. Bucco, Engineer/Planner

Matawan Borough Council

Paul Buccellato, Mayor
Linda Clifton, Council President
Michael Caldon, Councilperson
Kimberly Daly, Councilperson
Donna Gould, Councilperson
Andy Lopez, Councilperson
Joseph Urbano, Councilperson

Louis Ferrara, Borough Administrator
Pasquale Menna, Borough Attorney

Master Plan Committee

Rickey Butler
Joe Saporito
Joe Urciuoli
Dan Acquafredda

Special thanks to Karen Wynne, Borough Clerk and Robin Klinger, Deputy Clerk

T&M Associates

Robert R. Keady Jr., PE, CME, T&M Associates
Stanley C. Slachetka, PP, AICP, T&M Associates
Nicholas A. Dickerson, PP, AICP, T&M Associates
Jeffrey Cucinotta, T&M Associates

Matawan Borough Master Plan

Adopted October 5, 2015

Prepared for:

Matawan Borough
Monmouth County, New Jersey

Prepared by:



11 Tindall Road
Middletown, NJ 07748

A handwritten signature in black ink, appearing to read 'N. Dickerson', written over a horizontal line.

Nicholas A. Dickerson, PP, AICP
NJ Professional Planner No.: 06287

A handwritten signature in black ink, appearing to read 'S. Slachetka', written over a horizontal line.

Stanley C. Slachetka, PP, AICP
NJ Professional Planner No.: 03508

*The original of this document was signed
and sealed in accordance with New Jersey Law*

Executive Summary



This document represents the first “new” master plan in the Borough of Matawan since 1965, with a new vision statement, goals and objectives, and land use recommendations. In an environment of rapid post-war growth that spurred the creation of the 1965 Master Plan, the goals and objectives of Matawan, like many other New Jersey suburban communities, focused on how to direct future growth. In the half century that has passed since the adoption of the Borough’s first Master Plan, Matawan has matured from a growing community, fueled by its proximity to rail transit and the Garden State Parkway, into a fully-developed municipality. Matawan has reached a point where undeveloped land has become scarce; consequently, future growth will occur primarily through redevelopment.

New Jersey’s Municipal Land Use Law requires each of the state’s 565 municipalities to reexamine their Master Plans every 10 years. Matawan’s 2014 reexamination report recommended that the Borough’s Master Plan, initially adopted in 1965 and amended over the 50 years that followed, be edited and brought current as a single document in order to recognize the present character of Matawan. In addition to the updated vision statement, goals, objectives, and land use recommendations, this document also includes the Borough’s other planning elements, so that they are compiled into a single, comprehensive document.

This Master Plan approaches future growth from the perspective of a fully-developed town. Matawan will need to maintain, rehabilitate, repair, renovate, renew, adapt, redevelop, retrofit, revitalize, and manage its existing natural and developed assets to ensure that the Borough remains an attractive community with an appropriate mix of land uses that provide for the health, safety, and general welfare of all of its residents.

The recommendations outlined in this municipal Master Plan refine and clarify the existing framework, to meet the needs of residents, visitors, businesses and investors today and well into the future.

Table of Contents

GOALS AND OBJECTIVES	1
Prior Plans (1965-2007)	1
2014 Reexamination	2
Moving Forward (2015)	3
Matawan Vision	5
Demographics and Municipal Baseline	7
Demographics	7
Development Patterns	10
LAND USE PLAN ELEMENT	12
Introduction	13
Summary of Land Use Issues	14
Existing Land Use	14
Future Development Potential	15
Land Use Plan	15
Recommended Zoning Changes	22
Consistency with Neighboring Plans	23
Introduction	23
Analysis of Surrounding Communities	23
Monmouth County	24
State Development and Redevelopment Plan (SDRP)	25
Action Plan and Next Steps	26
Maps	28
Existing Conditions Map	28
Environmental Constraints Map	28
Land Use Plan Map	28
Downtown Land Use Plan Map	28
Existing Zoning Map	28
Train Station Redevelopment Map	28
Other Plans	29
• Housing Plan Element	29
• Stormwater Management Plan Element	29
• Transit Station Redevelopment Plan and Amendment	29



List of Tables

Table 1: Municipal population density in relation to other New Jersey Municipalities. (Source: New Jersey Department of Labor)9

Table 2: Vacant land by zoning district in Matawan15

Table 3: Vacant residential land in Matawan that is not entirely covered by water or wetlands.15

List of Figures

Figure 1: Matawan's 1965 Master Plan has helped guide the development of the Borough for the past 50 years. _ 1

Figure 2: Matawan's population, 1940-2010, US Census _____ 7

Figure 3: Age Distribution Projections for 2032 in Monmouth County and New Jersey. (Source: New Jersey Department of Labor) _____ 7

Figure 4: Selected US Census Demographics for Matawan Borough, 2000 and 2010 _____ 7

Figure 5: Matawan total distribution (top), and by gender (below). (Source: 2009-2013 American Community Survey) _____ 8

Figure 6: Commute Times for Monmouth County and Matawan Borough. (Source: 2009-2013 American Community Survey) _____ 9

Figure 7: Industry by occupation of Matawan residents (Source: 2009-2013 American Community Survey) _____ 10

Figure 8: From top to bottom: retail and office space development in Matawan, building permit and CO activity in Matawan from 1990-2012, and the value of owner occupied housing units in Matawan. (Sources: New Jersey Department of Labor and New Jersey Department of Community Affairs) _____ 11

Figure 9: Aerial imagery (clockwise from above) in 1930 and 1970 indicate that land use patterns have changed little in Matawan's downtown, when compared to 2012. Patterns of suburbanization into agricultural lands are seen beginning in parts of the 1930 imagery, and more so in the 1970 photos, eventually leading to near complete buildout. _____ 12

Figure 10: Matawan Borough, as illustrated in the 1872 F.W. Beers Atlas _____ 13

Figure 11: As the graphics above illustrate from left to right, land use patterns in Matawan have changed little between 1995 and 2007. Source: New Jersey DEP _____ 14

Figure 15: Rendering of the proposed C-Town Redevelopment _____ 17

Figure 14: Matawan's Post Office and residential areas along Main Street incorporate a variety of architectural styles and building materials, while adopting similar close "build-to" lines that encourage pedestrian traffic. _____ 18

Figure 12: Residential areas in Matawan's Main Street Corridor are characterized by a variety of different historic architectural styles. Their close proximity toward the downtown has also made them amenable to residential/professional office mixed-use. _____ 18

Figure 13: The Northern Corridor district is characterized by a mix of architectural styles, land uses, lot sizes and setbacks. _____ 19

Figure 16: Matawan and Aberdeen have both been in the process of redeveloping the area around the train station. _____ 21



GOALS AND OBJECTIVES

The Borough of Matawan Master Plan is intended to guide the long-term growth and development of the Borough. The Municipal Land Use Law requires that all Master Plans contain a statement of principles, assumptions, policies and standards upon which the constituent proposals for the physical, economic and social development of the municipality are based. The Goals and Objectives Element of the Master Plan satisfies this requirement and provides the foundation for the other components of the Plan.

Prior Plans (1965-2007)

The Borough of Matawan adopted its first Master Plan in 1965. The Borough Planning Board subsequently adopted a revised Master Plan in 1978. The primary goal of the 1978 Master Plan revision was “...to achieve a realistic approach for maintaining the existing residential and commercial character, while providing for quality development of the few remaining vacant tracts within the Borough.”

In 1982, the Planning Board completed its first reexamination of the Master Plan and Development Regulations that were adopted in 1978. The Reexamination Report found that, at the time of adoption of the 1978 Plan, Matawan’s principal concern was the orderly development of approximately 100 acres of remaining undeveloped land in the fully developed Borough and the preservation of Matawan’s existing neighborhoods. The reexamination concluded that the only significant change since 1978 had been the electrification of the railroad and the development and improvement of the Railroad Station Plaza. The

reexamination recommended that no changes to the Master Plan were needed.

In 1989, the Planning Board completed a second reexamination and adopted a new Reexamination Report and a new Master Plan Housing Element. The report noted that the Borough had limited potential for growth due to the lack of vacant land, and emphasized the importance of the conversion of existing structures to conform with existing uses and neighborhood character. It also considered the external impacts of increased traffic on the major highways and arterials in

Matawan from adjacent municipalities, the increased utilization of the Matawan train station, and the impact of future development on the economic strength of the Central Business District.

In 1995, the Planning Board completed its third reexamination and adopted a new Reexamination Report. The report found that there had been no significant changes in the Master Plan assumptions, policies, and objectives since 1989. It did, however, identify the Downtown

Preservation District, Historic Sites, and Downtown Parking as areas of concern. Specifically, it noted the incompatibility of commercial and residential land use in and near the Downtown Preservation District, the demolition or alteration of historic sites, and insufficient parking in the Downtown area. The 1995 reexamination recognized that the State Plan, adopted in 1992, identified Matawan as an urban center and classified Lake Lefferts and Lake Matawan as environmentally sensitive.

In 2001, Matawan prepared “The Redevelopment Plan for the Designated Redevelopment Area in the Vicinity of the Matawan Train Station.”

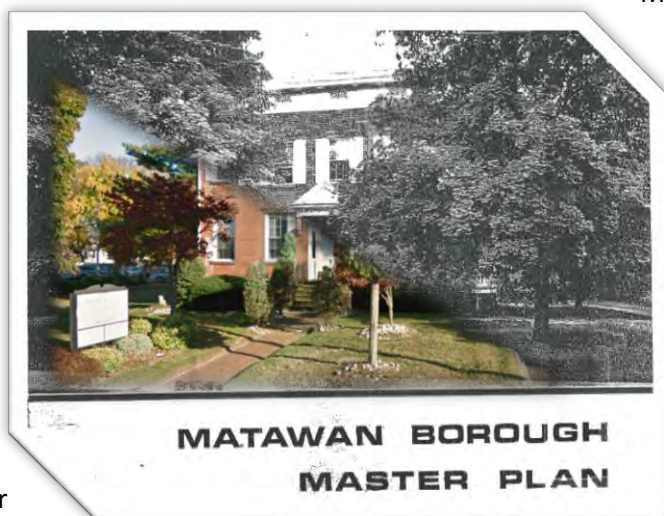


Figure 1: Matawan's 1965 Master Plan has helped guide the development of the Borough for the past 50 years.

Subsequently, in 2003, the Planning Board completed its fourth reexamination and adopted a Reexamination Report and a new Master Plan Housing Element and Land Use Plan. The reexamination concluded and reaffirmed that the goals and objectives of the 1978 Master Plan continued to provide an appropriate guide for the development and redevelopment of the Borough. It also noted that, to conform to the requirements of the New Jersey Fair Housing Act and the New Jersey Municipal Land Use Law, the Master Plan needed a Housing Element to address low and moderate income housing need. It further noted the need to revise the land use element to recognize recently approved projects and the Redevelopment Plan for the Redevelopment Area in the Vicinity of the Matawan Train Station.

In January 2007, Beacon Planning and Consulting completed a main street revitalization planning study for the Borough. The Borough commissioned the study to serve as the basis for enhancing the economic vitality of the Main Street business district through physical and programmatic improvements. The study identified the following development objectives and opportunities:

- Establish a heightened sense of community pride in Matawan by creating a cohesive and attractive Main Street business district
- Provide a comprehensive and coordinated long-range plan to guide the growth, development, and physical improvements that are necessary to ensure the continued vitality of the Borough's Main Street business district
- Establish a prioritized list of improvements for the Main Street business district that would be implemented over a period of time
- Expand retail activity within the Main Street business district through the following activities:
 - Recruit more retail businesses
 - Increase customer traffic
 - Improve signage within the business district
 - Improve the exterior appearance of buildings

- To enhance the physical appearance of the Main Street business district through comprehensive and integrated streetscape improvements, building renovations, and related physical improvements
- Encourage the cooperation of merchants, property owners, residents and government in the overall revitalization of the Main Street business district
- To encourage public and private investment in the Main Street business district
- To encourage uses and activities that will bring vitality to the Main Street business district, as well as increased pedestrian presence
- Enhance the use of existing parking facilities and identify additional opportunities for additional off-street parking facilities so that the demand generated by retail activity can be met in a manner that encourages patronage of Main Street businesses, as well as stopping business owners and their employees from clogging key parking locations and providing more effective parking signage.

2014 Reexamination

The 2014 Reexamination Report recommended updates to the assumptions, objectives, policies and elements of the Borough's master plan that would reflect the changes to Matawan's built landscape since the plan's initial adoption in 1965. The report described that due to the limited amount of remaining undeveloped land, the Borough's development potential has become increasingly limited. As a result, future development would largely consist of redevelopment and improvements to existing structures rather than with new development. This changes the planning paradigm that is currently in place, managing the direction of growth, to one that manages the quality of growth.

The Borough's 2014 Master Plan Reexamination Report recommended the following changes:



- Revise the underlying assumptions, objectives, policies and standards of the Master Plan to reflect that Matawan is a fully-developed town.
- Revise the Master Plan land use element to include a sub-element focused on Main Street and downtown revitalization that offers a vision and recommendations for Main Street's future, in order to revitalize the area as a destination within Matawan.
- Amend the Master Plan to include a Circulation Plan Element that addresses circulation and parking issues in the downtown.
- Modify the redevelopment area plan for the Railroad Improvement District to meet existing market conditions and demands, as well as reflect the changes that have been made to the state's Local Redevelopment and Housing Law (LRHL).
- Amend the Master Plan as appropriate to comply with future affordable housing requirements.
- Amend the Master Plan to include an element on recreation and open space to address the current needs of Borough Residents.
- Revise zoning and development regulations to facilitate the revitalization of the downtown area to increase flexibility as a way to welcome a greater range of businesses. This could be done in conjunction with a rehabilitation designation for the downtown to adopt area-specific redevelopment plans.

Public Meeting and Outreach Process

The Master Plan Committee and its planning consultants introduced its findings at a workshop meeting of the Borough's Unified Planning/Zoning Board on September 9, 2015. Public notice announcing a Planning Board hearing on the Master Plan was published on September 25, 2015, and the hearing was held on October 5, 2015.

Moving Forward (2015)

Matawan's decision to revise its Master Plan was a direct result of the recommendations made in the 2014 Reexamination Report. The Borough appointed a Master Plan committee, consisting of representatives from the Planning/Zoning Board, including: Dan Aquafredda, Rickey Butler, Joe Saporito, and Joe Urciuoli. This committee met with planning consultants from T&M Associates starting in the spring of 2015 to provide local input and feedback on existing conditions and a future vision for the Borough.



GOING FORWARD, THE CHALLENGE TO THE BOROUGH WILL BE TO MAINTAIN, REHABILITATE, REPAIR, RENOVATE, RENEW, ADAPT, REDEVELOP, RETROFIT, REVITALIZE, AND MANAGE THE BUILT ENVIRONMENT TO ENSURE THAT MATAWAN REMAINS AN ATTRACTIVE COMMUNITY WITH AN APPROPRIATE MIX OF LAND USES THAT MEETS THE NEEDS AND EXPECTATIONS OF BOROUGH RESIDENTS.

--2014 MASTER PLAN REEXAMINATION

- Zoning guidelines do not sufficiently protect spatial character of downtown
- Underutilized area around train station
- Lack of southern focal point “gateway” to bookend train station
- Funding for historic façade improvements
- Adequate measures in place to manage future development that typify historic character
- Congestion around train station parking

Strengths, Weaknesses, Opportunities and Threats

From the review of previous planning documents and discussions with the Master Plan Committee, the following summary of strengths, weaknesses, opportunities and threats served as a guide for the preparation of the Master Plan.

Strengths

The characteristics of Matawan that serve as advantages over other areas.

- Existing pedestrian-oriented development patterns
- Access to rail transit service
- Small town “feel”
- Access to commuter bus service
- Proximity to Henry Hudson Rail Trail
- Proximity to Garden State Parkway
- Historic character
- Affordability
- Natural assets, such as the lakes, and proximity to parks and recreation

Weaknesses

The characteristics of Matawan that function as disadvantages.

- Outdated zoning regulations that limit types of new businesses
- Availability of parking

Opportunities

External elements that Matawan can utilize to its benefit.

- Market shift toward favoring walkable and transit-oriented communities
- Potential New Jersey Transit service expansions (express service, increased service, MOM-Matawan alignment)
- Rising costs of living in urbanized areas near New York City
- Waypoint between Jersey Shore and Bayshore Region

Threats

External elements that could be detrimental to Matawan.

- Developments that are not in keeping with community character
- Inadequate upkeep of historic properties
- Lack of guided investment in downtown
- Business not directed toward downtown
- New Jersey Transit service and fares
- Episodic flooding in low-lying areas on High Street approaching train station
- Algae blooms affecting Lake Matawan



Matawan Vision

The Borough will need to manage change to protect and enhance stable neighborhoods to advance its longstanding goal of maintaining the existing residential and commercial character of the community, and provide for quality development that does not drastically alter the development the historic development patterns of Matawan.

For all intents and purposes, Matawan is a fully developed town. Matawan has limited ability to absorb additional residential and commercial growth due to the scarce amount of vacant developable land. In moving forward, Matawan needs to maintain, rehabilitate, repair, renovate, renew, adapt, redevelop, retrofit, revitalize, and manage the town's environment to ensure that Matawan remains an attractive community with an appropriate mix of land uses that provide for the health, safety, and general welfare of all of its residents.

Goal 1: Maintain Matawan's existing residential, historic, and commercial character, while providing for quality development.

- Consider revising the zoning ordinance to place greater emphasis on building design than specific uses as a way to protect and enhance existing development patterns, while reducing barriers for new commercial development.
- Promote mixed-use development in Matawan's downtown districts.
- Explore branding opportunities that set the borough apart from neighboring municipalities. Branding can be direct (similar to Aberdeen's street signs), or indirect (physical layout, design, amenities).
- Recognize the importance of key nodes that serve as gateways into Matawan's downtown.
- Adopt and implement a complete streets policy to offer safe alternatives to automobile use.
- Investigate the feasibility of identifying shared-road bikeways that link the Henry Hudson Trail to important destinations in the Borough.

Goal 2: Matawan's past development pattern should not be drastically changed, and future development proposals should be compatible with surrounding areas.

- Consider zoning ordinance revisions and design standards that protect and enhance existing development patterns, while reducing barriers for new commercial development.
- Revise, as appropriate, municipal ordinances to reflect and encourage development patterns of a "built out" community (e.g. renovations, improvements, redevelopment, community development, community beautification).
- Develop a Circulation Plan Element for the Borough that addresses traffic flow and parking issues in the downtown.
- Examine potential development incentives for shared parking and bicycle parking.
- Explore potential connections to the Henry Hudson Trail. Support changes to land use and development regulations that improve bicycle connections to downtown businesses and residential areas.
- Pursue a downtown Rehabilitation Plan with targeted Redevelopment Plans

Goal 3: The Borough is required to address an affordable housing obligation, even though little vacant developable land remains to address such needs.

- Amend the Master Plan housing element at such time as the Courts or COAH enact regulations that define the future affordable housing obligation of the Borough.
- Address the Borough fair share affordable housing obligation in accordance with the applicable COAH regulations or Court requirements.
- Protect Matawan from affordable housing litigation by seeking substantive certification of the amended housing element from COAH, or a judgment of repose from a court of competent jurisdiction.



- Incorporate provisions for affordable housing pursuant to COAH regulations or any judgement of repose as may be approved by the court for future redevelopment projects undertaken in the Borough.
 - Coordinate redevelopment with NJ Transit to maximize opportunities for redevelopment
- Continue to support the Borough's transit village designation by providing a mix of residential and commercial uses as well as a parking deck to provide parking for the new development and train station.

Goal 4: Stimulate revitalization of Matawan's downtown through the redevelopment of the Matawan Train Station area.

- Leverage redevelopment that supports and provides linkages to revitalization of the Borough's downtown.
- Modify the redevelopment area plan for the Railroad Improvement District, as appropriate, to be consistent with the recommendations of this reexamination concerning the incorporation of redevelopment plans for the station area.
- Replace existing Railroad Improvement District regulations with an amended redevelopment plan consistent with the recommendations of the 2014 Reexamination Plan
- Rely upon the present redevelopment designation of the station area and request proposals from qualified redevelopers for the redevelopment of one or more phases or parcels within the redevelopment area for transit oriented development (TOD) consistent with the guidelines and concepts of the NJDOT transit village initiative for mixed use residential, commercial, and non-residential development.
- Pursue implementation of the existing redevelopment area designation as a non-condemnation redevelopment area.
 - Amend and the redevelopment plan to implement a phased approach to redevelopment that targets and prioritizes specific properties in the redevelopment area in order to support projects that can be developed relatively quickly and spur additional redevelopment in the area.
 - Particular focus should be placed on the use of municipally-owned parcels in the redevelopment area.

Goal 5: Enhance and Transform Matawan's historic downtown into a destination that can serve residents and visitors.

- Coordinate public and private efforts for the ongoing and continuous improvement and promotion of Main Street, including a plan for parking and improved vehicular and pedestrian circulation in the downtown.
- Revise zoning and development regulations to meet the modern market demands of a walkable downtown.
- Pursue the designation of the downtown as an area in need of rehabilitation pursuant to the criteria in the Local Redevelopment and Housing Law (LRHL) in order to adopt site specific or area specific redevelopment plans for properties in the downtown.
- Adopt an economic plan element that considers all aspects of economic development and sustained economic vitality.



Demographics and Municipal Baseline

This section presents general housing and demographic information for Matawan Borough. It is important to understand demographic conditions and population trends in order to effectively plan for the Borough's present and future development. Although past trends do not necessarily predict future conditions, they can provide a baseline of existing conditions in the area and call attention to emerging trends.

Demographics

Population	2000	2010
Total	8,910	8,810 (2010) 8,755 (2013)
Male	4,400 (49.4%)	4,281 (48.6%)
Female	4,510 (50.6%)	4,529 (51.4%)
Median Age	36.4	38.3
Race		
White	7,337 (82.3%)	7,134 (81.0%)
Black	582 (6.5%)	620 (7.0%)
Asian or Other	991 (11.2%)	1,056 (12.0%)
Hispanic or Latino Population		
Total (of any race)	575 (6.5%)	949 (10.8%)
Households		
Total Households	3,531	3,358
Family Households	2,375 (67.3%)	2,279 (67.9%)
Non-Family Households	1,156 (32.7%)	1,079 (32.1%)
Housing Occupancy		
Total Units	3,640	3,606 (2010) 3,672 (2013)
Occupied Units	3,531 (97.0%)	3,358 (93.1%)
Vacant and Seasonal Units	109 (3.0%)	248 (6.9%)
Housing Tenure		
Occupied Units	3,531	3,358
Owner Occupied Units	2,067 (58.5%)	2,144 (63.8%)
Renter Occupied Units	1,464 (41.5%)	1,214 (36.2%)

Figure 4: Selected US Census Demographics for Matawan Borough, 2000 and 2010

Matawan's population has remained fairly stable since it leveled off in 1970 after a period of rapid growth. From 1970 to the 2010, the population ranged from a low of 8,837 in 1980 to a high of 9,270 in 1990. The limited amount of undeveloped land with development potential would suggest that the Borough will not experience dramatic changes in population similar to the period between 1940 and 1970. Projections from the New Jersey Department of Labor estimate that

Monmouth County's population will increase by 6% between 2012 and 2032. How this applies to Matawan is subject to further speculation. If the recent trends in market demand for walkable and transit-oriented development continue, future growth in Matawan will likely take place through the redevelopment and reinvestment of areas around the Borough's downtown and transit station.

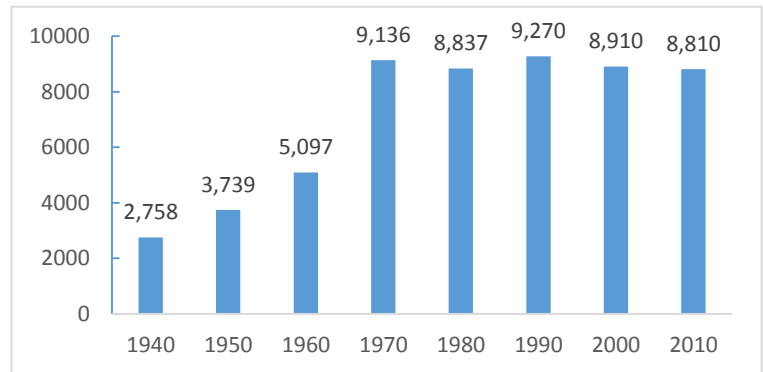


Figure 3: Matawan's population, 1940-2010, US Census

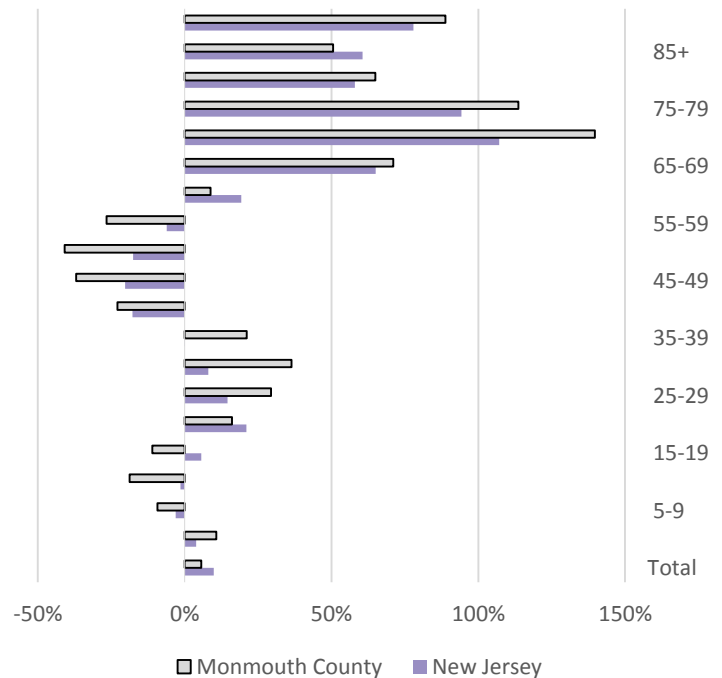


Figure 2: Age Distribution Projections for 2032 in Monmouth County and New Jersey. (Source: New Jersey Department of Labor)



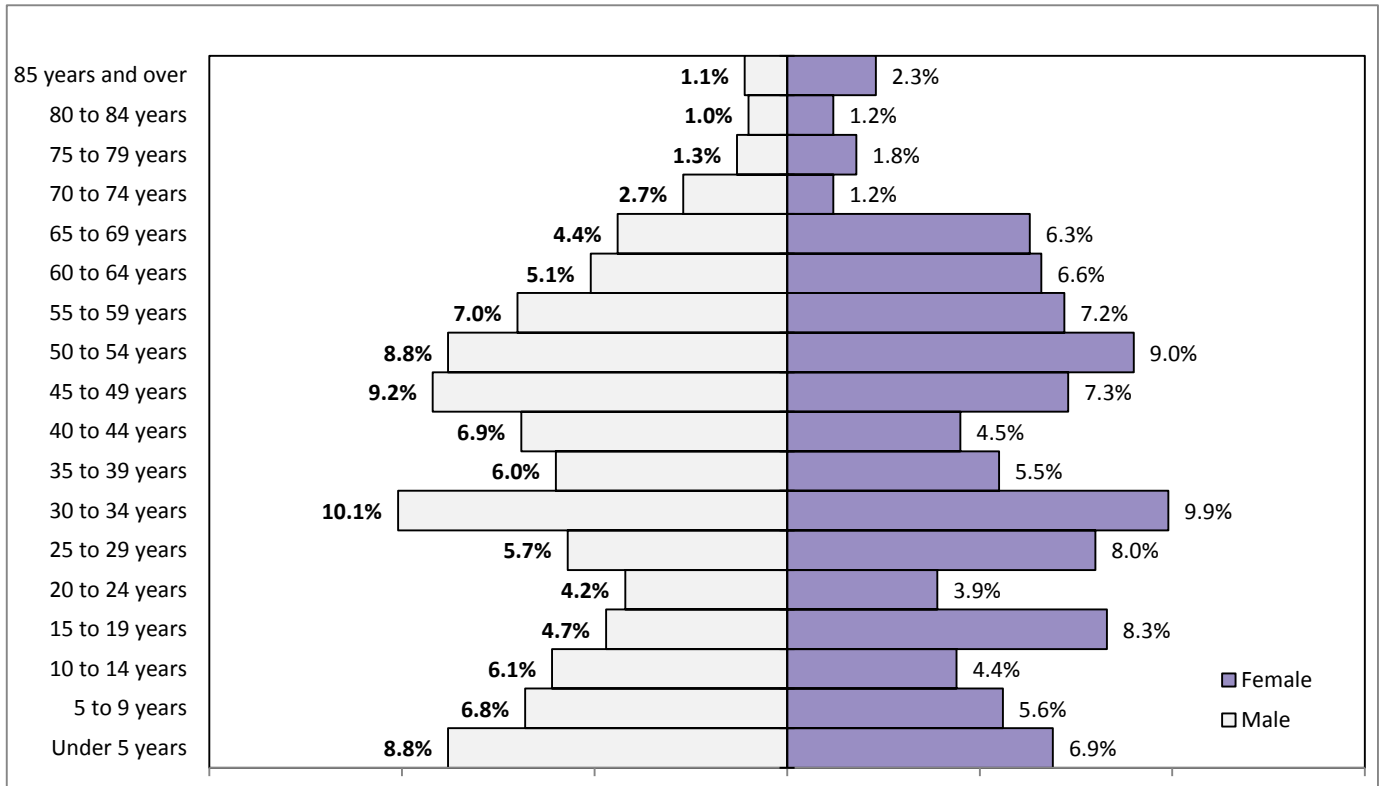
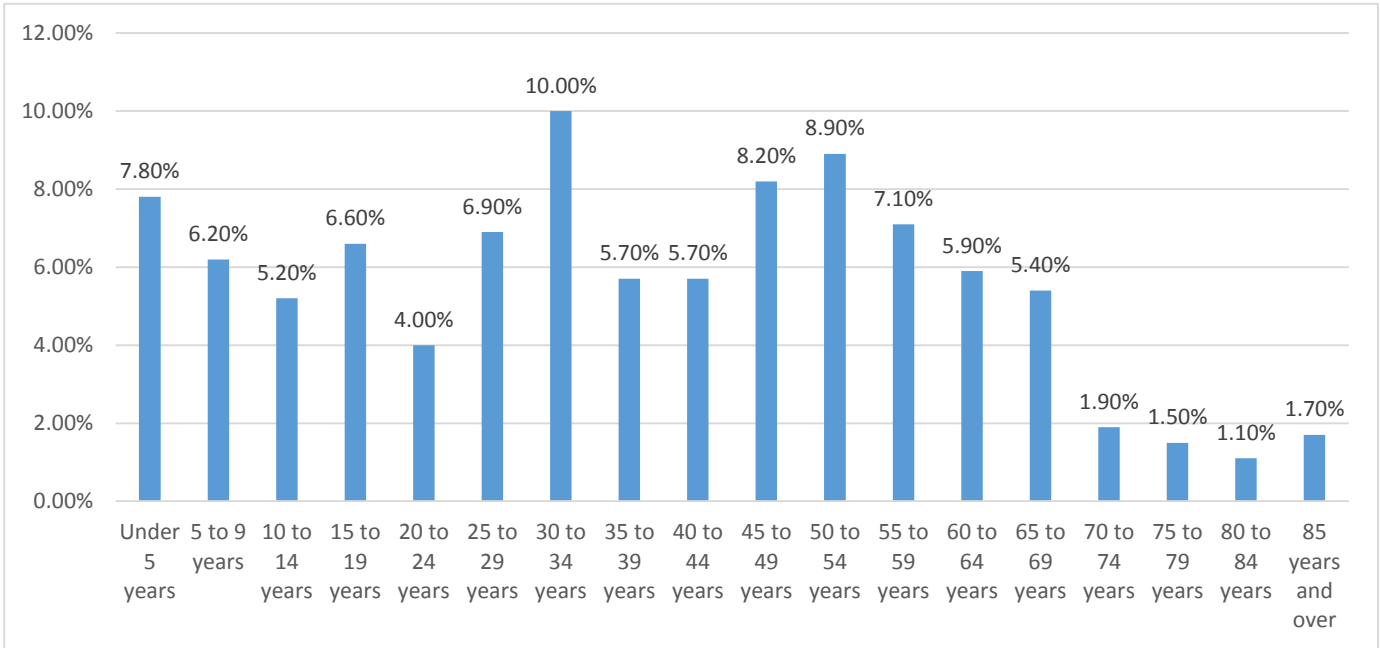


Figure 5: Matawan total distribution (top), and by gender (below). (Source: 2009-2013 American Community Survey)



Population Density

Rank	Municipality	Population Density
1	Guttenberg	58,409
2	Union City	53,207
3	West New York	51,738
...
158	Bellmawr	3,873
159	Matawan	3,872
160	Madison	3,870
...
563	Pine Valley	12
564	Washington (Burlington)	7
565	Walpack	0.67

Table 1: Municipal population density in relation to other New Jersey Municipalities. (Source: New Jersey Department of Labor)

Matawan is characterized by moderate density development, similar to other New Jersey municipalities that have developed around rail, rather than automobile transit. With an estimated 2013 population density of 3,896.5 persons/square mile, Matawan’s traditional neighborhood development patterns are more similar in character to municipalities like Madison Borough in Morris County, which is also developed around its train station, than the average for

Monmouth County (1344.7 persons/square mile), and even less so the state as a whole (1195.5 persons/square mile).

Population Characteristics

Descriptions of Matawan’s population can be interpreted from the data collected by the Census bureau and the State of New Jersey. Occupational data suggests that Matawan residents are employed in a diverse number of fields, as shown in Figure 7: Industry by occupation of Matawan residents. Based on commute data, Matawan residents tend to have longer commutes than Monmouth County as a whole for commutes over 45 minutes in duration, but also boast a higher percentage of smaller commutes (under 15 minutes) than that of the County. It is likely that a segment of these longer-duration commutes are the result of residents taking advantage of Matawan’s rail transit station, which is the northernmost train stop in Monmouth County, and provides access into New York City. On the other hand, the shorter commutes are likely the result of Matawan’s compact and traditional design patterns that enable people to live within close proximity to where they work.

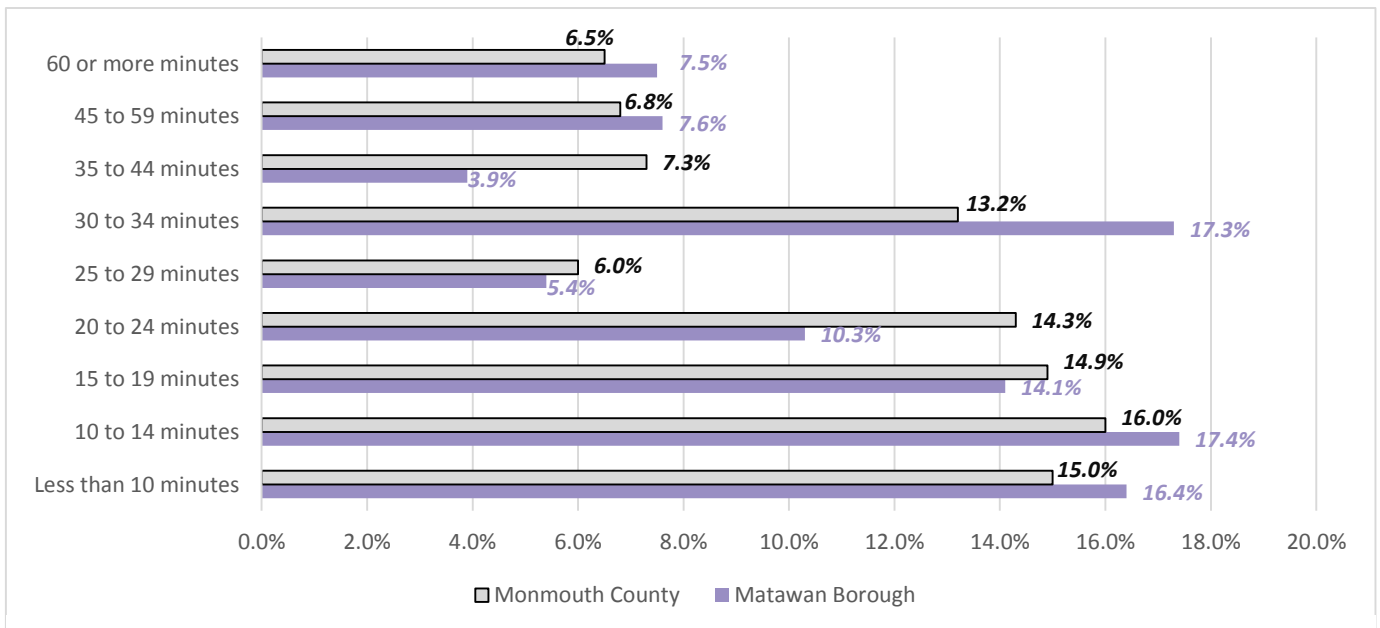


Figure 6: Commute Times for Monmouth County and Matawan Borough. (Source: 2009-2013 American Community Survey)



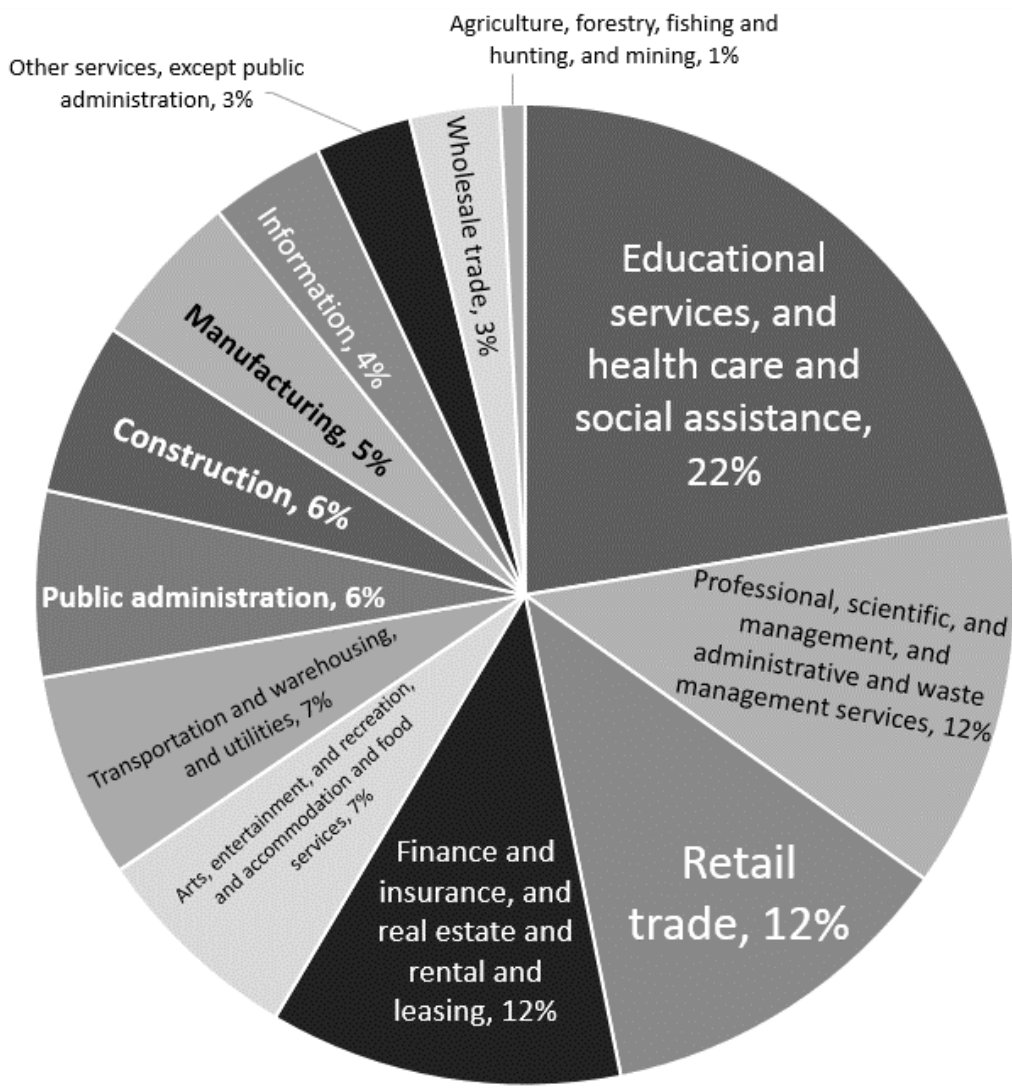


Figure 7: Industry by occupation of Matawan residents (Source: 2009-2013 American Community Survey)

Despite the presence of a transit station, most residents still prefer to drive to work, as Census 2009-2013 American Community Survey estimates suggest that of 4,409 workers, 527 utilize public transportation. On the other hand, New Jersey Transit reported 2,554 average weekday passenger boardings at the Aberdeen-Matawan train station for fiscal year 2012. This may explain the expansive area used for parking lots around the station.

has approached its buildout potential. The Land Use Plan Element that follows this section explores existing land use patterns and future development potential, while proposing strategies to harness and direct this growth.

Household Characteristics

Census data suggests that Matawan has a total of 3,399 occupied housing units. The median age of housing in Matawan (1964) is older than the County (1971) and the state (1965). A similar pattern is seen with median housing values, with Matawan at \$326,900; Monmouth County at \$389,900, and \$327,100 for the state. When these values are broken down, Matawan has a higher percentage of housing between \$200,000 to just under \$500,000.

Development Patterns

Due to the limited availability of buildable land in Matawan, development activity is largely limited to redevelopment or development of individual housing units on vacant parcels. The most noticeable spike in residential activity corresponds to the multifamily development in the southern section of the Borough along Freneau Avenue (Route 79), known as the Preserve at Matawan. Generally, residential and nonresidential development has remained fairly stable as Matawan



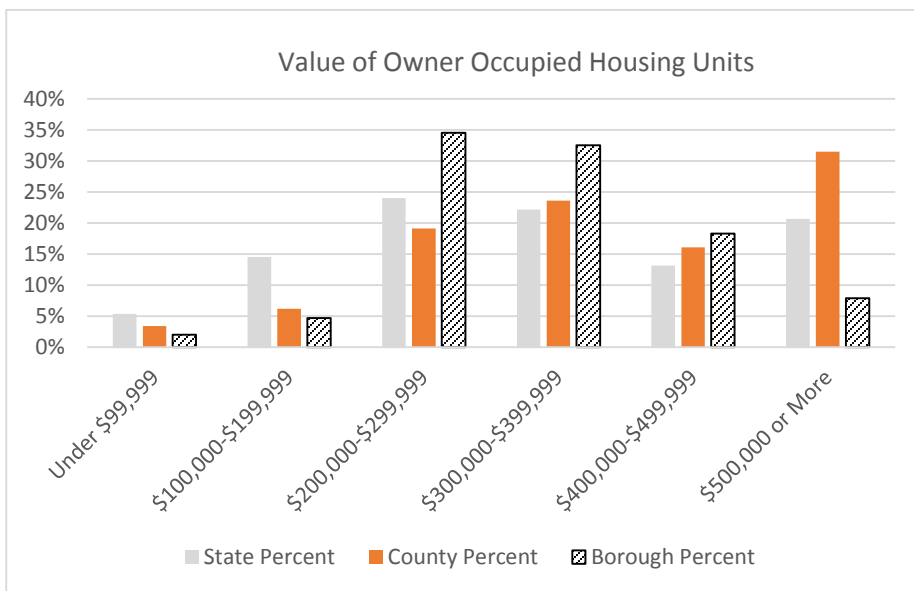
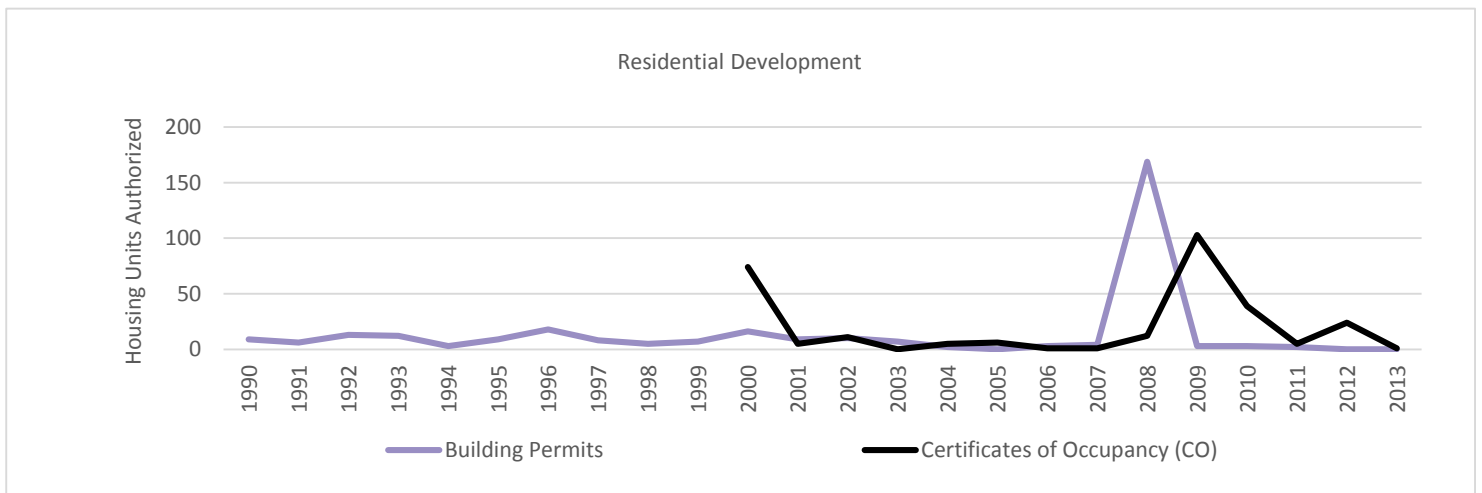
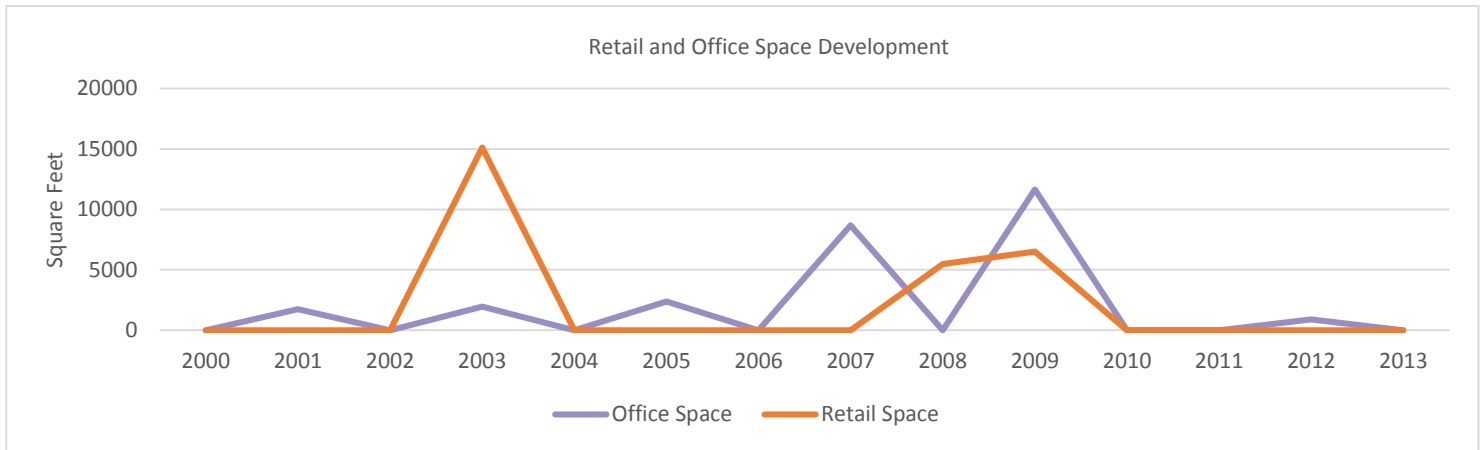


Figure 8: From top to bottom: retail and office space development in Matawan, building permit and CO activity in Matawan from 1990-2012, and the value of owner occupied housing units in Matawan. (Sources: New Jersey Department of Labor and New Jersey Department of Community Affairs)



LAND USE PLAN ELEMENT



Figure 9: When compared to 2012, aerial imagery (clockwise from above) in 1930 and 1970 indicate that land use patterns have changed little in Matawan's downtown. Patterns of suburbanization into agricultural lands are seen beginning in parts of the 1930 imagery, and more so in the 1970 photos, eventually leading to near complete buildout.

Introduction

Matawan’s development patterns were first influenced by its accessibility from the sea,¹ while providing upland areas for settlement that were protected from flooding. Early twentieth century construction of two dams in Matawan led to the creation of Lake Lefferts and Lake Matawan, which typify the present natural landscape of the Borough. The subsequent arrival of the railroad, with commuter service to New York, spurred a new wave of development that continued through the 1960s. Proximity to the rail line and the newly-completed Garden State Parkway encouraged the development of suburban low-density single family residential housing and moderate-density Garden Apartments. From the 1960s to the present, the pace of development slowed as the amount of undeveloped land became more and more scarce.



Figure 10: Matawan Borough, as illustrated in the 1872 F.W. Beers Atlas

¹ Remnants of this maritime era in Matawan’s history is evident with street names like Dock Street, Steamboat Alley, and Mill Street.

Row Labels	# Lots (Approx)	Acres (Approx)	Percent
APARTMENT	24	70.82	5.31%
GB	2	4.38	6.18%
R-100	4	4.08	5.76%
R-50 I	4	4.26	6.01%
R-75	2	0.02	0.03%
R-M	12	58.09	82.02%
CHURCH/CHARITABLE/CEMETERY	22	59.99	4.50%
R-100	8	41.72	69.53%
R-50 I	11	4.77	7.95%
R-75	2	13.51	22.51%
R-M	1	0.00	0.01%
COMMERCIAL	150	86.21	6.46%
DPD	25	7.55	8.76%
GB	49	15.14	17.56%
HI	34	31.19	36.18%
R-100	3	2.61	3.02%
R-50 I	14	8.89	10.32%
R-75	7	1.71	1.98%
RID	6	3.93	4.56%
SB	11	14.29	16.58%
SC	1	0.90	1.04%
EXEMPT	26	22.18	1.66%
DPD	5	1.74	7.86%
GB	3	0.74	3.34%
GO	1	0.35	1.59%
HI	4	1.13	5.07%
IND	1	0.47	2.12%
R-100	3	4.30	19.41%
R-50 I	4	1.87	8.41%
SB	3	1.79	8.07%
SC	2	9.79	44.13%
INDUSTRIAL	12	28.09	2.11%
GO	1	0.00	0.01%
HI	1	0.52	1.84%
IND	3	18.72	66.64%
RID	5	7.19	25.58%
SB	2	1.67	5.93%
PRESENTLY VACANT	124	76.08	5.70%
GB	3	1.05	1.39%
HI	7	4.55	5.98%
R-100	22	11.82	15.54%
R-50 I	50	26.63	35.00%
R-75	39	30.54	40.15%
RID	2	1.08	1.42%
SB	1	0.40	0.52%
PUBLIC	139	213.92	16.04%
DPD	6	1.43	0.67%
GB	23	24.49	11.45%
GO	1	6.17	2.88%
HI	1	0.06	0.03%
R-100	23	65.68	30.70%
R-50 I	29	9.13	4.27%
R-75	35	87.31	40.82%
RID	16	8.78	4.10%
R-M	5	10.88	5.09%
RESIDENTIAL	2,370	776.67	58.22%
DPD	19	3.83	0.49%
GB	57	11.32	1.46%
GO	2	0.40	0.05%
HI	22	6.19	0.80%
R-100	752	369.30	47.55%
R-50 I	426	93.63	12.06%
R-75	975	280.07	36.06%
RID	9	1.44	0.19%
R-M	90	4.07	0.52%
SB	18	6.40	0.82%
GRAND TOTAL	2,867	1333.95	100.00%



Summary of Land Use Issues

Matawan's 1965 Master Plan has guided growth and development in the Borough for the past 50 years because development has remained stable. While other New Jersey municipalities have required a rapid succession of master plan amendments over the second half of the twentieth century to keep pace with a correspondingly rapid suburban transition of rural farm areas, many of the original goals and objectives from Matawan's 1965 Master Plan still remain relevant. The 1965 Plan desired a revitalization of its downtown, and zoning ordinances that would direct non-residential development toward this existing center, while protecting historic character. The possibility of redevelopment around the area north of the rail line was also introduced for consideration. Now that Matawan has reached its buildout, however, the land use planning paradigm must shift from anticipating new growth to managing and improving existing development through redevelopment, community development and other enhancements.

This 2015 Master Plan for the Borough of Matawan establishes the groundwork for the future planning and

development regulations that will be equipped to manage this form of growth.

Existing Land Use

Measuring "land use," or how Matawan's landscape is utilized, is accomplished through analysis of several different measures. Property tax data, aggregated by the state as the "MOD IV," divides properties into specific categories, based on their use. A bank would be classified as "commercial," a park would be "public," low density housing (under 4 connected units) would be "residential," higher density housing would be "apartments" and a place of worship would be "church/charitable." This data can be mapped to provide a summary understanding of development patterns in order to inform changes to zoning and development regulations.

Providing an additional dimension to the analysis of existing land use is "land cover" data, a large scale visual analysis of aerial photography that delineates lands into five broad categories: Forest, Agriculture, Water, Wetlands, Urban (developed), and Barren (no land

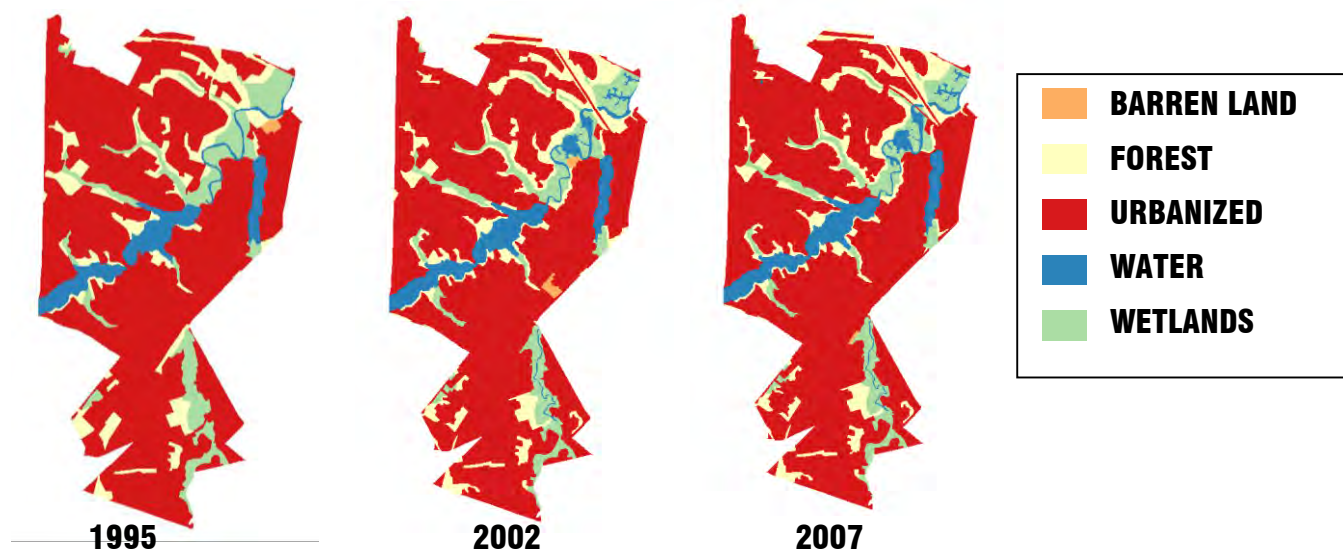


Figure 11: As the graphics above illustrate from left to right, land use patterns in Matawan have changed little between 1995 and 2007. Source: New Jersey DEP

cover, i.e. quarry). Each of these categories is then divided into different subcategories.

These two measures of land use provide two ways of understanding development patterns, however neither is comprehensive. Property tax data may not capture the full picture if a building is used both for apartments and ground floor businesses. In other cases, land preserved by a cluster subdivision may be classified as residential. Publicly owned lands can include preserved lands, but they can also include lands where a foreclosure has occurred. Land cover data can describe the visual characteristics of the landscape, but the immense scale of the analysis can exclude certain features. In the case of New Jersey DEP’s analysis, the minimum mapping unit is an acre. In addition, the time and resources required to conduct this analysis limit its timeliness, but rather provides a large-scale summary of landscape pattern changes over time.

Development of Matawan’s existing land use map began with the mapping of the most recently released MOD IV property tax data. This data was cross referenced with aerial imagery and in-person inspection. Finally, the map was shared with the Master Plan committee for review and comment. This existing land use map on page 28, provides the baseline for the land use recommendations that follow in the sections below.

Future Development Potential

The limited amount of undeveloped, developable land in Matawan means that future development will take place in the form of redevelopment of existing sites. This is presently taking place at the Walgreens site (Block 40; Lot 2), where a former industrial site is being transformed into a mixed-use development that will contain a mix of professional offices, residential units, and commercial businesses. Recent MOD IV tax data suggests that nearly 6% of properties in the Borough are vacant, however, this is not to suggest that all of these lots are developable, as many lots designated as “vacant” include parts of Lake Lefferts and Lake Matawan. Other environmental constraints include steep slopes and floodprone properties. When residentially-zoned parcels that are covered entirely by

water or wetlands are removed from this analysis, the aggregate total of potentially buildable residential lots drops by half, and the acreage drops by nearly 75%, as seen in the table below. This is not to say that vacant, buildable lots do not exist within Matawan; opportunities for new development on scattered small lots still exist, however, due to their small size and proximity to environmental constraints will prohibit the types of large-scale residential development last experienced in Matawan in the 1950s and 1960s.

	Parcels	Acreage	Percent
PRESENTLY VACANT	124	76.08	5.70%
GB	3	1.05	1.39%
HI	7	4.55	5.98%
R-100	22	11.82	15.54%
R-501	50	26.63	35.00%
R-75	39	30.54	40.15%
RID	2	1.08	1.42%
SB	1	0.40	0.52%

Table 2: Vacant land by zoning district in Matawan

Row Labels	# Lots (Approx.)	Total Acreage (Approx.)	Largest Individual Lot	Average Lot Size
R-100	12	5.32	1.29	0.44
R-501	17	2.87	0.61	0.17
R-75	27	8.35	3.36	0.31
Total	56	16.54	3.36	0.30

Table 3: Vacant residential land in Matawan that is not entirely covered by water or wetlands.

Land Use Plan

As previously discussed, for all intents and purposes, Matawan Borough has reached its buildout potential based solely on available land. What this means, is that while small pockets of developable land exist throughout the borough, future large-scale development will largely occur through redevelopment. New housing or businesses looking to locate in Matawan will likely require the retrofit, renovation or reconstruction of a previously-developed site. Since the Borough’s development patterns largely predate the automobile-inspired suburban model of large lot residential communities and even larger lot “big-box” shopping centers, new residences and businesses will



be faced with the challenges that are associated with adapting to these historic development patterns.

This is not to say that redevelopment should “modernize” the Borough at the expense of its historic character. Rather, Matawan’s land use, zoning and development regulations must be refined to meet changing market demand, while continuing to respect the built form of the community. Matawan’s ongoing goals to restore its downtown, protect its historic core, and redevelop its train station as a transit-oriented village that reinforces downtown revitalization and investment are collectively part of this land use plan.

Most of Matawan’s development, especially around its downtown, predates the advent of the zoning code, which is commonly used to separate development by specific uses. Conventional suburban development is discernable by its clean and clear delineation of districts, a housing subdivision is generally located in a different area of town from a shopping center, which is located in a different area from municipal buildings, and so on and so forth. On the other hand, land use in Matawan is still largely characterized by a mix of uses that appear to defy the suburban development model. This development pattern, popularly referred to as “traditional neighborhood development,” reflects the layout and design of communities when markets, rather than zoning, dictated development patterns. Without automobiles, residents had to be within walking distance of their everyday needs, or at least close enough to a train station where they could have access to larger markets. As a result, traditional neighborhood development is regulated more by density, rather than use. This can still be observed along Main Street in Matawan. Heading north, passing Terhune Park, houses are clustered closer together. The transition gradually continues further north, as some houses have been converted into professional offices, leaving residential units on the second floor. Upon Main Street’s intersections with Ravine Drive and Little Street, buildings are visibly designed for downtown commerce, with second floors reserved for professional offices or residential units. This pattern then begins to reverse, and gradually transitions toward lower density and single use structures before reaching Memorial Park.

Existing “use-based” zoning does not necessarily protect these patterns, nor does it always efficiently respond to new business, when an unforeseen new “use” does not fit the existing mold, and requires a variance, which may be cost-prohibitive to emerging small businesses. Unfortunately in Matawan’s case, despite the compact development patterns that have the potential to encourage pedestrian traffic, underlying zoning regulations prohibit many types of businesses that are found in vibrant downtown areas.

To address these concerns with traditional zoning, some communities, including several in New Jersey, have reconfigured their land use and zoning in a way that protects existing design, layout and form while increasing development flexibility. These “form-based” models, such as those found in Newton (Sussex) and Hammonton (Atlantic) seek to preserve the existing development patterns, while creating greater flexibility for mixed-use development. Other communities are developing hybrid approaches, either incorporating form based developments through redevelopment, or utilizing a balance of design and simplified use regulations.

As demand from the Millennial and Baby Boomer generations for amenity-rich, pedestrian oriented development grows, Matawan Borough will have an advantage over other municipalities that will have to redesign their built landscapes to welcome this growing market. Matawan’s 2015 Land Use Plan encourages that future land use in the downtown areas reflect principles of walkable mixed-use development that respects the historic design elements that characterize the area. This master plan serves to affirm the Borough’s existing land use patterns, while addressing the planning and regulatory hurdles that inhibit the transformation and revitalization of Matawan’s downtown into a welcoming destination. The revised land use maps can be found on page 28, Maps.

Downtown-Specific Districts

Matawan’s downtown serves as one of the borough’s strongest assets; a historic, walkable community with close access to rail transit and recreational amenities.



Landscape patterns with these “traditional neighborhood” development elements are experiencing increased market demand, and Matawan benefits from having many of these physical elements presently in place.

Matawan’s downtown extends east of Lake Lefferts and north from Route 34 to the Main Street Bridge over Gravelly Brook and Lake Matawan. Presently this area is divided into seven different zone districts: HI (Highway Improvement), R-75 (Residential One Family Dwelling), IND (Industry), GO (General Office), R-50 I (Residential One Family Dwelling), DPD (Downtown Preservation District), SB (Special Business) and GB (General Business). This land use plan proposes revisions to the land use designations in Matawan’s downtown areas that will enable the borough to provide context-sensitive development regulations that strengthen, enrich, and realize these assets.

This land use plan divides this area into four revised downtown districts: Downtown Core, Downtown Neighborhood, Main Street Corridor, and Mixed Use Gateway. These land use districts are described in the section below.

Downtown Core

The Downtown Core includes the northern section of the existing Downtown Preservation District, as well as portions of the General Business district. This area of the downtown is presently characterized by high-density development and provides the cross street connections between the suburban residential neighborhoods of the Borough to the west, and the moderate density residential neighborhood east of Lake Matawan. The Downtown Core would provide the greatest intensity of downtown development, such as the case of the former C-Town supermarket redevelopment (See Figure 12), which provides space for ground-level pedestrian-oriented businesses, with opportunities for residential units and professional

offices above, and supports both day and evening uses in the downtown.

Similar to the other Downtown-Specific districts, development is located within close proximity to the streets and sidewalks,² and is oriented toward pedestrian activity. Parking should not be the visual centerpiece of development, and is located either behind the structure or through shared agreements between other property owners in order to maximize its use, while avoiding underutilized spaces that disrupt downtown continuity and vibrancy. Undeveloped



Figure 12: Rendering of the proposed C-Town Redevelopment

parcels may be utilized for temporary uses as a way to generate interest in the downtown until development pressure exists, such as “pop-up” parks, farmers markets, outdoor movie screenings, or food trucks.

Presently, many of the historic structures in the heart of Matawan’s downtown business district are in need of façade improvements, and the existing businesses do not appear to generate the economic activity sufficient to stimulate development of neighboring vacant storefronts. To attract greater economic activity and attention to the Borough’s downtown, this area should accommodate high-density mixed use development. Ground floor commercial (such as banks, restaurants and retail) will encourage a mix of daytime and evening pedestrian traffic. Increasingly larger concentrations of pedestrians will subsequently create the critical mass desired by entertainment venues, like theatres, national retailers, and other niche markets. Professional

² Traditionally, zoning regulations will require minimum “setback” requirements, which stipulate the minimum amount of space a structure must be placed from the road. Proponents of traditional neighborhood

development patterns often opt for the “build-to” line, which instead stipulates the *maximum* amount of space that a structure can be placed from the road, as a way to promote pedestrian traffic.

offices and residential units should be located above the ground floor to limit the amount of “blank” spaces in the streetscape. These mixed-use structures, located within proximity to everyday shopping, services, and the transit station can provide desirable residential spaces for both Baby Boomers and Millennials looking for a walkable downtown.

Downtown Neighborhood

The Downtown Neighborhood District surrounds most of the Main Street Corridor and Downtown Core areas.



Figure 13: Matawan’s Post Office and residential areas along Main Street incorporate a variety of architectural styles and building materials, while adopting similar close “build-to” lines that encourage pedestrian traffic.

These lots generally range from 2,000 to 10,000 square feet in size, although larger lots are often constrained by water, wetlands, or steep slopes. Presently, this area is governed by the R-50I zone district. The physical design of the Downtown Neighborhood is characterized by residential structures, yet many of these structures include a mix of non-residential uses, such as professional offices or other low-impact uses, often in concert with a residential component. The Downtown Neighborhood, while comprised of a variety of architectural design periods, follows a similar physical layout, with orientation toward the street, build-to lines, and other elements typical of a historic downtown.

Main Street Corridor



Figure 14: Residential areas in Matawan’s Main Street Corridor are characterized by a variety of different historic architectural styles. Their close proximity toward the downtown has also made them amenable to residential/professional office mixed-use.

The Main Street Corridor follows Main Street from Route 34 to the Lake Matawan Bridge, and includes properties along the corridor outside of the Downtown Core and Mixed Use Gateway. This district also includes the downtown approaches along Ravine Drive and Little Street. This district includes parcels that are presently located in the General Business, Downtown Preservation District, Special Business District, and the Residential District (R-50I).

The intent of the Main Street Corridor district is similar to the language guiding the existing Downtown

Preservation District: “The Downtown Preservation District gives special recognition to the unique characteristics of the designated area as they reflect the eighteenth- and nineteenth-century history, architecture, land use relationships and small village way of life. The creation of this district is an attempt to retain and preserve any structures and sites of historic significance whose age and character, both individually and collectively, create the tone and character of the designated area.”

Presently, this area contains a mix of land uses. Development varies from multifamily and single family residential, to commercial uses that include retail, professional offices, and other low-impact businesses. The development pattern is less dense than the downtown with greater flexibility in building setbacks, but still dense enough to not discourage pedestrian traffic. Sidewalks are safe and functional, and are shaded with street trees.

Land use regulations would be expanded from the limited uses permitted under the existing Downtown Preservation District to permit greater flexibility, so long as the site meets the development and bulk regulations designed to respect and replicate the existing historic



Figure 15: The Northern Corridor district is characterized by a mix of architectural styles, land uses, lot sizes and setbacks.

design elements of the area. The intent of greater use flexibility is to promote the renovation and restoration of these historic assets, in order to avoid stringent regulations that stymie rehabilitation and perversely incentivize “demolition by neglect.” Instead, development regulations, in terms of setbacks, size, and density should be revised to reflect existing “build-to” lines and permit the inclusion of traditional elements, such as front yard porches and stairways. Efforts to preserve or replicate development using similar sized structures and architectural styles is encouraged, while permitting increased flexibility toward building uses.

From a design standpoint, development incorporates architectural elements found within the downtown core, with an emphasis toward pitched roofs and gables, facades that utilize historic building materials, such as bricks or shingles, while windows and patios are oriented toward the street and sidewalks.

Mixed Use Gateway

As the name implies, this district serves as the southern entryway into Matawan’s Downtown, and provides a corresponding bookend to the train station redevelopment area in the north. The Mixed Use Gateway district applies to the redevelopment of a former industrial site (commonly referred to as the “Walgreens Site,” due to the present anchor tenant) at the corner of Route 34 and Broad Street into a mixed-use development that includes office space, retail, and residential uses. As part of this plan, this land use designation is expanded to include the commercial block northeast of the intersection of Route 34 and Main Street, as well as the area west of Main Street that is between the Lake Matawan Bridge and North Street. These areas serve as transitional districts into Matawan’s downtown: the northern area provides a gateway into the downtown from the Transit Station Redevelopment Area, and the southern area provides a gateway into the pedestrian-scaled developments of the downtown from the suburbanizing Route 34 corridor.

Existing land uses in the southern Mixed Use Gateway include the “Main Street Village” development, which contains multiple commercial tenants. The rest of the



area includes vacant commercial development, residential, commercial, and sites with a residential/commercial split. The redevelopment of the adjacent Walgreens site to a mixed-use residential/professional/commercial community may create additional development pressure in this area.

The northern Mixed Use Gateway is the entryway into the Borough's downtown from the Train Station. Memorial Park provides an important civic landmark, however, there is little else present that would attract traffic toward the Downtown Core. The existing sidewalks and moderate-density development pattern is high enough to justify pedestrian traffic, however, additional improvements could welcome and improve greater pedestrian activity between the transit station and the downtown.

Redevelopment and Rehabilitation

Redevelopment provides New Jersey municipalities with additional tools to shape and improve their physical landscapes. While the enabling regulations continue to evolve due to new legislation or court rulings, the basic principle, designating an area for redevelopment, gives a municipality the authority to develop a redevelopment plan. Redevelopment plans will vary based on the needs of the community as well as what tools it is eligible to utilize, but what they do share is that they provide the vision of a master plan with the authority of a zoning ordinance, giving municipalities a more effective way to control the nature and type of development than is possible through standard zoning.

The Borough has an existing redevelopment area and redevelopment plan in place around the Aberdeen-Matawan NJ Transit rail station. Based on the concerns of aging infrastructure and the desire to fund improvements that would help revitalize the downtown as an extension of the Transit Station Redevelopment, the Borough's 2014 Master Plan Reexamination Report recommended the designation of the downtown as an area in need of rehabilitation. The Borough would need to authorize a study to verify the downtown's eligibility for the designation, based on the requirements of the

Local Redevelopment and Housing Law (LRHL). The rehabilitation designation would enable Matawan to adopt site or area-specific redevelopment plans for properties in the downtown. These plans could replace existing zoning or act as an overlay zone to provide increased options for development. It should be noted that under a rehabilitation designation, the Borough has the authority to develop a redevelopment plan that can help to rehabilitate, repair, and renovate areas without the use of eminent domain or long-term tax exemptions.

Train Station Redevelopment Area

Recognizing the existing local demand for transit-access, and lifestyle demands for amenity-rich mixed use destinations, the Borough has been in the process of creating a redevelopment plan for the area around the Aberdeen-Matawan Transit Station. Matawan's designation of a redevelopment area around the New Jersey Transit in 2001 started a process to revitalize a large section of the borough.

The Train Station Redevelopment Area serves as a critical northern gateway into Matawan's historic downtown. With proper planning, the new development near the train station could catalyze the rehabilitation of Matawan's Main Street corridor. Present market demands for amenity-rich, high-density development with rail access makes this area a critical asset for the Borough.

The original redevelopment plan in 2001 established several basic districts that were separated by use. Beyond these districts and some basic guidelines for residential density and non-residential height requirements, the plan did not establish new zoning standards for the area. Instead, the plan proposed that zoning would be established through subsequent consultation with prospective developers.

Draft revisions to the 2001 Plan began in 2014. These amendments revised the original redevelopment plan by establishing zoning districts with additional guidelines for building and landscape design that encourage traditional neighborhood development patterns that foster pedestrian activity. The plan



reserves environmental constraints, namely wetlands, flood prone areas, and steep slopes that would be limited in development potential, for parks and open space amenities. Higher density mixed use development would be permitted in the areas without such constraints. Phasing for the project would prioritize the redevelopment of the surface parking lot adjoining the train station.

The proposed high-density mixed use village would provide linkages to the historic town core. Redevelopment of this area acknowledges that the station is a regional transit hub, and that any redevelopment parking areas owned by New Jersey Transit will be replaced with a compact parking structure.



Figure 16: Matawan and Aberdeen have both been in the process of redeveloping the area around the train station.

Other Districts

Outside of the downtown districts and redevelopment area, Matawan's land use patterns follow characteristics similar to other post-war automobile-oriented suburban development. These areas of the Borough are better attuned to use-based zoning, where single-family residential development is located in the single family residential zones, multi-family development is located in the Borough's Residential Garden Apartments zone, and retail, office, and industry have use-specific zones. Since Matawan is largely built out under the existing zoning, these zoning districts largely correspond to the existing land use patterns.

Residential

Residential districts range in size from the R-100 (15,000 square foot lots) to the R-50I (5,000 square foot lots). While street patterns in the downtown are dense and gridded, the suburban districts are characterized by larger, meandering roads that close in on themselves (a "P-Loop") or terminate in cull-du-sacs.

Multifamily Residential

Multifamily residential development in the Borough is characterized by large tracts of land that is largely geared toward higher-density "Garden Apartment" style residential units. These developments are part of the Borough's Residential Garden Apartments district, and are located in different areas of the northern section of Matawan, largely within proximity to the Garden State Parkway.

Commercial

The Commercial district follows the areas highlighted by the 2003 Land Use Plan for commercial that are not included as part of the downtown districts. This includes portions of the Highway Improvement Zone District, Special Business and General Business districts. This area is revised from the basic "commercial" designation to improve variety for new and emerging businesses. Due to the changing nature of markets, the rise in popularity of artisanal manufacturing, 3D printing, and broadband communications, business may include a mix of "office," "manufacturing," or "retail" that would not have been previously anticipated; these businesses also may not create the same degree of negative impact on the surrounding community seen with a traditional "manufacturing" use that would require it to be separated from other areas. As it is currently in the Borough's Highway Improvement District, many permitted uses are outdated (such as photographic stores, news dealers or shoe repair shops), or have a degree of specificity that may no longer meet market demand (such as luggage and leather goods stores).

Industrial

Based on the existing land use map, industrial development is confined to two areas in the Borough, both of which are zoned for industrial use. The 2003 Land Use Map designated the industrial property north of Route 34 for commercial use. The Borough later revised the zoning for this site to mixed-use to reflect the new development proposed for the site, which will include a mix of residential and office space. This Land Use Plan would revise this area to the Town Core Gateway district. The other industrial district, located in the southern area of the Borough, would follow the existing standards for the Industrial District, permitting business and commercial uses that are permitted elsewhere, but also manufacturing processes, so long as they do not pose a nuisance that extends beyond the lot.

Semi-Public, Public, and the Conservation, Parks and Recreation Areas

Semi-public lands largely refer to tax-exempt properties that serve the public, such as churches and cemeteries, while public lands include a variety of public facilities, from municipal buildings and pump stations, to schools and the Post Office. The land use district, Conservation, Parks and Recreation, includes a mix of public and private lands that are either largely constrained by wetlands and waterbodies, or public lands dedicated to recreation, such as Memorial Park.

Recommended Zoning Changes

The zoning ordinance will need to be revised to ensure conformity with the master plan. At a minimum, the zoning map should be revised to match zone boundaries to land use districts as needed. The zoning ordinance will also need to incorporate use standards, bulk requirements, design standards and updated terminology to reflect the new districts; revise other districts; and to generally implement the goals, objectives and policies of the master plan. Following is a list of specific zoning recommendations that need to be considered.

- Replace zoning districts in downtown with context-sensitive districts that emulate the historic development patterns of the area.
 - Downtown Core District
 - Downtown Neighborhood District
 - Main Street Corridor District
 - Mixed Use Gateway District
- Revise zoning designations near the intersections of Route 79 with Wilson Avenue and Mill Road to address existing conditions and limit nonconforming uses. At present, the Special Business (SB) district includes parcels located around these intersections and also extends west along Wilson Avenue. While a small concentration of non-residential development exists in the area of Route 79, most of Wilson Avenue is residential. Other nonconforming residential uses are present in this SB Zone along Route 79; re-designation of these parcels to a residential district should be considered in a way that limits a patchwork of zoning districts, and preserves non-residential zoning near the intersections with Route 79. The R-75 and R-100 Zone Districts regulate the existing residential developments in the area; the extension of the appropriate residential zone for these lots should be considered to reduce nonconforming uses.
- Pursue a rehabilitation study for the downtown to determine eligibility under the Local Redevelopment and Housing Law (LRHL). If eligible, development of a Downtown Rehabilitation Area will give Matawan the authority to prepare localized redevelopment plans intended to catalyze the revitalization of its historic downtown into a vibrant destination. Matawan's downtown serves as one of the borough's strongest assets; an historic, walkable community with close access to rail transit and recreational amenities. However, maintaining historic structures and infrastructure can be costly. Designation of the downtown as an area in need of rehabilitation by the Borough would help promote reinvestment in the downtown.



Consistency with Neighboring Plans

Introduction

The New Jersey Municipal Land Use Law (MLUL) requires municipalities to examine the consistency of their Master Plan with those of adjacent communities, the county in which the municipality is located, and the State Development and Redevelopment Plan (SDRP). This is done as an element of the Master Plan, and ensures the compatible development of lands that border one another but are located in separate communities and are under different jurisdictions.

The following is an analysis that compares Matawan Borough's Master Plan, land uses, and zoning to neighboring municipalities' master plans, as well as the additional aforementioned plans. In general, land uses and zoning plans are complimentary to those in the adjoining municipalities.

Analysis of Surrounding Communities

Matawan Borough is located on the border of Monmouth County and Middlesex County. The municipalities surrounding the Borough in Monmouth County include Aberdeen Township to the north, east and southwest and Marlboro Township to the south. Matawan's western boundary, which also serves as a segment of Monmouth County's boundary with Middlesex County, borders Old Bridge Township.

Aberdeen Township

Aberdeen Township's unique geography, where a section of the Township is disconnected from the main portion (known as an "exclave"), means that Aberdeen shares multiple borders with Matawan Borough. Matawan and Aberdeen's geographic ties have resulted in several coordinated or mirrored efforts at land use planning and redevelopment.

The two municipalities both have a presence along the Garden State Parkway, and both have recognized the need to provide high-density residential development within close proximity to this transit corridor. In addition, the two municipalities coordinated the initial

redevelopment plan around the Aberdeen-Matawan train station. Aberdeen's South River Metals Redevelopment Area envisions the development of affordable age-restricted and non-age restricted housing units. This redevelopment area is located adjacent to Matawan's newly-established mixed use zone, where the redevelopment of a former industrial site is being transformed into professional offices, retail establishments, and residential units above the first floor. Aberdeen's exclave, referred to as the Freneau portion of the township, shares similar moderate-density residential development patterns in the areas where development exists. A large tract of vacant land in this Freneau section adjacent to Matawan Borough, was designated by the Township for a Planned Adult Community Overlay Redevelopment Zone to provide affordable non age-restricted housing, however, the Township's 2015 Master Plan Reexamination Report noted that Monmouth County recently authorized the acquisition of this property for the creation of a new county and regional park.

Old Bridge Township (Middlesex County)

Matawan Township's border with Old Bridge Township also acts as a border between Monmouth and Middlesex County. Land use patterns in the area of the boundary between the two municipalities are similar, and are characterized by low to moderate density suburban residential development. There are several exceptions, such as where Matawan and Old Bridge have permitted small pockets of higher density garden apartments and townhomes. Non-residential suburban land use patterns are also seen along the Route 34 corridor.

Marlboro Township

Marlboro Township's Land Use Element establishes the key objective of "maintaining the Township's suburban population density and suburban/rural character by discouraging extensive new residential development in currently undeveloped areas of the Township." Additionally, the Master Plan Reexamination Report adopted by the Township in 2012 establishes the



objective to “encourage the remediation of contaminated sites to enhance the local environment, protect residents, and return ...sites to productive use.” Finally, the Township’s Vision Plan sets forth the goals to:

- Balance development opportunities with the established pattern of development and existing infrastructure
- Create attractive gateways at entrances to identify the Township through upgraded land uses, streetscape improvements and signage
- Simplify the Township land use regulations

It should also be noted that the 2012 Marlboro Township Community Vision Plan also recommends the creation of a form-based zoning code for its new village center in order to preserve the historic character of the township and offer a market for small local businesses within walking distance of residential neighborhoods.

In terms of zoning, Marlboro’s boundary with Matawan is zoned to permit low density residential development, similar to the existing land use character in that area of the Borough.

Monmouth County

Adopted in 1982 as the Monmouth County Master Plan, Monmouth County’s Growth Management Guide (GMG) is the County’s primary planning tool. The GMG categorizes the northern half of the Borough as an Urban Center Growth Area, with the southern half as a Suburban Settlement Growth Area. This Master Plan is compatible with the following Urban Center policies listed in the GMG:

- Encourage the adaptive reuse of vacant buildings and abandoned public facilities for new and more productive uses
- Encourage the redevelopment of the urban centers through housing rehabilitation, reuse of buildings and channeling of commercial uses into downtown areas

- Encourage expenditure of public monies for rehabilitation and/or completion of public facilities
- Channel suburban purchasing power into the urban centers’ business districts

Additionally, this Master Plan is compatible with the following Suburban Settlement policies listed in the GMG:

- Encourage a variety of residential types in the suburban settlement
- Encourage the use of the neighborhood unit in the suburban settlement

Monmouth County’s Master Plan is currently in the process of being updated. As part of this process, the County identified specific Master Plan Goals, Principles, and Objectives. Matawan’s plans closely align with the County’s Master Plan Goal #3, to “Promote beneficial development and redevelopment that continues to support Monmouth County as a highly desirable place to live, work, play, and stay.” As part of Goal #3, the County outlines several principles that also align with the Borough’s planning efforts. These principles include:

- Encourage the creation of vibrant communities through a variety of housing choices, energy and transportations options, recreational and cultural offerings, health and safety initiatives, and businesses opportunities that result in a more sustainable and higher quality-of-life for all residents.
- Protect and strengthen the established character of municipalities and their distinct qualities.
- Encourage a variety of new and rehabilitated housing that will enable populations to more readily cycle through different life stages, giving residents an opportunity to age in place.
- The public will benefit socially and economically from the retention, attraction, and advancement of entrepreneurial and business enterprises that result in quality jobs and a stronger, more resilient tax base.



- Aligning State, County, and local investment strategies improves efficiency and reduces cost associated with repairing, replacing, and expanding systemic infrastructure.

State Development and Redevelopment Plan (SDRP)

The NJ State Planning Commission is now staffed by the Office of Planning Advocacy (OPA) which is within the Department of State. The OPA has released a draft State Strategic Plan to supersede the current State Development and Redevelopment Plan (SDRP), which was adopted in 2001. Public Hearings were held in February, March, and September of 2012. The draft State Strategic Plan is based upon a criteria-based system rather than a geographic planning area. The draft State Strategic Plan has not been adopted by the State Planning Commission at this time and was put on hold following Hurricane Sandy.

The Matawan Borough Master Plan is consistent with the plans and policies of the existing SDRP. The SDRP places most of the Borough of Matawan in Metropolitan Planning Area 1 (PA1), although some areas are in Suburban Planning Area (PA2) and the Environmentally Sensitive Planning Area. PA2 extends slightly into Matawan on the west side of the Borough, adjacent to Old Bridge Township, and the southern end, adjacent to Marlboro Township. The Environmentally Sensitive Planning area extends to lakes Matawan and Lefferts and the Matawan creek corridor.

According to the State Plan, most of the communities within the PA1 planning area are fully developed or almost fully developed with little vacant land available for new development. The Matawan Borough Master Plan is consistent with the State Plan by preserving and protecting the established residential character of the Borough, promoting economic development by encouraging appropriate infill and redevelopment and promoting a diversification of land uses, promoting a fully intermodal transportation system that will enhance local circulation and reduce automobile dependency, promoting a balance of housing options to meet the needs of all residents, preserving and

upgrading the existing utility infrastructure, providing adequate park, recreation and open space facilities, and preserving and protecting valuable historic and natural features within the Borough.

Suburban Planning Areas are generally located adjacent to the more densely developed Metropolitan Planning Area, but are characterized by low density development and limited modes of transportation, with the exception of the automobile. The Matawan Borough Master Plan is consistent with the state plan in its focus to direct high-density development toward the downtown area in order to limit sprawl, protect natural resources, and revitalize areas of existing development. The PA2 areas of Matawan are already developed as low-density residential; the Land Use Plan recommends that no changes are made to this area to discourage additional sprawl.

Environmentally Sensitive Planning Areas are characterized by their unique natural features that serve to provide important habitats, scenic vistas, or water supplies. The State Plan seeks to protect these environmental resources through land preservation, accommodate and direct growth toward centers, and protect the character of existing stable communities. Matawan's goal of transforming its downtown to attract future development and redevelopment away from natural areas is consistent with these goals.



Action Plan and Next Steps

1. Train Station Redevelopment Plan

Concurrent to this Master Plan, the Borough has been preparing revisions to the Train Station Redevelopment Plan. Adoption of the revisions to the Train Station Redevelopment Area will jumpstart the redevelopment process around the train station and will complement the revitalization efforts in and around Matawan's downtown.

2. Pursue A Rehabilitation Study And Designation Of Localized Redevelopment Plan Overlays For Downtown

Matawan's downtown serves as one of the borough's strongest assets; a historic, walkable community with close access to rail transit and recreational amenities. However, maintaining historic structures and infrastructure can be costly. Designation of the downtown as an area in need of rehabilitation by the Borough would help promote reinvestment in the downtown. This will give Matawan the authority to prepare localized redevelopment plans intended to catalyze the revitalization of its historic downtown into a vibrant destination. A rehabilitation designation provides redevelopment tools to communities that help to rehabilitate, repair, and renovate areas without the use of eminent domain or long-term tax exemptions.

3. Revise Zoning Ordinance

Based on the changes to the Borough's Land Use Plan Element and Land Use Plan Map, the Borough will need to make revisions to its zoning ordinance to ensure consistency with the Master Plan.

4. Circulation Element

An ongoing concern in the Borough has been the management of traffic and availability of parking. The 2014 Master Plan Reexamination

Report recommended the preparation of a new Circulation Plan Element that would address downtown circulation and parking. The Master Plan committee reiterated this issue throughout the development of this Master Plan.

5. Open Space Element

The Borough should consider the development of an Open Space Element to the Master Plan as a way to address the current needs of Borough residents for expanded recreation opportunities. Quality of life improvements such as parks, recreation and open space areas can strengthen the Borough. Grants and loans through federal, state, and county agencies as well as private foundations should be aggressively pursued. Redevelopment and rehabilitation efforts in Matawan's downtown could include the development of pocket parks, bicycle parking, and other recreational amenities. The Henry Hudson Trail is an important recreational resource. It is maintained by Monmouth County and it links the Borough with other Monmouth County municipalities. Matawan should investigate the feasibility of identifying shared-road bikeways that link the Henry Hudson trail to important destinations in the Borough.

6. Downtown Architectural Study And Design Guidebook

An architectural study and design guidebook could help inform and supplement zoning or redevelopment requirements that establish a cohesive neighborhood aesthetic with the existing historic character of Matawan's downtown. The guidebook could also serve as an educational resource for property owners and developers interested in making voluntary improvements that emulate elements of historic design.



7. Signage And Gateways

Explore branding opportunities that set the borough apart from neighboring municipalities. Branding can be direct (similar to Aberdeen's street signs), or indirect (physical layout, design, amenities).

8. Green Element To Address Stormwater

Lake Matawan and Lake Lefferts are two of Matawan's most notable natural assets, providing numerous recreational and aesthetic benefits to residents, businesses and visitors. A Green Element can identify opportunities to address the quality of stormwater that enters the lakes. Some of these opportunities, including green infrastructure, can be installed as part of a downtown beautification effort, such as rain gardens, planters, street trees, and green roofs. Others can be used in combination with efforts to conserve water, and thus reduce the strain on existing infrastructure, such as rain barrels. Reducing the quantity of stormwater, and improving the quality of the remainder that makes its way into Matawan's lakes, will ensure that these resources can continue to be utilized and valued.



Maps

Existing Conditions Map

Environmental Constraints Map

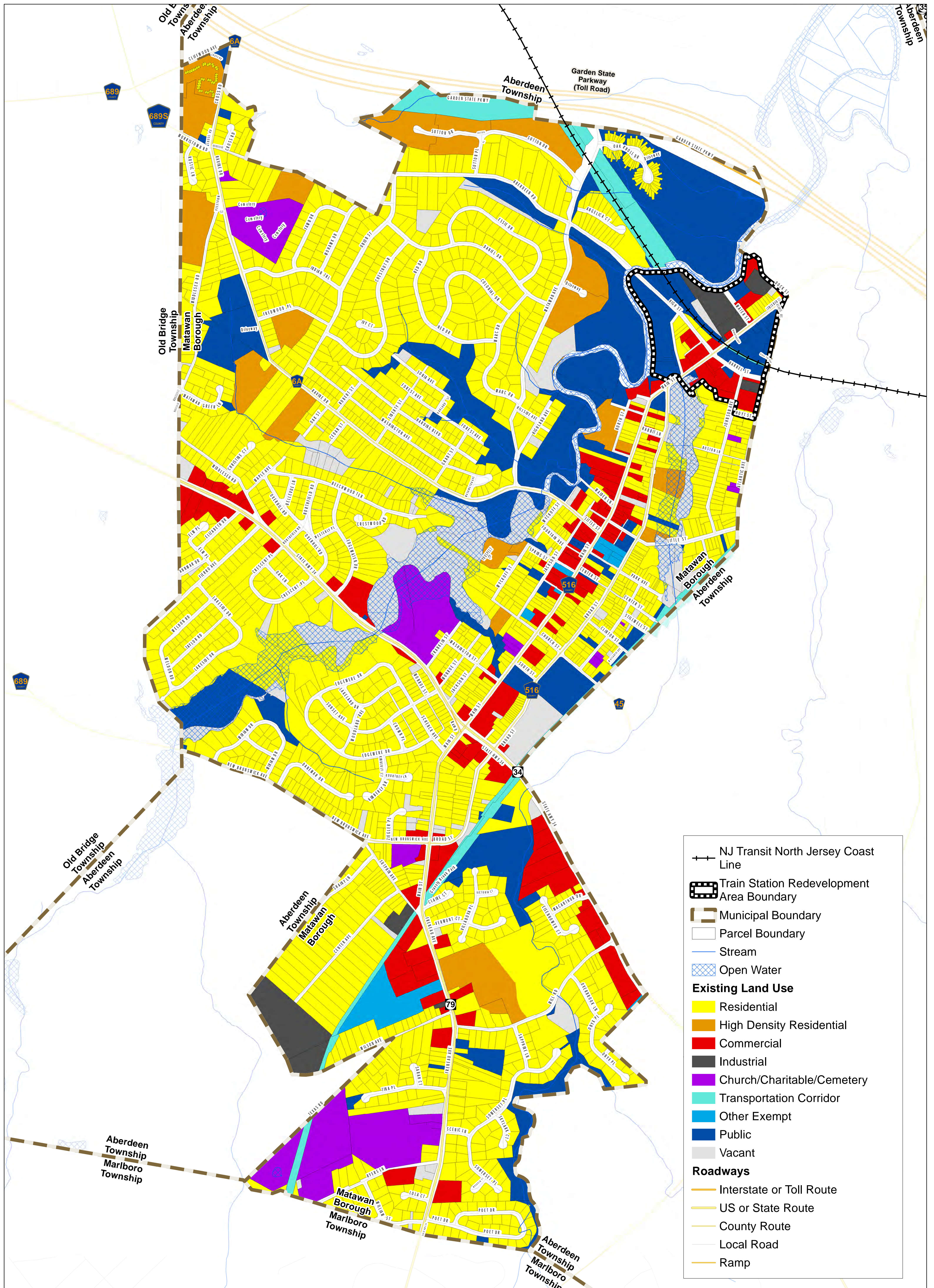
Land Use Plan Map

Downtown Land Use Plan Map

Existing Zoning Map

Train Station Redevelopment Map





- NJ Transit North Jersey Coast Line
- Train Station Redevelopment Area Boundary
- Municipal Boundary
- Parcel Boundary
- Stream
- Open Water
- Existing Land Use**
- Residential
- High Density Residential
- Commercial
- Industrial
- Church/Charitable/Cemetery
- Transportation Corridor
- Other Exempt
- Public
- Vacant
- Roadways**
- Interstate or Toll Route
- US or State Route
- County Route
- Local Road
- Ramp

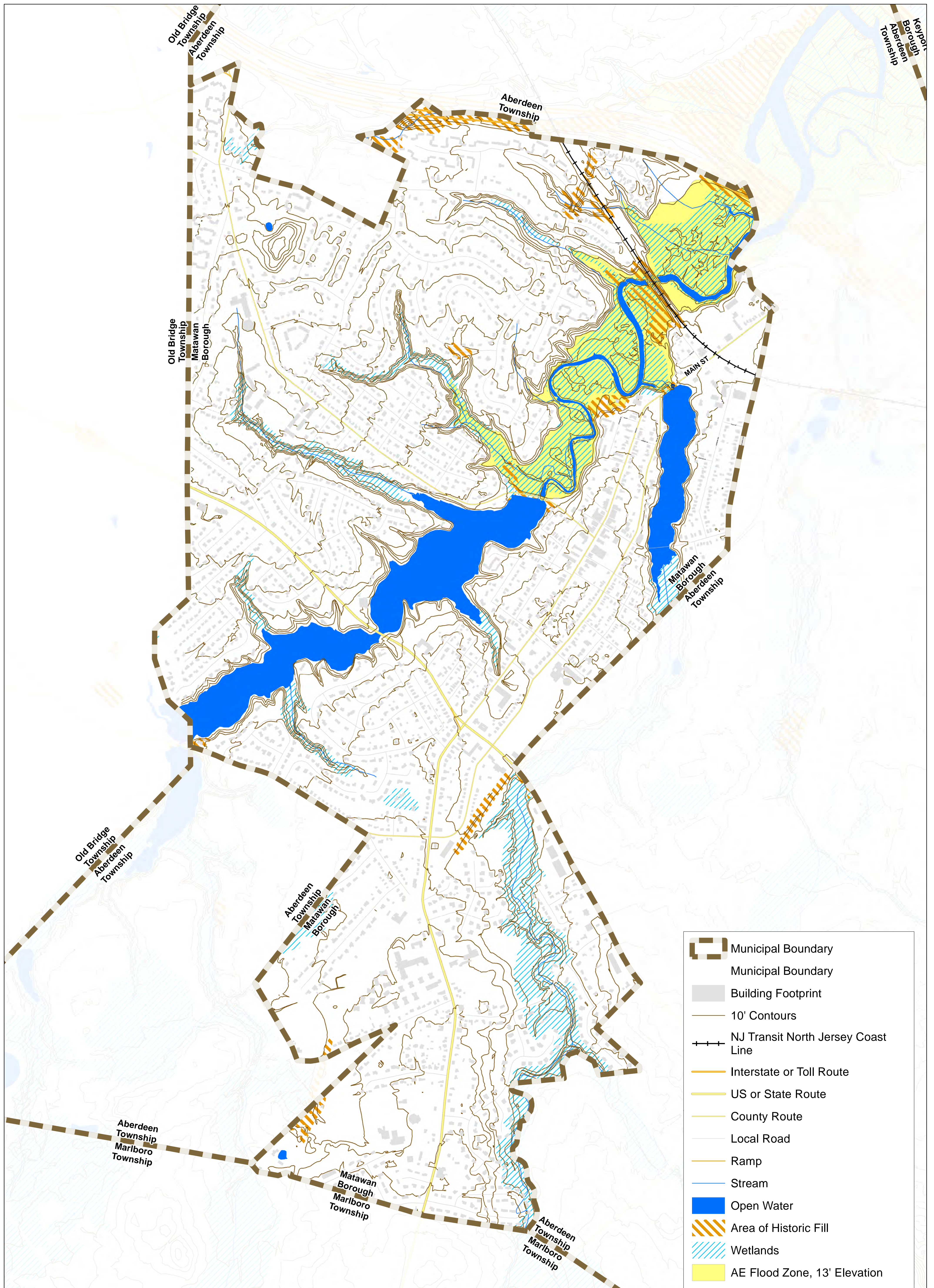


T&M Associates
 11 Tindall Road
 Middletown, NJ 07748-2792
 Phone: 732-671-6400
 Fax: 732-671-7365



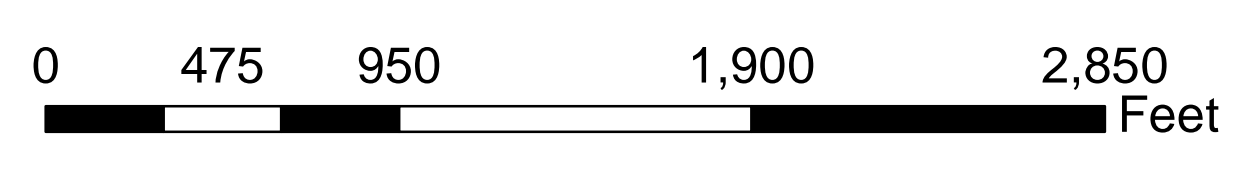
0 460 920 1,840 2,760 Feet

Existing Land Use Matawan Borough Monmouth County, New Jersey



- Municipal Boundary
- Building Footprint
- 10' Contours
- NJ Transit North Jersey Coast Line
- Interstate or Toll Route
- US or State Route
- County Route
- Local Road
- Ramp
- Stream
- Open Water
- Area of Historic Fill
- Wetlands
- AE Flood Zone, 13' Elevation

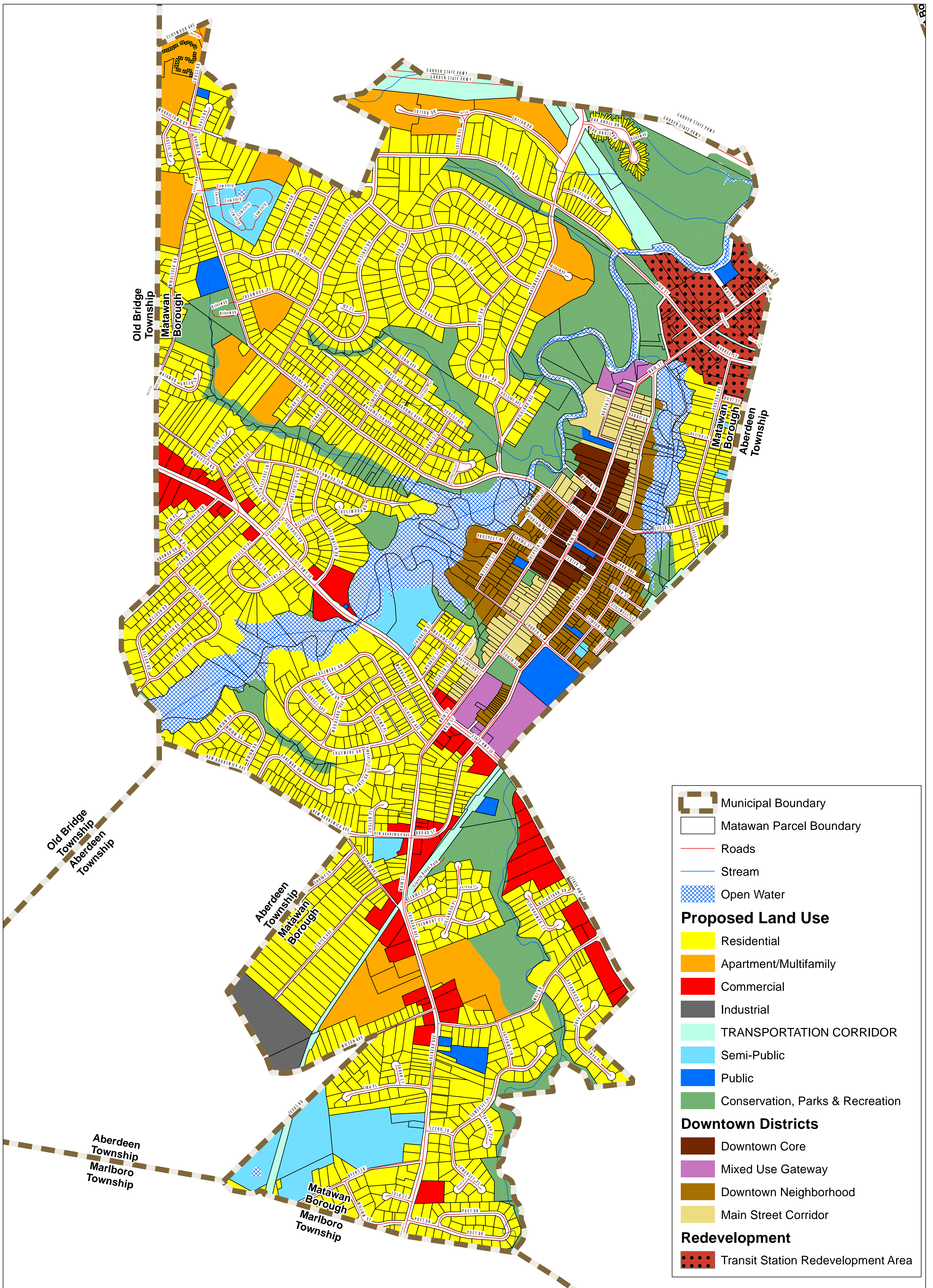

 T&M Associates
 11 Tindall Road
 Middletown, NJ 07748-2792
 Phone: 732-671-6400
 Fax: 732-671-7365



Environmental Constraints
Matawan Borough
Monmouth County, New Jersey

Prepared by: JAC, Revised by: NAD 9/2/2015
 Source: FEMA, NJDEP, NJDOT, NJGIN, Monmouth County, Matawan Borough
 H:\Matn\03500\GIS\Projects\Final\Environmental Constraints_Poster_09_02_2015.mxd

NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information Systems digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.



T&M Associates
 11 Tindall Road
 Middletown, NJ 07748-2792
 Phone: 732-671-6400
 Fax: 732-671-7365

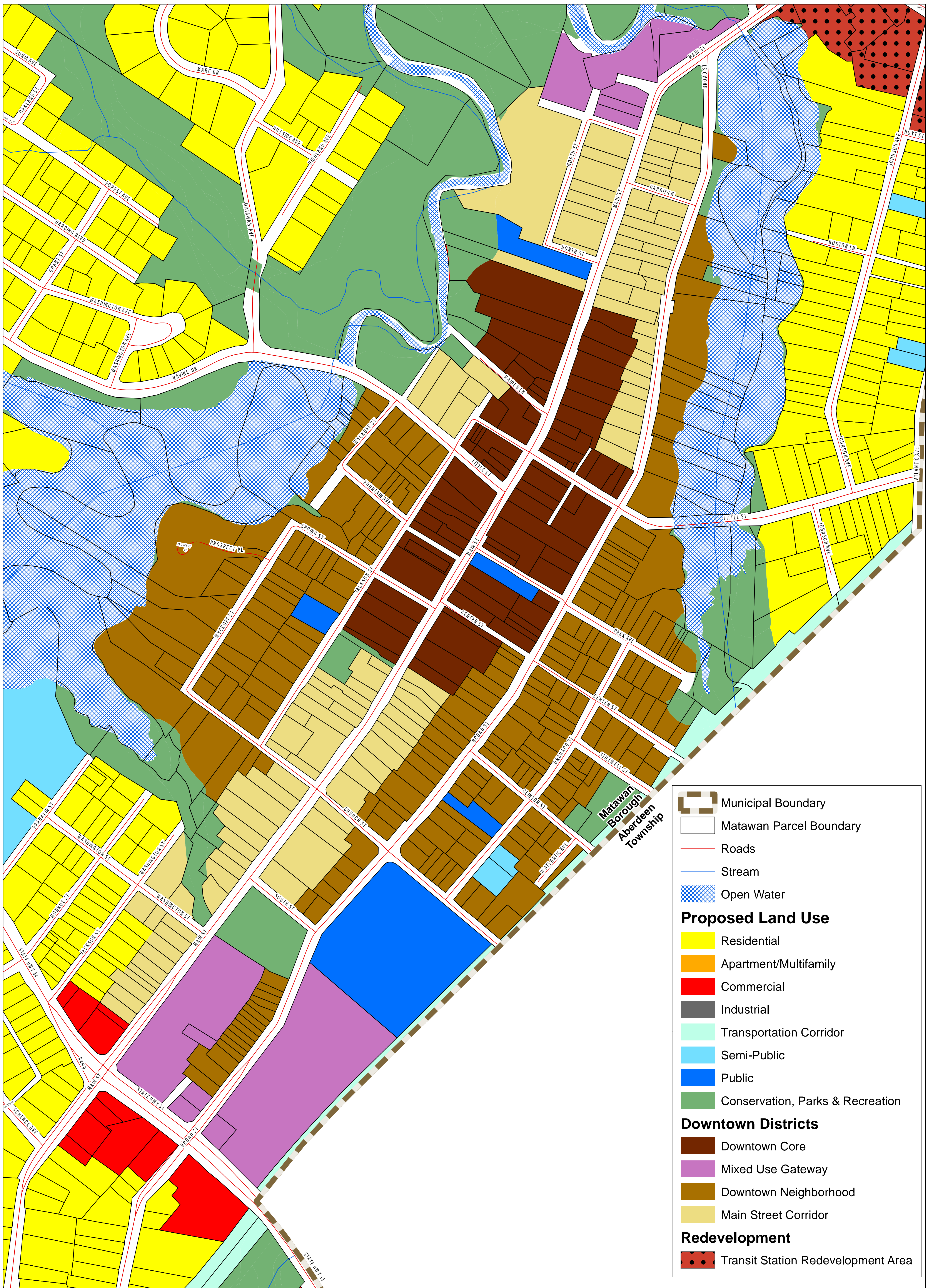


0 450 900 1,800 2,700 Feet

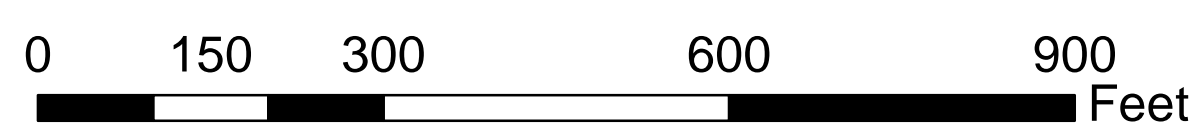
PROPOSED LAND USE PLAN
Matawan Borough
Monmouth County, New Jersey

Prepared by: JAC, Revised by: NAD 10/9/2015
 Source: NJDEP, NJDOT, NJGIN, Monmouth County, Matawan Borough
 H:\Matn\03500\GIS\Projects\Final\Land Use Plan Poster_09_02_2015.mxd

NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information Systems digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.



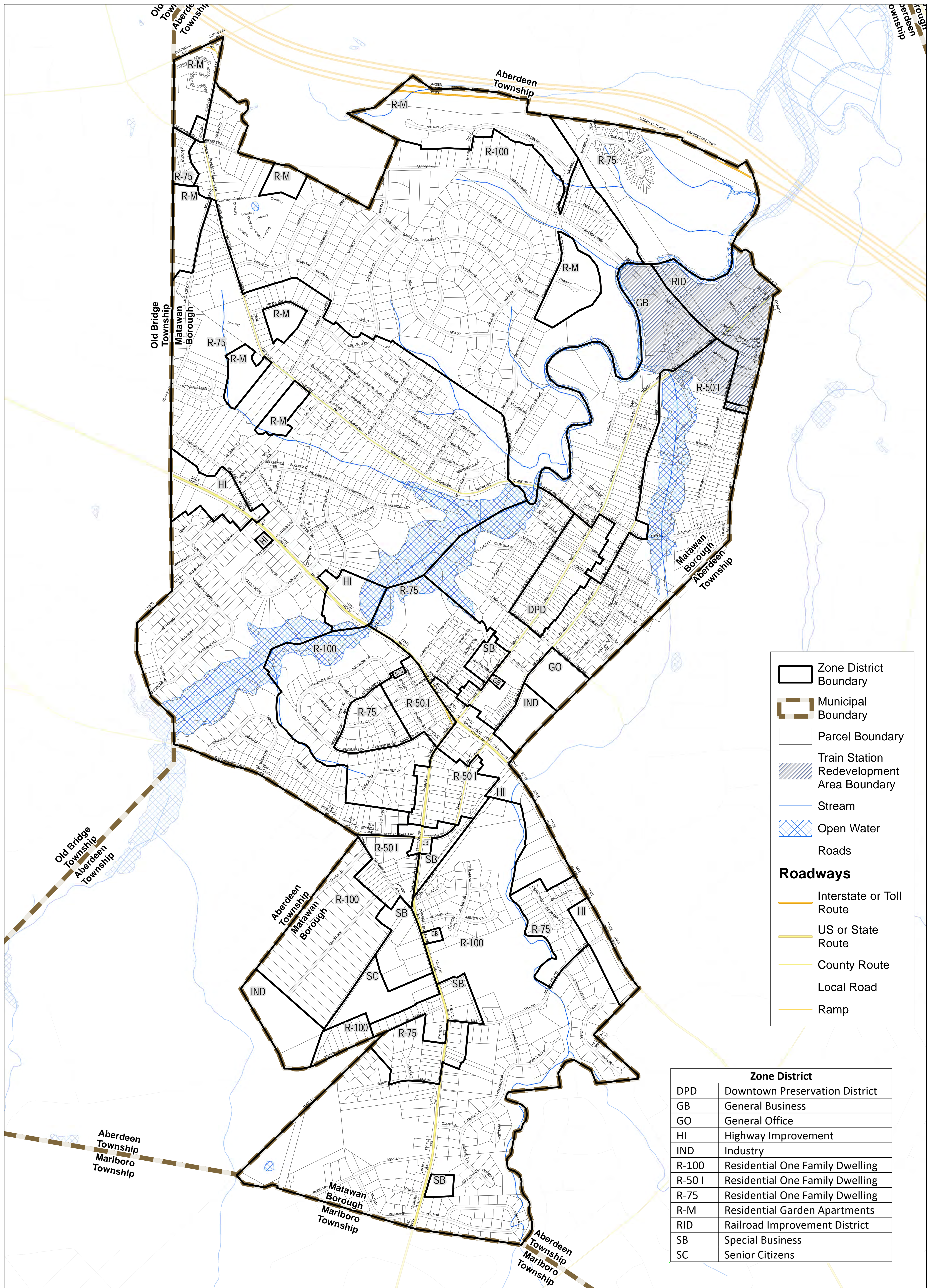
T&M Associates
 11 Tindall Road
 Middletown, NJ 07748-2792
 Phone: 732-671-6400
 Fax: 732-671-7365



PROPOSED DOWNTOWN LAND USE PLAN
Matawan Borough
Monmouth County, New Jersey

Prepared by: JAC, Revised by: NAD 10/9/2015
 Source: NJDEP, NJDOT, NJGIN, Monmouth County, Matawan Borough
 H:\Matn\03500\GIS\Projects\Final\Land Use Plan PosterDowntown_09_08_2015.mxd

NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information Systems digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.



Legend

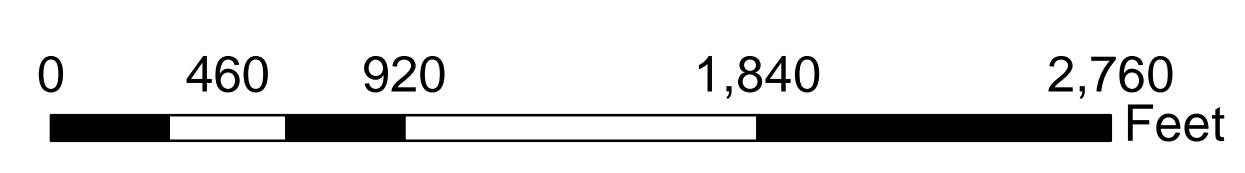
- Zone District Boundary
- Municipal Boundary
- Parcel Boundary
- Train Station Redevelopment Area Boundary
- Stream
- Open Water
- Roads

Roadways

- Interstate or Toll Route
- US or State Route
- County Route
- Local Road
- Ramp

Zone District	
DPD	Downtown Preservation District
GB	General Business
GO	General Office
HI	Highway Improvement
IND	Industry
R-100	Residential One Family Dwelling
R-50 I	Residential One Family Dwelling
R-75	Residential One Family Dwelling
R-M	Residential Garden Apartments
RID	Railroad Improvement District
SB	Special Business
SC	Senior Citizens

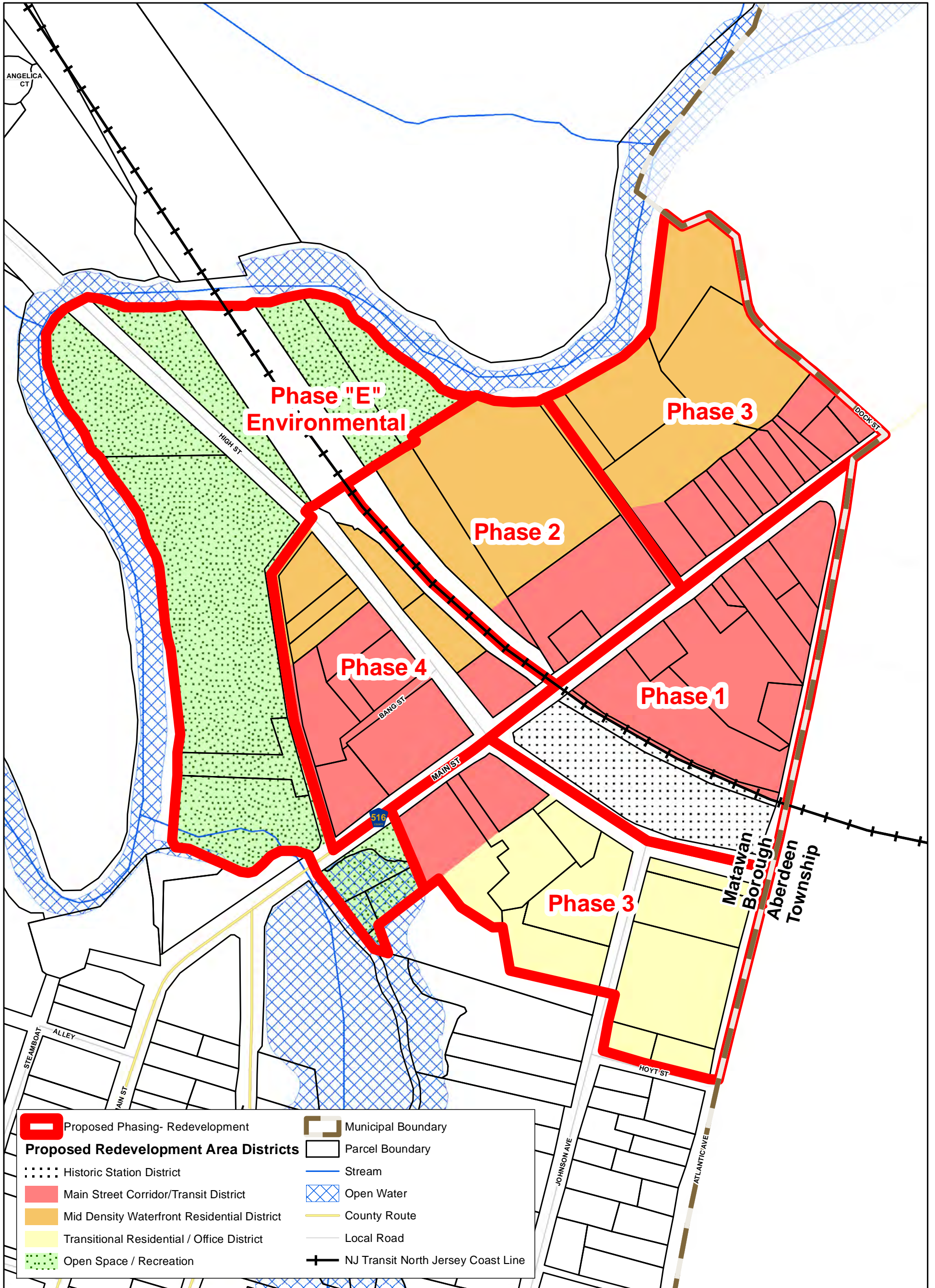
T&M Associates
 11 Tindall Road
 Middletown, NJ 07748-2792
 Phone: 732-671-6400
 Fax: 732-671-7365




**Existing Zoning
 Matawan Borough
 Monmouth County, New Jersey**

Prepared by: JAC, Revised by: NAD 10/9/2015
 Source: NJDEP, NJDOT, NJGIN, Monmouth County, Matawan Borough
 H:\Mtn\03500\GIS\Projects\Final\Zoning Poster.mxd

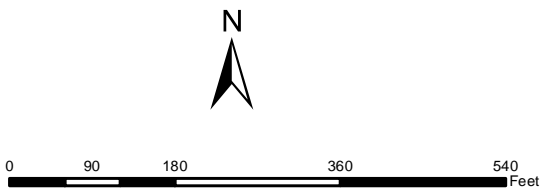
NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information Systems digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.



	Proposed Phasing- Redevelopment		Municipal Boundary
Proposed Redevelopment Area Districts			Parcel Boundary
	Historic Station District		Stream
	Main Street Corridor/Transit District		Open Water
	Mid Density Waterfront Residential District		County Route
	Transitional Residential / Office District		Local Road
	Open Space / Recreation		NJ Transit North Jersey Coast Line


 T&M Associates
 11 Tindall Road
 Middletown, NJ 07748-2792
 Phone: 732-671-6400
 Fax: 732-671-7365

Prepared by: JAC, 7/15/2015
 Source: NJDEP, NJDOT, NJGIN, Monmouth County, Matawan Borough
 H:\Matn\03500\GIS\Projects\Final\Proposed PhasingTrain Station.mxd



Proposed Districts & Phasing (2015)
Train Station Redevelopment Area
Matawan Borough
Monmouth County, New Jersey

NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information Systems digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

Other Plans

- Housing Plan Element
- Stormwater Management Plan Element
- Transit Station Redevelopment Plan and Amendment



THP, Inc.

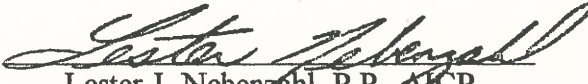
**Matawan Borough
Housing Element and
Land Use Plan 2003**

**Borough of Matawan
Monmouth County, New Jersey**

January, 2003

Prepared for:
Borough of Matawan Planning Board
150 Main Street
Matawan, NJ 07747

Prepared by:


Lester J. Nebenzahl, P.P., ACP
NJ Professional Planners License No. 1977

THP, Inc.
40 Brunswick Woods Drive
East Brunswick, New Jersey 08816

THP File No. 2003 01.110

2003 PLANNING BOARD MEMBERS

Mayor Robert D. Clifton

Jack Shepherd - Chairman

James Duffy - Vice Chairman

Esther Reiner - Secretary

John McKenna

Robert Monfort

Paul Buccellato

Kevin Groode

Ken Cassidy

Joseph Roselli

Martin Pellegrino - Alternate 1

Lois Nicora - Alternate 2

STAFF

Jean B. Montfort, RMC - Borough Clerk

Michael A. Irene, Jr., Esq. - Planning Board Attorney

Keith B. Smith, PE, PP, CME - Planning Board Engineer

Lester J. Nebenzahl, PP, AICP - Municipal Planner

Table of Contents

<u>Subject</u>	<u>Page Number</u>
Introduction	1
Historical Perspective	2
Downtown Preservation District	2
Historic Site	2
Downtown Area Parking	3
Goals and Objectives	4
Housing Element	7
Analysis of Housing Stock	8
Cost of Housing	8
Units Affordable to Low- and Moderate-Income Households	10
Condition of Housing Stock	12
Projected Housing Stock	14
Demographic Characteristics	17
Employment Characteristics	20
Determination of Low- and Moderate-Income Housing Need	23
The Adjustment Process	26
The Rehabilitation Component	33
On-going Efforts to Produce Affordable Housing	34
Land Use Plan	35
Master Plans of Contiguous Municipalities	37
Municipal Master Plans	37
Monmouth County Growth Management Guide	37
The New Jersey State Development and Redevelopment Plan	38
County Solid Waste Management Plan	38

List of Tables

<u>Tables</u>	<u>Page Number</u>
Table H-1 Existing housing stock in Matawan Borough	8
Table H-2 Specified owner-occupied units	9
Table H-3 Renter-occupied housing units by number of person households	9
Table H-4 Cost of renter-occupied units	10
Table H-5 2002 regional income limits	11
Table H-6 Indicators of Substandard Housing (1990)	15
Table H-7 Indicators of Substandard Housing (2000)	16
Table H-8 Dwelling Units Authorized	17
Table D-1 Population Growth	18
Table D-2 Population by Age Cohort	19
Table D-3 Percentage of Households by Income	19
Table E-1 Class of Worker	20
Table E-2 Work Force By Industry	21
Table E-3 Occupational Characteristics	22

List of Tables (Cont.)

<u>Tables</u>	<u>Page Number</u>
Table E-4 Covered Jobs	23
Table HN-1 Matawan Borough's 1987 – Housing Obligation	26
Table HN-2 Vacant Land Inventory	29
Table HN-3 Vacant Land Summary	33

Plates

<u>Plates</u>	<u>Following Page Number</u>
I. Existing Land Use	5
II. Land Use Plan	35

Appendix

Redevelopment Plan for the Designated Redevelopment Area in the Vicinity of the Matawan Train Station, amended April 30, 2001.

INTRODUCTION

The New Jersey Municipal Land Use Law authorizes each municipal planning board to prepare and adopt a master plan to guide the use of lands within the municipality. The Master Plan establishes the local land development policies for the community and the policy framework for the effectuation of the intents and purposes of the state law. The Master Plan is a policy guide, not a law or ordinance. The municipal governing body through the adoption of development regulations including zoning, subdivision, site plan, and other related ordinances implements the Master Plan.

The Master Plan must contain a statement of "objectives, principles, assumptions, policies and standards upon which the constituent proposals for the physical, economic, and social development of the municipality are based, "and a land use plan element which is related to the stated "objectives, principles, assumptions, policies, and standards" of the municipality.

The land use plan must take into account and state its relationship to the housing plan element adopted pursuant to the Fair Housing Act, P.L. 1985, c. 222 (NJSA 52:27D-310) and the other Master Plan elements, which may be adopted by the Planning Board.

The Land Use Plan and Housing Plan elements of the Master Plan form the foundation of the municipal zoning ordinance. The Municipal Land Use Law requires consistency between the plans and zoning ordinance as follows:

C. 40:55D-62 Power to Zone.

The governing body may adopt or amend a zoning ordinance relating to the nature and extent of the uses of land and of buildings and structures thereon. Such ordinance shall be adopted after the planning board has adopted the land use plan element and the housing plan element of a master plan and all of the provisions of such zoning ordinance or any amendment or revision thereto shall either be substantially consistent with the land use plan element and the housing plan element of the master plan or designed to effectuate such plan elements; provided that the governing body may adopt a zoning ordinance or amendment or revision thereto which in whole or part is inconsistent with or not designed to effectuate the land use plan element and the housing plan element, but only by affirmative vote of a majority of the full authorized membership of the governing body with the reasons of the governing body for so acting set forth in a resolution and recorded in its minutes when adopting such a zoning ordinance.

Historical Perspective

The Borough of Matawan adopted its first Master Plan in 1965. The Borough Planning Board adopted a revised Land Use Plan in 1978. In 1982, the Planning Board reexamined the Master Plan at which time no changes were made to the 1978 Plan. The Planning Board adopted a new plan in 1989 and undertook another reexamination in 1995 in accordance with the New Jersey Municipal Land Use Law, which requires each municipality to reexamine its Master Plan and Development Regulations at least once every six years.

The 1995 Reexamination Report determined that there had been no significant changes in the assumptions, policies, and objectives that formed the basis for the 1989 Master Plan and Development Regulations. However, there were a few areas of concern as noted on page 4 of the 1995 Reexamination Report:

For the most part, there have been no significant changes in the assumptions, policies, and objectives that form the basis for the 1989 Master Plan and Development Regulations. However, there are several areas of concern that need to be addressed in order to maintain the unique character so specific to Matawan Borough:

- Downtown Preservation District

The first area of concern to be addressed is the incompatibility of commercial and residential land use both in and near the Downtown Preservation District. The Planning Board studied this issue in detail in 1994, and the recommendations as contained in this study should be implemented.

- Historic Sites

The Historic Sites Commission began an assessment of the historic sites within the Borough in 1990, and this study continues to the present. The purpose of the evaluation is to expand the area in which historic properties can be preserved. There have been some instances where historic sites outside of the downtown preservation district have been demolished or changed without any input from the Commission. The monitoring of historic sites within the area by those

knowledgeable in various related fields is crucial to preserving the character of Matawan Borough.

- Downtown Area Parking

With the growth of surrounding municipalities and within the Borough population, insufficient parking continues to be a problem in the downtown area. This condition is demonstrated by the numerous applications for variances for insufficient parking submitted from businesses located downtown. The ongoing viability of the downtown area as both a commercial, residential, and historically significant area continues to be of major concern.

In addition to the above noted concerns provided in the 1995 Reexamination Report, the Matawan Borough Council authorized the Borough Planning Board to investigate the possible designation of land parcels in vicinity of the Matawan Train Station for Redevelopment in accordance with statutory criteria established by the Local Redevelopment and Housing Law (NJSA 40A:12A-2 et seq.). Based upon a study prepared in May 2000, which identified criteria satisfied under State Statute for the designation of the Matawan Train Station and surrounding land parcels as a "Redevelopment Area," the Matawan Borough Council formally designated such lands for Redevelopment pursuant to the local Redevelopment and Housing Law.

Subsequent to that designation, the Borough Planning Board prepared a Redevelopment Plan for the subject area. The plan, dated February 2001, and amended through April 30, 2001, set forth proposed development within the existing Railroad

Improvement District, consisting of four land uses categories as follows:

- Mid-Rise Apartments/Townhouses,
- Office and Retail Commercial,
- Hotel/Office and Retail Commercial, and
- Open Space/Recreation.

The Plan emphasizes the need to preserve and refurbish the historic character of the Matawan Train Station; provide adequate commuter parking for the train station, and for land use development within the Redevelopment Area; and provide compatibility with redevelopment

proposed in neighboring land parcels in Aberdeen Township, which are the subject of a Redevelopment Plan adopted in October 1999 by Aberdeen Township.

This Master Plan update sets forth the revised Land Use Plan and Housing Element as recommended by the Borough Planning Board in the 1995 Reexamination Report as well as the April 2001 Redevelopment Plan for the lands in the vicinity of the Matawan Train Station.

Goals and Objectives

The major goals and objectives relating to land development in the Borough of Matawan have remained consistent since the adoption of the 1978 Master Plan Revision. Specifically, the 1989 Reexamination Report and Master Plan Revision reaffirmed the goals and objectives of the 1978 Master Plan, as was the case in 1982. As noted in the 1995 Reexamination Report:

The primary goal of the Borough's planning efforts as stated in the 1978 plan and reaffirmed through the years has been:

- To achieve a realistic approach for maintaining the existing residential and commercial character, while providing for quality development of the few remaining vacant tracts within the Borough.

The following objectives were set forth to achieve this goal:

- The pattern of development which has occurred in the past should not be drastically changed; and,
- Future development proposals must continue to be reviewed with a deep concern for compatibility with surrounding areas and potential effects upon all Borough citizens.

Promotion of the primary goals was restated and elaborated upon in the Land Use Plan Element, which includes the following additional goals and objectives:

- To insure the harmonious inter-relationships of the various land use activities throughout the Borough and with the neighboring municipalities;
- The continued maintenance of Matawan Borough's residential character and preservation of community appearance;

- To preserve environmentally sensitive lands such as flood plain areas and protect established and future development from the negative effects of flooding and erosion; and,
- To encourage high quality design in residential, commercial, and industrial development.

The Redevelopment Plan amended through April 30, 2001 for the Railroad Improvement District also set forth various goals and objectives for redevelopment as follows:

- The "Redevelopment Plan" should be compatible with the Borough's Master Plan;
- Pedestrian linkages to the Historic Downtown Business District should be encouraged;
- Provide adequate commuter parking;
- The Borough's "Redevelopment Plan" should recognize the Redevelopment Plan in neighboring Aberdeen. Both plans should be compatible whenever possible;
- Provide the opportunity to live, work, and shop within the redevelopment area and create a village center; and,
- The scope of development should not overwhelm existing and/or proposed infrastructure.

As noted in the 1995 Reexamination Report, the analysis of land use, demographic, and economic changes, which had occurred since the 1978 Master Plan, demonstrated the limited ability of the Borough to absorb additional residential and commercial growth due to the scarce amount of vacant developable land.

The 1995 Reexamination Report indicated approximately 20 acres of vacant land had been developed for the period 1988 – 1995. Review of the Borough's building permit records indicated that an additional 12 to 15 acres of vacant land had been developed since 1995. During that time period, and since 1995, development on vacant land parcels has generally only been for single-family residential development, while some commercial land use redevelopment has occurred in the Borough. Plate 1 provides existing land use in the Borough.

EXISTING LAND USE

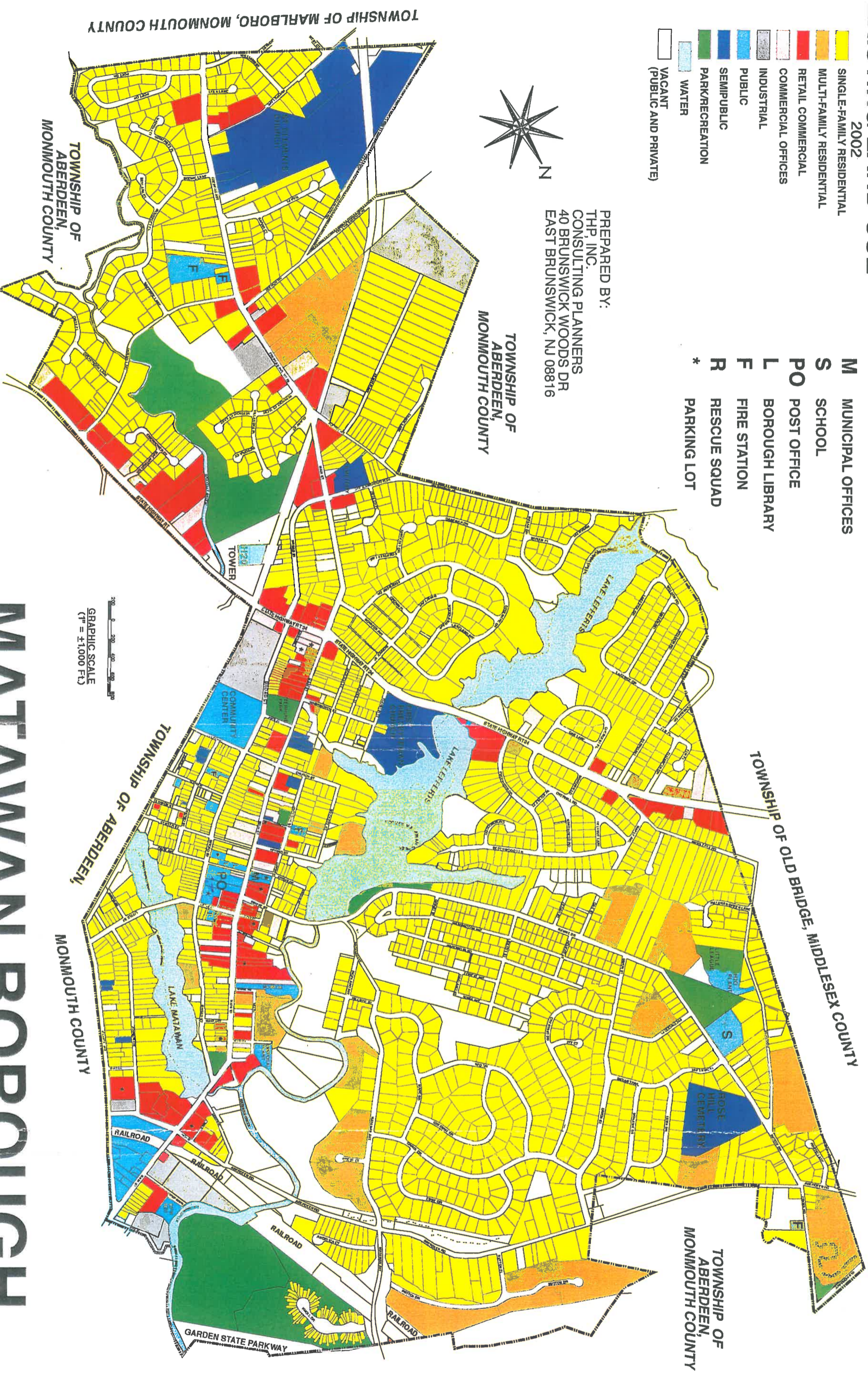
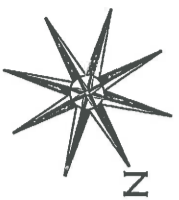
2002

- SINGLE-FAMILY RESIDENTIAL
- MULTI-FAMILY RESIDENTIAL
- RETAIL COMMERCIAL
- COMMERCIAL OFFICES
- INDUSTRIAL
- PUBLIC
- SEMIPUBLIC
- PARK/RECREATION
- WATER
- VACANT (PUBLIC AND PRIVATE)

PUBLIC FACILITIES

- M** MUNICIPAL OFFICES
- S** SCHOOL
- PO** POST OFFICE
- L** BOROUGH LIBRARY
- F** FIRE STATION
- R** RESCUE SQUAD
- *** PARKING LOT

PREPARED BY:
 THP, INC.
 CONSULTING PLANNERS
 40 BRUNSWICK WOODS DR
 EAST BRUNSWICK, NJ 08816



GRAPHIC SCALE
 (1" = 1,000 FT.)

MATAWAN BOROUGH

MONMOUTH COUNTY, NEW JERSEY

Reflecting upon the lack of sufficient vacant land within the Borough which could accommodate high quality residential and commercial development, and in consideration of existing development surrounding the Matawan Train Station and overall lack of proper utilization of the area, the designation of land parcels in the vicinity of the Borough Train Station as a "Redevelopment Area" and subsequently adopted Redevelopment Plan, seeks to encourage high quality development within the Borough, which effectuates the goals and objectives, noted above. The Redevelopment Plan specifies various residential and commercial land use categories and general design criteria to compliment proposed redevelopment adjacent to the Matawan Train Station in neighboring Aberdeen Township. The Plan also proposes the preservation and conservation of nearby environmentally sensitive lands adjacent to the Matawan Creek.

The goals and objectives of the 1978 Master Plan as stated above continue to provide an appropriate guide for the future development and redevelopment of the Borough and again are reaffirmed as part of this Master Plan revision.

HOUSING ELEMENT

New Jersey's Fair Housing Act of 1985 (N.J.S.A. 52:27D-301 et seq.) and the Municipal Land Use Law (MLUL) (C. 40:55D-1 et seq.) require municipalities to adopt a housing element that addresses the municipal present and prospective housing need, "with particular attention to low and moderate income housing." A housing element must be designed to achieve the goal of providing affordable housing to meet present and prospective housing needs, with particular attention to low- and moderate-income housing. The housing element must also include the municipality's strategy for addressing its present and prospective housing needs and shall contain the following:

1. An inventory of the municipality's housing stock by age, condition, purchase or rental value, occupancy characteristics and type, including the number of units affordable to low and moderate income households and substandard housing capable of being rehabilitated;
2. A projection of the municipality's housing stock, including the probable future construction of low and moderate income housing, for the next six years, taking into account, but not necessarily limited to, construction permits issued, approvals of applications for development and probable residential development of lands;
3. An analysis of the municipality's demographic characteristics, including but not necessarily limited to, household size, income level and age;
4. An analysis of the existing and probable future employment characteristics of the municipality;
5. A determination of the municipality's present and prospective fair share for low and moderate income housing and its capacity to accommodate its present and prospective housing needs, including its fair share for low and moderate income housing; and
6. A consideration of the lands that are most appropriate for construction of low and moderate income housing and of the existing structures most appropriate for conversion to, or rehabilitation for, low and moderate income housing, including a consideration of lands of developers who have expressed a commitment to provide low and moderate income housing.

Analysis of Housing Stock

As of the Census 2000, there were 3,640 total housing units in Matawan Borough. The vast majority of these units, 97.0 percent, were occupied. Of the 3,531 occupied housing units in the Borough, 2,067 (58.5 percent) were owner-occupied and 1,464 (41.5 percent) were renter-occupied units. In examining the Borough's housing stock, it is clearly more diverse than the housing stock of other municipalities within the Mercer-Monmouth- Ocean-Housing Region established by New Jersey's Council on Affordable Housing (COAH). TABLE H-1 provides a breakdown of residential dwelling units by type of structure.

Table H-1
Existing Housing Stock in Matawan Borough

Units in Structure	Number	Percent of Total
Total housing units	3,656	100.0
1-unit detached	2,123	58.1
1-unit attached	91	2.5
2-units	198	5.4
3 or 4 units	253	6.9
5 to 9 units	305	8.3
10 to 19 units	307	8.4
20 or more units	379	10.4
Mobile home	0	0.0
Boat, RV, van, etc.	0	0.0

Source: Census 2000 Summary File 3 (SF 3) – Sample Data

Cost of Housing

The median value of Specified owner-occupied housing units in Matawan Borough was \$178,500, according to the 2000 Census. Over 60% of the owner occupied housing stock was valued between \$100,000 to \$199,999. By comparison, the median value for owner-occupied housing unit in Monmouth County was \$203,100 in 2000. The median value of homes in Mercer and Ocean Counties (the other counties comprising the Matawan housing region) were \$147,400 and \$131,300 respectively. Thus, value of housing in Matawan is relatively affordable in relation to the housing market for the Monmouth County region.

**Table H-2
Specified Owner-Occupied Units**

Value	Units	Percentage
Less than \$50,000	8	0.4
\$50,000 to \$99,000	71	3.5
\$100,000 to \$149,000	395	19.7
\$150,000 to \$199,999	835	1.6
\$200,000 to \$299,999	570	28.4
\$300,000 to \$499,999	121	6.0
\$500,000 to \$999,999	7	0.3
\$1,000,000 or more	0	0.0

Source: Census 2000 Summary File 3 (SF 3) – Sample Data

For rental units, the median gross rent in Matawan was \$808. By way of comparison, the median gross rent in Mercer, Monmouth, and Ocean Counties (the Counties that form COAH's housing region) are \$727, \$759, and \$819. The higher rents in the Borough could be reflective of a need for additional rental units. However, in Aberdeen Township, a contiguous community, the median vacant-for-rent housing units was \$1,125. Of the 1,464 renter-occupied housing units in the Borough, persons 65 years old and over occupied 198 units. Persons 25 to 44 years old occupied 785 units.

**Table H-3
Renter-Occupied Housing Units by Number of Person Households**

# of Persons	# of Units	Percentage
1-person household	611	41.7
2-person household	486	33.2
3-person household	188	12.8
4-person household	199	8.1
5-person household	37	2.5
6-person household	17	1.2
7-or-more-person household	6	0.4

Source: Census 2000 Summary File 2 (SF 2) – 100-Percent Data

**Table H-4
Cost of Renter-Occupied Units**

Gross Rent	Number	Percentage
Less than \$200	9	0.6
\$200 to \$299	50	3.4
\$300 to \$499	63	4.3
\$500 to \$749	313	21.6
\$750 to \$999	808	55.7
\$1,000 to \$1,499	157	10.8
\$1,500 to or more	34	2.3
No cash rent	17	1.2

Source: Census 2000 Summary File 3 (SF 3) – Sample Data

Units Affordable to Low- and Moderate-Income Households

Low-income households are defined as those earning less than or equal to 50 percent of the regional median income. Moderate-income households earn more than 50 percent of median income but less than 80 percent.

COAH has developed a sliding scale defining the income of eligible low- and moderate-income households. For example, the median income of a household of one person is less than for a household of two persons. COAH has determined separate median incomes for households of one person up to households of eight persons.

Similarly, housing units are to be priced to be affordable to households who could reasonably be expected to live within the housing units. For example, the current COAH rules require that an efficiency unit be affordable to a household of one person. The average one bedroom unit must be affordable to a one and a half person household. Similarly, the average two and three bedroom units must be affordable to household sizes of 3.0 and 4.5 persons, respectively. Table H-5 displays COAH's 2002 regional income limits by household size.

**Table H-5
2002 Regional Income Limits**

	1 Person	2 Person	3 Person	4 Person	5 Person	6 Person	7 Person	8 Person
Low	\$24,801	\$28,344	\$31,887	\$35,430	\$38,265	\$41,099	\$43,933	\$46,768
Moderate	\$39,682	\$45,350	\$51,019	\$56,688	\$61,233	\$65,758	\$70,293	\$74,828

Source: Council on Affordable Housing (Adopted April 3, 2002)

To be affordable, a household should not be paying more than 28 percent of its gross income on principal, interest, taxes and insurance, subsequent to a minimum down payment of 5 percent. A rental unit is affordable if the household is paying no more than 30 percent of its income on rent and utilities. To illustrate, the average three-bedroom rental should be affordable to a theoretical household of 4.5 persons. Assuming that a 4.5 person moderate-income household earned \$58,955 in 2001, the monthly rent and utilities for an affordable three-bedroom unit may not exceed \$1,474. For a three-bedroom rental where the low-income household earns \$36,847, the monthly rent cannot exceed \$921.

It is not possible to accurately determine how many units were affordable to low- and moderate-income households when the census was taken in 2000. To make this calculation properly would require an analysis of the 2000 income limits, interest rates and tax rates. However, assuming that most of the owner occupied housing in Matawan Borough are three bedroom units, an owner occupied unit would have been considered affordable if it could be purchased by a moderate-income household of 4.5 people. Assuming a household can afford a home priced at 2.5 times the household income, a household earning \$58,955 per year could afford a \$147,388 house. By interpolating the census data in Table H-5, one can estimate that 464 owner occupied housing units may have been affordable to low- and moderate-income households in 2000.

With regard to rentals, it is assumed that an efficiency unit should be affordable to a one-person household. A one-bedroom unit should be affordable to a one and a half person household. Similarly a two-bedroom unit should be affordable to a 3.0 person household. Given these standards, rent plus utilities on affordable efficiency, one, two, and three bedroom units could not exceed, \$992, \$1,063, \$1275, and \$1,475, respectively per month in 2000.

The 2000 Census does not provide a detailed summary of rents to determine the precise number of affordable rents based on COAH's criteria. However, by comparing COAH's criteria to the rents by bedroom size provided in Table H-5, one can estimate (through interpolation) that:

1. All 60 efficiency units were affordable in 2000;
2. All 368 one (1) bedroom units were affordable;
3. Approximately 394 two (2) bedroom units were affordable;
4. Approximately 97 three (3) bedroom units were affordable during 2000.

Condition of Housing Stock

COAH utilizes the 1990 Census to try to estimate the number of substandard housing units in Matawan Borough that are occupied by low- and moderate-income households. COAH uses the census to determine which units low- and moderate-income households occupy. COAH then analyzes the low- and moderate-income housing stock based on the following factors:

Year Structure Built	A distinction is made between units built before 1940 and units built thereafter. Research has demonstrated that units built before 1940 are much more likely to be in substandard condition. This factor is probably the most dominant factor in estimating the condition of a municipal housing stock.
Persons per Room	1.01 or more persons per room is an index of overcrowding.
Plumbing Facilities	Complete plumbing facilities include: (1) hot and cold piped water; (2) a flush toilet; and (3) a bathtub or shower. Housing units are classified as lacking complete plumbing facilities when any one of these three facilities is not present.
Kitchen Facilities	Complete kitchen facilities include: (1) a sink with piped water; (2) a range, or cook top and oven; and (3) a refrigerator. All kitchen facilities must be located in the house, apartment, or mobile home, but they need not be in the same room.
Heating Fuel	Inadequate heating is use of coal, coke, wood or no fuel for heating.
Sewer	Inadequate sewer services are indicated by a lack of public sewer, septic tank or cesspool.

Water

Inadequate water supply is indicated by a lack of either city water, drilled well or dug well.

Not all of the census indicators of substandard housing are available at the municipal level. Therefore, COAH developed a procedure in which it estimates the number of low- and moderate-income households in substandard housing within a census region and then estimates the number of low- and moderate-households in substandard housing at the municipal level based on census indicators that are available at the municipal level.

The procedure classifies a low- and moderate-income unit as substandard if it "fails" two or more of the census indicators listed above. Once a census regional total of substandard low- and moderate-income units has been calculated, the procedure assigns a share of this total to each municipality within the census region based on the following indicators that are available at the municipal level:

Plumbing Facilities	- non-exclusive use of complete plumbing
Persons per Room	- more than 1.01 persons per room
Age of Housing	- housing built before 1940
Water or Sewer Problem	- deficiency in one or the other
No Telephone	- absence of telephone in unit
Nonstandard Heating Fuel	- use of coal, coke, or wood for heating, or no fuel.

In Appendix A of its rules, COAH describes its approach for estimating the condition of low- and moderate-income housing in a municipality as follows:

It should be realized that any of these characteristics need not signal deficiency on their own. The unit must be occupied by a poor household; be more than 50 years old and contain a single deficiency; or be similarly occupied, be 50 years old or less, but contain an additional detrimental condition to signal deficiency. Even then, the unit may not be actually deficient, but there is a high probability that it will be subsequently lost from the housing stock.

This procedure for establishing housing deficiency: (1) is drawn from the literature of the field; (2) encompasses a broad array of physical insufficiency including such items as incomplete or inadequate kitchen and plumbing, crowding, inadequate heating fuels, and insufficient sewer and

water resources; (3) ensures against erroneous inclusion of good units; and (4) provides a very high probability that the housing identified at least in relative terms, is clearly less than adequate.

The reason COAH must use indicators of substandard housing is that the census does not classify housing units as "standard" or "substandard." Thus, the 1990 Census data presented on TABLE H-6 is the data COAH used to estimate the number of substandard housing units for Matawan Borough. Although not utilized for determining the Borough's current number of substandard units, for comparative purposes, TABLE H-7 presents similar data presented in the 2000 Census.

The census indicators available at the municipal level indicate a sound housing stock. Virtually all units in the Borough have complete kitchen and plumbing facilities and are served by public water and sewer. Only 3.7% of the occupied housing units were overcrowded at the time the census was conducted and only 3.3% of the housing units were constructed prior to 1940.

Projected Housing Stock

Since 1990, all the new housing constructed in Matawan has been either single-family homes or two to four family housing units. As shown on the following table (TABLE H-8), Matawan has added 98 total units through the year 2001 or an average of approximately 8.2 units per year. Given the lack of remaining developable vacant land within the Borough, it is not anticipated that the rate of residential development will significantly increase.

However, new residential development may be associated with redevelopment in the vicinity of the Matawan Train Station. Otherwise, it can be expected that in-fill single-family residential development in existing neighborhoods in the Borough will continue to occur.

**Table H-6
Indicators of Substandard Housing (1990)**

	# of Units	Percentage
Number of Persons Per Room		
1.01 or more	6	0.2
Plumbing Facilities		
Units with Complete Plumbing Facilities	3,721	99.8
Units Lacking Complete Plumbing Facilities	9	0.2
Heating Equipment		
Utility Gas	1,838	52.2
Bottled, Tank, or LP Gas	31	1.5
Electricity	382	10.8
Fuel Oil, Kerosene, etc.	1,250	35.5
Coal or Coke	0	0.0
Wood	15	4.3
Solar Energy	0	0.0
Other Fuel	7	0.2
No Fuel Used	26	0.7
Kitchen Facilities		
Complete Kitchen Facilities	3,730	100.0
Lacking Complete Facilities	2	0.01
Sources of Water		
Public System or Private Company	3,730	100.0
Individual Well		
Drilled	0	0.0
Dug	0	0.0
Some Other Source	0	0.0
Sewage Disposal		
Public Sewer	3,723	99.8
Septic Tank	7	0.2
Other Means	0	0.0
Telephone		
With Telephone	3,502	99.4
Without Telephone	21	0.6
Year Structure Built		
1999 to March 2000	33	0.9
1995 to 1998	32	0.9
1990 to 1994	124	3.4
1980 to 1989	330	9.0
1970 to 1979	732	20.0
1960 to 1969	1,070	29.3
1940 to 1959	848	23.3
1939 or earlier	487	13.3
Source: Census 1990 Summary File 3 (SF 3) - Sample Data		

Table H-7
Indicators of Substandard Housing (2000)

	# of Units	Percentage
Number of Persons Per Room		
1.01 or more	133	3.7
Plumbing Facilities		
Units with Complete Plumbing Facilities	3,525	99.8
Units Lacking Complete Plumbing Facilities	6	0.2
Heating Equipment		
Utility Gas	2,353	66.3
Bottled, Tank, or LP Gas	12	0.3
Electricity	397	11.2
Fuel Oil, Kerosene, etc.	751	21.2
Coal or Coke	0	0.0
Wood	5	0.1
Solar Energy	0	0.0
Other Fuel	6	0.2
No Fuel Used	26	0.7
Kitchen Facilities		
Complete Kitchen Facilities	3,531	100.0
Lacking Complete Facilities	0	0.0
Sources of Water		
Public System or Private Company	3,531	100.0
Individual Well		
Drilled	0	0.0
Dug	0	0.0
Some Other Source	0	0.0
Sewage Disposal		
Public Sewer	3,524	99.8
Septic Tank	7	0.2
Other Means	0	0.0
Telephone		
With Telephone	3,512	99.5
Without Telephone	19	0.5
Year Structure Built		
1999 to March 2000	33	0.9
1995 to 1998	32	0.9
1990 to 1994	124	3.4
1980 to 1989	330	9.0
1970 to 1979	732	20.0
1960 to 1969	1,070	29.3
1940 to 1959	848	23.3
1939 or earlier	487	13.3
Source: Census 2000 Summary File 3 (SF 3) -- Sample Data		

**Table H-8
Dwelling Units Authorized**

Year	Single Family	2 to 4 Family Added	5 or more Total Family	Residential Demolitions	Total Added
1990	9	0	0	3	6
1991	6	0	0	2	4
1992	13	0	0	0	13
1993	10	2	0	0	12
1994	3	0	0	1	2
1995	9	0	0	5	4
1996	18	0	0	0	18
1997	8	0	0	0	8
1998	5	0	0	0	5
1999	7	0	0	0	7
2000	14	0	0	0	14
2001	<u>5</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>5</u>
Totals	107	2	0	11	98

Source: NJ Department of Labor; Borough of Matawan Building Department

Demographic Characteristics

Following World War II, Matawan's population increased rapidly. Its population nearly tripled during the 1950's and 1960's. Following a decade of decline, the Borough's population began increasing during the 1980's. However, the Borough population again declined through the 1990's to a total of 8,910 persons as reported in the United States 2000 Census. TABLE D-1 presents Matawan Borough population data from 1940 to the present.

**Table D-1
Population Growth**

Year	Population	Population Increase	Percentage Increase
1940	2,758	-	-
1950	3,739	981	35.6
1960	5,097	1,358	36.3
1970	9,136	4,039	79.2
1980	8,837	-299	-3.3
1990	9,270	433	4.9
2000	8,910	-360	-3.9
*2001	8,937	27	0.3

Source: Census 2000 Summary File 1 (SF 1) – 100 Percent Data
* Estimate: Monmouth County Planning Board

Monmouth County has projected little or no growth in the Matawan Borough population. The County has projected that 9,300 people will live in Matawan Borough in 2010. The U.S. Census 2000 reports that there were 3,531 households in the Borough in 2000. Given the 2000 population of 8,910 persons, the average Matawan household consisted of 2.52 persons. By way of comparison, the average household size in Monmouth County was 2.70 persons.

The census data indicates that the Matawan Borough population is slightly younger than the Monmouth County population (see TABLE D-2). The largest difference in age profiles between the Borough and the County is in the 24-44 year age cohort. As shown in TABLE D-2; over 36 percent of the Borough's population falls within this age cohort, while only 30 percent of the County population falls within this age cohort. This is an indication that Matawan is an attractive place to reside for young families.

**Table D-2
Population by Age Cohort**

Age Cohort	Matawan Borough Distribution (%)	Monmouth County Distribution (%)
Under 5 years	6.3	6.9
5 to 9	6.8	7.6
10 to 14	5.8	7.5
15 to 19	5.6	6.2
20 to 24	5.2	4.8
25 to 34	17.4	12.2
35 to 44	19.0	18.2
45 to 54	14.5	15.0
55 to 59	5.2	5.3
60 to 64	3.5	3.8
65 to 74	5.8	6.6
75 to 84	3.7	4.4
85 years and over	1.0	1.6

Source: Census 2000 Summary File 1 (SF 1) – 100 Percent Data

The 2000 Census indicates that the median income of Matawan residents is comparable to the median income for Monmouth County. The median household income of Matawan residents in 1999 was \$63,594. The median household income for the County was \$64,271. The State household median income was \$49,610.

**Table D-3
Percentage of Households by Income**

Annual Income	Matawan Borough	Monmouth County
Less than \$10,000	3.8	5.5
\$10,000 to \$14,999	4.2	4.1
\$15,000 to \$24,999	7.7	7.8
\$25,000 to \$34,999	7.8	8.6
\$35,000 to \$44,999	7.5	8.4
\$45,000 to \$59,999	15.5	11.8
\$60,000 to \$99,999	28.9	25.9
\$100,000 to \$149,999	16.3	15.8
\$150,000 or more	8.3	12.1

Source: Census 2000 Summary File 1 (SF 1) – 100 Percent Data

Employment Characteristics

The 2000 Census reports on work activity of residents 16 years and older. As reported in the Census, 2,722 out of 3,476 men and 2,211 out of 3,573 women worked in 1999. The average commuting time of the Matawan worker was 36.5 minutes. As shown on TABLE E-1, most Matawan residents worked in the private sector.

Table E-1
Class of Worker

Class of Worker	Number of Persons	Percentage
Private Wage and Salary Workers	3,860	82.3
Government Workers	571	12.2
Self-employed Workers in own (not incorporated businesses)	225	4.8
Unpaid Family Workers	34	0.7

Source: Census 2000 Summary File 3 (SF 3) – Sample Data

TABLE E-2 provides a summary of the Matawan work force. An analysis of employed persons (over 16) by Industry indicates that the majority of Matawan workers were involved in the retail trade, real estate, and management services. As illustrated in Table E-2, 14.6 percent of Matawan's work force was employed in health related and educational services.

Most of Matawan workers are involved in managerial and office occupations. Nearly 81 percent of the Matawan work force have been classified as management, professional, and related occupations; sales and office occupations; or as being involved in service occupations. This employee profile is very similar to the profile for Monmouth County.

**Table E-2
Work Force by Industry**

Industry	Number of Employees	Portion of Work Force Percentage
Agriculture, Forestry, Fishing & Hunting, and Mining	0	0.0
Construction	378	8.1
Manufacturing	386	8.2
Wholesale Trade	158	3.4
Retail Trade	484	10.3
Transportation and Warehousing, and Utilities	263	5.6
Information	298	6.4
Finance, Insurance, Real Estate, and Rental and Leasing	557	11.9
Professional, Scientific, Management, Administrative, and Waste Management Services	608	13.0
Educational, Health and Social Services	684	14.6
Arts, Entertainment, Recreation, Accommodation, and Food Services	415	8.8
Other Services (except Public Administration)	224	4.8
Public Information	235	5.0
Source: Census 2000 Summary File (SF 3) – Sample Data		

**Table E-3
Occupation Characteristics**

Occupation	Matawan Percentage	Monmouth County Percentage
Management, Professional, and Related Occupations	42.0	41.8
Service Occupations	12.7	12.4
Sales and Office Occupations	26.2	29.4
Farming, Fishing, and Forestry Occupations	0.0	0.2
Construction, extraction, and Maintenance Occupations	8.2	7.7
Production, Transportation, and Material Moving Occupations	8.9	8.4
Source: Census 2000 Summary File (SF 3) – Sample Data		

The New Jersey Department of Labor compiles data on private sector employers who pay unemployment insurance. This private sector data, related to covered jobs, is perhaps the best data available to measure the growth in employment within a municipality or county. This data is collected for purposes of covered employment insurance and often, the location of a specific employer is erroneous because:

- The employer uses a post office box address in a Borough although the company is actually located in a different municipality;
- The employer uses one address for all of its employees even though they are located in a variety of branches; or
- Because the address given may be the address of the accountant that completed the Department of Labor form.

Covered employment data published by the Department of Labor through 1998 indicates that, since 1984 (an important date in that it is used by COAH to assign housing need), the covered jobs within the Borough have increased by 31 percent. During the same time period, the covered jobs within the County increased by 22.2 percent. Given the limited availability of vacant land within the Borough, it would generally not be expected that the Borough would experience a

significant increase in employment over the next six years; however, residential and commercial redevelopment in the vicinity of the Matawan Train Station is likely to result in a moderate increase in employment.

**Table E-4
Covered Jobs**

Year	Matawan Borough	Monmouth County
1984	2,642	154,573
1985	3,023	155,240
1986	3,226	161,207
1987	3,579	171,250
1989	3,405	178,154
1990	2,924	170,419
1991	2,894	166,333
1993	2,932	172,156
1994	3,254	175,156
1995	3,563	179,137
1996	3,756	181,804
1997	3,421	184,804
1998	3,460	188,836

Source: New Jersey Department of Labor

Determination of Low- and Moderate-Income Housing Need

The Mount Laurel Decisions established that every municipality is responsible for a share of a regional housing need. The New Jersey Council on Affordable Housing (COAH), pursuant to the Fair Housing Act, is responsible for defining regions and developing criteria for establishing each municipality's share of the regional need. Matawan Borough lies within a region consisting of Mercer, Monmouth and Ocean Counties (Group 3 – East Central). The Matawan low- and moderate-income housing responsibility consists of:

- A present need;
- A share of the low- and moderate-income households that COAH has estimated to have formed from 1987 – 1993; and

- A share of the low- and moderate-income households that COAH projects will form during the 1993 – 1999 period.

The present need is an estimate of substandard units occupied by low- and moderate-income households. It is estimated for each municipality and for the overall housing region through use of the 1990 census. COAH then establishes a regional standard of low- and moderate-income households living in substandard housing. The following excerpt from The COAH Handbook describes the calculation of the regional standard and its use:

The standard is determined by dividing the number of substandard units occupied by low- and moderate-income households by the total occupied housing units in the region. In examining the census estimates of substandard housing units occupied by low- and moderate-income households within each municipality, the municipal responsibility for addressing substandard units is limited by this regional standard. Thus, if the regional standard is two percent and within a specific municipality three percent of the occupied housing stock represents substandard units occupied by low- and moderate-income households, the municipal responsibility is capped at the regional standard of two percent. The remaining obligation becomes a regional obligation assigned to municipalities within the housing region.

The logic of reallocating a portion of the present needs stems from language in the Mount Laurel II Decision. The court determined that some municipalities had a disproportionate share of low- and moderate-income housing in substandard condition because the municipalities had housed a disproportionate share of low- and moderate-income households. Therefore, the court “capped” an individual municipality’s responsibility at a regional standard. The substandard low- and moderate-income units that remain in the municipal responsibility represent the municipal indigenous need. The substandard units that become a regional responsibility are called “reallocated present need”.

In Matawan, COAH estimates that there are 21 substandard units occupied by low- and moderate-income households. All of these units remain the Borough’s responsibility pursuant to COAH’s methodology. COAH has determined that the Borough has a responsibility for seven units that are generated from the regional reallocated present need.

In 1986, COAH projected the 1987 – 1993 housing need for each municipality based on the population projections available at the time. Population projections were converted into household projections and, since approximately 40 percent of all households are low- and moderate-income households, the 1987 – 1993 projection of need equaled approximately 40 percent of the household projection.

COAH's 1987 – 1993 projections overstated the number of households that actually formed during the projection period. The actual growth from 1987 – 1993 was approximately one-half the projection. Therefore, COAH reduced each municipality's 1987 – 1993 housing responsibility based on the estimates of actual growth.

The final component of municipal housing need is a projection of housing need for the 1993 – 1999 period. This projection of low- and moderate-income household formation is performed in a similar manner to the 1987 – 1993 projection.

COAH's formula for determining housing need is very complex. One reason it is so complex is that it tries to recognize that sound housing is lost and becomes available to low- and moderate-income households as a result of market forces. Demolitions reduce the number of market rate units available to low- and moderate-income households. Sound housing units are sold to low- and moderate-income households (filtering). Owners of structures convert them into housing units that are affordable to low- and moderate-income households (conversions). Landlords rehabilitate substandard units without any subsidy from the municipality (spontaneous rehabilitation).

COAH attempts to project the level of all this activity that will occur in each municipality from 1987 – 1999. COAH projects this activity based on data related to attached housing and the income of municipal residents. These projections of secondary sources of demand and supply (demolitions, filtering, conversions and spontaneous rehabilitation), act to reduce the number of low- and moderate-income units a municipality must address in its housing element.

COAH's formula results in a 1987 – 1999 Matawan Borough housing obligation of 160 units. The 160 units may be divided into a rehabilitation component (indigenous need *minus* spontaneous rehabilitation) and a new construction component. Table HN-1 presents a summary

of Matawan's 1987 – 1999 low- and moderate-income housing obligation pursuant to COAH's formula.

**Table HN-1
Matawan Borough's 1987 – Housing Obligation**

Rehabilitation Component	
Indigenous Need	21
Spontaneous Rehabilitation	<u>- 2</u>
Rehabilitation Component	19 *
New Construction Component	
Reallocated Present Need	7
Prospective Need	74
Prior Cycle Prospective Need	<u>103</u>
Subtotal	184
Secondary Sources	
Demolition	8
Filtering	- 43
Conversions	<u>- 8</u>
Subtotal	- 43
Total New Construction Component	141
Precredited Need	160
Source: COAH	

* The Borough has a rehabilitation obligation of 19 units. It is suggested that the Borough enter into agreement with Monmouth County to administer a rehabilitation program. COAH's rules require the Borough to provide at least \$8,000 in hard costs and \$2,000 in administrative costs.

The Adjustment Process

COAH, pursuant to the Fair Housing Act, is responsible for allocating a share of a regional housing obligation to each municipality within the housing region. Whenever an agency tries to assign portions of a regional need (which by its nature, is very large) to individual municipalities with a limited amount of vacant land, there is likely to be a poor relationship between the housing need assigned to a municipality and the municipality's ability to address the housing need with its remaining vacant land.

Thus, COAH has developed a process that recognizes the limits of available land in the community. The process also recognizes that redevelopment takes place, and, as redevelopment

occurs, municipalities are expected to develop plans to capture a contribution toward addressing the remaining housing obligation.

The first part of the process involves determining the number of low- and moderate-income housing units that can realistically be expected to be constructed within the municipality, within the framework of sound land use planning. This calculation is called the Borough's realistic development potential.

The process of calculating the realistic development potential begins with an inventory of all vacant sites. In addition, COAH's rules state "the Council may determine that other sites, that are devoted to a specific use which involves relative low-density development would create an opportunity for affordable housing if inclusionary zoning was in place." This inventory is, in effect, an inventory of possibilities for low- and moderate-income housing. However, sites or portions of these sites may be eliminated due to:

- Environmental limitations;
- Deed restrictions that prevent development on the site;
- The need to provide a buffer from historic structures;
- Poor access;
- Plans to devote the site for recreation or open space; and/or
- Incompatible surrounding land uses.

Once a site, or a portion of a site, has been determined to be suitable for inclusion in the realistic development potential, it is necessary to determine an appropriate density for the site. The density assigned to the site should be consistent with sound planning principles after considering factors such as, but not limited to, the existing infrastructure, the accessibility of the site and the character of the surrounding area. COAH's rules require a municipality to balance the need for low- and moderate-income housing with the character of a given area. The rules establish a minimum density of six (6) units per acre for purposes of establishing the realistic development potential.

The acreage of the site, or that portion of the site, that has been determined suitable for low- and moderate-income housing, then multiplies the density. This product is the total development capacity of the site. For example, a ten-acre site might be suitable for residential development at

six (6) units per acre. Multiplying six (6) units per acre by 10 acres yields a site capacity of 60 units.

COAH's rules require that 20 percent of the site's capacity be reserved for low- and moderate-income households. This reservation is termed a "set-aside". With 20 percent set-aside, the hypothetical site used in the above example would yield 12 low- and moderate-income units. The sum of each site's capacity analysis equals the realistic development potential.

Matawan Borough has inventoried the land in the Borough pursuant to COAH's rules. Table HN-2 lists all vacant land parcels in the Borough. As shown, many of these sites are extremely small (less than one-half acre). In addition, it was found that many sites are irregularly shaped or inaccessible. Given the character of the surround area, it would be contrary to sound planning principals to assign densities on most of these sites that would be high enough to result in even one low- or moderate-income unit. Therefore, these sites have been eliminated from consideration. Many of the remaining sites have environmental constraints. Therefore, the Borough's vacant land analysis results in no realistic development potential.

TABLE HN-3 summarizes the analysis of all the Borough's vacant lots. Based on this analysis, the Borough has determined that it has a realistic development potential of zero. However, the Borough recognizes that it is responsible for developing a plan for its rehabilitation component and it has an obligation to develop a plan to capture a contribution toward affordable housing as redevelopment occurs.

**Table HN-2
Vacant Land Inventory**

Tax Map	Block / Lot	Ownership	Acres	Reason for Exclusion
2	1/3	Hiceron, Inc.	±0.204	Lot too small
2	2/2	Jayant Patel	±0.920	Lot too small
3	4/1	Boro of Matawan	±1.646	Wetlands
3	4/2	Boro of Matawan	±4.487	Wetlands
3	4/3	Boro of Matawan	±0.422	Flood pipe easement
3	4/4	Boro of Matawan	±1.280	Wetlands
4	6/2	Boro of Matawan	±0.212	Flood Plain
4	6/4	Cifelli Assoc. & Rinaldi Realty	±0.234	Lot too small
4	6/8	Boro of Matawan	±3.000	Flood Plain
4	6/9	Boro of Matawan	±3.590	Flood Plain
4	6/10	Boro of Matawan	±1.963	Flood Plain
10	6/16	Robert K. & Lynn E. Bryant	±0.344	Lot too small
10	6/23	Bell Realty, L.P.	±0.195	Lot too small
10	6/24	Boro of Matawan	±0.258	Flood Plain / Wetlands
10	6/25	Boro of Matawan	±0.500	Flood Plain
4	6/26	Ownership Unknown	±0.005	Flood Plain
5	8/4	Barththolomew & Carolyn Ruggiero	±0.172	Lot too small
5	9/14	Charles & Lorraine Bernath	±0.007	Lot too small
9	9/18	Gerald & Maryann Beyer	±0.275	Lot too small
9	9/20	Louis Tomasello, Jr.	±0.477	Lot too small
9	9/30	Boro of Matawan	±0.011	Lot too small
5	10/3	Robert E. Peterson	±4.000	Flood Plain / under Lake Matawan
5	10/6.01	Richard A. Riffel	±0.794	Flood Plain / under Lake Matawan
9	10/14	Boro of Matawan	±0.019	Flood Plain
9	10/15	Boro of Matawan	±0.122	Flood Plain / under Lake Matawan
5	10/20	Ownership Unknown	±1.400	Under Lake Matawan
5	10/22	Ownership Unknown	±3.000	Under Lake Matawan
6	11/30	Boro of Matawan	±0.115	Flood Plain
7	11/37	Ownership Unknown	±0.297	Under Lake Matawan
7	11/38	Ownership Unknown	±0.241	Under Lake Matawan
6	11/39	Ownership Unknown	±0.510	Under Lake Matawan
6	11/40	Ownership Unknown	±0.023	Under Lake Matawan
6	11/41	Ownership Unknown	±0.131	Under Lake Matawan
6	11/42	Ownership Unknown	±0.106	Under Lake Matawan
7	13/2	Sutton's Mill Developers, Inc.	±0.247	Lot too small
7	16/23	Ownership Unknown	±0.450	Flood Plain / under Lake Matawan
7	16/24	Ownership Unknown	±1.800	Under Lake Matawan
7	16/25	Ownership Unknown	±0.164	Under Lake Matawan
7	16/26	Ownership Unknown	±0.166	Under Lake Matawan
7	16/27	Ownership Unknown	±0.090	Under Lake Matawan
7	16/28	Ownership Unknown	±0.102	Under Lake Matawan
7	16/29	Ownership Unknown	±0.273	Under Lake Matawan
7	16/30	Ownership Unknown	±0.212	Under Lake Matawan
8	17/3	Boro of Matawan	±0.214	Monmouth County
8	18/3	County of Monmouth	±0.034	Flood Plain
8	18/5	John & Margaretha Ann Shafto	±0.924	Under Lake Matawan / Flood Plain
8	18/7	Ownership Unknown	±0.194	Under Lake Matawan
8	18/8	Ownership Unknown	±1.300	Under Lake Matawan
8	19/23	Ownership Unknown	±0.689	Under Lake Matawan
8	19/24	Ownership Unknown	±2.000	Under Lake Matawan
10	24/1	Boro of Matawan	±0.105	Flood Plain
10	24/14	Boro of Matawan	±1.200	Flood Plain / Wetlands
10	26/2	Fleet National Bank	±0.327	Parking lot

10	28/5	Ross W Maghan Agency	±0.164	Lot too small
10	26/5.01	Boro of Matawan	±0.128	Lot too small
10	28/6	Fleet National Bank	±0.112	Lot too small
10	28/7	Fleet National Bank	±0.116	Lot too small
10	29/5.01	shown on Tax Map (not shown on Tax List)	±0.008	Lot too small
10	29/11	Joseph T. & Rose A. Casey	±0.095	Lot too small
10	29/12	Boro of Matawan	±0.324	Portion in Flood Plain
10	29/12.01	shown on Tax Map (not shown on Tax List)	±0.006	Lot too small
14	29/13	Prospect Point Gardens, Inc.	±0.291	Portion in Flood Plain
14	29/15	Prospect Point Gardens, Inc.	±0.016	Lot too small
14	29/17	Boro of Matawan	±0.088	Lot too small
13	29/38	Boro of Matawan	±0.543	Flood Plain
13	29/40	Boro of Matawan	±0.247	Flood Plain
13	29/41	Boro of Matawan	±0.208	Flood Plain
13	29/51	William & Kathleen Cherry	±0.140	Lot too small
13	29/52	Boro of Matawan	±1.200	Flood Plain
15	29/54	Boro of Matawan	±0.530	Flood Plain
15	29/58	Ownership Unknown	±3.900	Under Lake Lefferts
13	29/59	Ownership Unknown	±0.321	Under Lake Lefferts
14	29/60	Prospect Point Gardens, Inc.	±4.100	Under Lake Lefferts
10	29/61	Ownership Unknown	±3.200	Under Lake Lefferts
10	29/62	shown on Tax Map (not shown on Tax List)	±0.087	Under Lake Lefferts
10	29/63	Ownership Unknown	±0.086	Under Lake Lefferts
10	29/64	Ownership Unknown	±0.040	Under Lake Lefferts
10	29/65	Ownership Unknown	±0.014	Under Lake Lefferts
10	29/66	Ownership Unknown	±0.081	Under Lake Lefferts
10	29/67	not shown on tax list	±0.165	Under Lake Lefferts
	29/68	not shown on tax map		
11	30/2	Gateway Landscaping	±0.258	Lot too small
11	31/4	Robert & Laura McKenzie	±0.075	Lot too small
11	32/4	Suttons Mill Developers, Inc.	±0.076	Lot too small
11	32/6	Marilyn Frazier	±0.151	Lot too small
11	32/13	Boro of Matawan	±0.230	Lot too small
11	32/14	Foreclosure	±0.127	Lot too small
11	33/8.02	Robert, Judy & Adragia Seeman	±0.154	Land lock
11	34/7	Boro of Matawan	±0.073	Lot too small
11	34/10	Andrew Scibor	±0.144	Lot too small
11	34/12	Patricia Fineran	±0.070	Lot too small
11	34/14	William Britton	±0.083	Lot too small
11	34/22.01	William J. Turby	±0.098	Lot too small
11	34/22.02	William J. Turby	±0.098	Lot too small
11	35/1	Boro of Matawan	±0.168	Lot too small
11	36/4	Synergy Federal Savings Bank	±0.146	Lot too small
12	39/1	Boro of Matawan	±1.760	Terhune Park
12	39/3	Lionetti Enterprises, L.L.C.	±0.677	Lot too small
12	39/4	Lionetti Enterprises, L.L.C.	±0.455	Lot too small
12	39/6	Lionetti Enterprises, L.L.C.	±0.454	Lot too small
12	39/8	Lionetti Enterprises, L.L.C.	±0.227	Lot too small
12	39/8.01	Lionetti Enterprises, L.L.C.	±0.158	Lot too small
12	39/8.02	Salvatore & Nancy Masiello	±0.111	Land lock
12	39/12	Lionetti Enterprises, L.L.C.	±0.110	Lot too small
13	41/11	Elaine Tsilimidos	±0.093	Lot too small
13	41/17	Giuseppe Scottodirosano	±0.108	Lot too small
13	42/13	Pete's Fishery	±0.041	Lot too small
14	44/3	JV Homebuilders Corp. (Shiyun Zhu)	±0.150	Lot too small
14	44/28	Boro of Matawan	±0.127	Lot too small
16	47/29	Ownership Unknown	±0.409	Under Lake Lefferts / Flood Plain
17	47.02/10	Lanny L.L. & Sheila R. Gorr	±0.064	Lot too small
17	47.02/17.02	Anthony Alario	±0.238	Land lock

17	47.02/17.03	Anthony Alario	±0.186	Land lock
17	47.02/24	Fred & Agnes Remer	±0.502	Lot too small
17	47.02/45.03	Robert Desilvestri, et al.	±0.427	Lot too small
17	49/21.01	Mullaney Tire Service, Inc.	±0.171	Lot too small
17	49/28	Ownership Unknown	±0.0004	Lot too small
17	49/29.01, 31.01, 31.02, 32.01, 32.03	shown on tax map (not shown on tax list)		Lot too small
17	50/8.01	Dario L. Parola	±0.102	Land lock
17	50/15	Rose Manzo	±0.380	Lot too small
17	50/14	Boro of Matawan	±0.037	Lot too small
17	51/2	Ted A. & Ann Osipowitz, et al.	±0.112	Lot too small
16	57/3.01	David C. & Christine Winters	±0.073	Lot too small
18	58/7	Boro of Matawan	±2.890	Slopes >15%
18	58/16.01	Boro of Matawan	±0.057	Lot too small
18	58/17	Ownership Unknown	±2.100	Under Lake Lefferts
19	62/2.09	Randy Barret, et al.	±0.367	Lot too small
21	63/1	Boro of Matawan	±4.580	Slopes >15%
21	63/2.01	Boro of Matawan	±18.40	Wetlands
20	64.01/2	Long Brook Assoc., L.L.C.	±1.500	Flood Plain
20	64.01/22	Joseph & Laurie Zalepka	±0.124	Lot too small
20	64.02/10.02	Stanley & Mary Sakowski	±0.439	Lot too small
20	65/5	Ralph E. & Judith A. Evans	±1.410	Land lock
20	65/6	Boro of Matawan	±4.680	Flood Plain
32	65.02/11	Boro of Matawan	±5.710	Flood Plain
33	65.02/38.01	Boro of Matawan	±0.248	Flood Plain
21	65.06/34	Howard Siegel	±1.750	Flood Plain
22	66/11.01	Toni, Citarella & David Duncan	±1.030	Lot too small
22	66.12/13.02	Harish Kumar	±0.561	Lot too small
22	70/3.08	Ownership Unknown	±0.011	Lot too small
23	71/19.01	Boro of Matawan	±0.870	Flood Plain
23	71/29	Frank & Laverne Della Pietro	±0.312	Land lock
23	71/30	Charles Fazio	±0.312	Land lock
23	71/31	Peter & Alma Koelsch	±0.117	Land lock
23	71/32	Peter & Alma Koelsch	±0.172	Land lock
23	71/33	Michael & Amy Lenehan	±0.409	Land lock
23	71/34	C. F. & Fedin Haseman, Jr.	±0.720	Flood Plain
23	71/56	John & Nancy R. Karg	±0.850	Land lock
23	72/7.01	Barbara A. Plock	±0.075	Lot too small
24	74/7	Vincent & Joan Ruta	±0.069	Lot too small
24	75/2	Adrien, James & Lachiewicz Scheuing	±0.205	Lot too small
24	79/1	Boro of Matawan	±0.331	Flood Plain / Land Lock
24	80/1	Boro of Matawan	±0.264	Flood Plain / Land Lock
24	80/4	Boro of Matawan	±0.275	Flood Plain
24	81/1	Frederick J. Becker	±0.384	Flood Plain
24	82/6.01	shown on Tax Map (not shown on Tax Listing)	±0.180	Under Lake Lefferts / Flood Plain
24	82/12	Dayna, John & Ramsay Butler	±0.068	Under Lake Lefferts / Flood Plain
24	82/16	Ownership Unknown	±2.170	Under Lake Lefferts
24	82/14	Boro of Matawan	±2.960	Flood Plain
24	85/4	John & Lois Rogers	±0.115	Lot too small
24	85/5	Boro of Matawan	±0.287	Lot too small
24	85/12	Boro of Matawan	±0.023	Lot too small
24	85/13	Boro of Matawan	±0.034	Lot too small
24	89/4	Anne E. Andrews	±0.115	Lot too small
24	89/4.01	Aloysius A. Jeckell III (not shown on Tax Map)	±0.172	
24	95/1.02	Gregory & Gloria Nazarian	±0.841	Lot too small
24	90/3	Boro of Matawan	±0.402	Lot too small
24	96/1.02	Boro of Matawan	±0.690	Wetlands
24	96/1.03	Kristina M. & Michael P. George IV	±0.810	Wetlands
24	97/1	Boro of Matawan	±0.086	Lot too small
24	97/3	Gregory & Gloria Nazarian	±0.034	Lot too small
24/38	99/1	Boro of Matawan	±10.240	Wetlands

24	99/1.01	Boro of Matawan	±2.000	Wetlands
25	100/22	Dayna, John & Ramsay Butler	±0.133	Lot too small
25	100/23	Dayna, John & Ramsay Butler	±0.121	Lot too small
25	100/34	Lochslea Club	±3.360	Wetlands
25	100/36	Ownership Unknown	±6.500	Under Lake Lefferts
25	103/11	John & Ann Sykora	±0.037	Lot too small
25	108/6	Bruce & Susan Quinn	±0.154	Lot too small
25	110/2.02	John J. Shannon	±0.279	Lot too small
25	110/4	34 Matawan Realty, Inc.	±1.770	Flood Plain
25	110/4.01	Ownership Unknown	±0.272	Flood Plain
25	110/7.01	William J & Rosemarie Clifton	±2.220	Lot too small
26	113/1.02	Stra Heuser, R&C&V&C&C	±0.556	Land lock
26	113/2.02	Randolph & Ruth Heuser	±1.000	Lot too small
26	113.01/1	Stepen Daly	±0.013	Lot too small
26	113.1/10	Boro of Matawan	±0.146	Lot too small
26	114/13	Rose Manzo/Manzo Contrac Co.	±0.188	Lot too small
26	115/12	Vincent T. & Karen Fierro	±0.156	Lot too small
26	115/13	Peter Fierro	±0.165	Lot too small
26	115/36	The Colony Club, Inc.	±0.134	Split lot/remainder in Old Bridge
26/38	115/37	Boro of Matawan	±10.74	Under Lake Lefferts
26/38	115/38	Boro of Matawan	±3.030	Under Lake Lefferts
27	119/31	JCP&L	±0.448	Lot too small
27	119/41	Atrium at Matawan Realty, L.L.	±1.850	Slopes > 15%
30	120/1	Hess Realty Corp.	±0.475	Slopes > 15%
30	120/11	Giselle Brown Realty, L.L.	±0.286	Lot too small
30	120/45.11	Boro of Matawan	±0.231	Land lock
30	120/47	JCP&L	±3.970	Flood Plain
30	120.01/21	Boro of Matawan	±0.522	Lot too small
29	121/7.02	Har-Beau Enterprises, LLC	±0.366	Lot too small
29	121/22	Boro of Matawan	±0.220	Lot too small
29	121/26.08	Boro of Matawan	±0.609	Lot too small
29	121/29.01	James C. & Kathleen Day, Jr.	±0.812	Lot too small
29	121/39	Ownership Unknown	±0.100	Lot too small
29	122/10	Bruno G. Salvatore	±0.124	Lot too small
29	122/19	Harold G. Smith	±0.330	Lot too small
29	122.02/1.02	Robert J. & Gitana Fiorino	±0.126	Lot too small
31	123/14.01	John P. Chester	±1.960	Flood Plain
31	123/30	Boro of Matawan	±5.314	Flood Plain
31	123/31	Boro of Matawan	±1.513	Flood Plain
31	123/46	not shown on Tax Map		
31	123/72	Boro of Matawan	±0.350	Lot too small
31	123/79	Boro of Matawan	±0.030	Flood Plain
31	123.02/25	Boro of Matawan	±2.570	Freneau Avenue Park

Total Vacant Lots – 218 Lots Total Vacant Lot Acreage – ±194.735 acres

Source: Tax List Data; Tax Map – Borough of Matawan, August 2002

**Table HN-3
Vacant Lot Summary**

Lot Condition	Number of Lots	Acreage
Lots under Lakes Lefferts/Matawan	52	±17.553
Flood Plain	40	±47.665
Wetlands	9	±42.913
Slopes > 15%	4	±9.795
Land Lock	14	±5.160
Title/Easement	3	±0.883
Park/Open Space	2	±4.330
County Ownership	1	±0.2114
Lots too small to accommodate 5 housing units	95	±66.242
Total:	218	±194.735

The Rehabilitation Component

The Borough plans to contract with Monmouth County to administer its 19 unit rehabilitation component. It will bond, if necessary, to fund the program. If the County does not have adequate marketing procedures in place, Matawan will market the program through a variety of techniques. The Borough will place a box advertisement with information about the rehabilitation program, in a local newspaper twice a year until the rehabilitation obligation is satisfied. Information about the program will be included in municipal tax bills and in municipal publications. The Borough will also cooperate with Monmouth County in distributing posters and flyers about the County program.

Ongoing Efforts to Produce Affordable Housing

The Borough must adopt a plan to capture a contribution for affordable housing as development or redevelopment occurs. COAH's rules create options, including:

- Zoning amendments to permit accessory apartments;
- Overlay zoning on developed parcels that permit a redevelopment option that would incorporate low- and moderate-income housing within market development; and
- The imposition of development fees.

The Borough shall adopt a development fee ordinance. This ordinance will ensure that all new construction that does not include affordable housing will make a contribution toward the Borough's Affordable Housing Trust Fund. The Borough intends to use development fees to promote its rehabilitation efforts with the County.

The Borough is in the process of implementing a plan to redevelop an area adjacent to the train station, along its border with Aberdeen Township. The Borough will attempt to negotiate a set-aside of affordable housing as part of the redevelopment plan.

LAND USE PLAN

The Borough's 2003 Land Use Plan continues the various land use categories contained in the 1978 and 1989 plans. The 2003 plan recognizes the existing land use patterns in the Borough, with single-family residential development the primary land use category. The Land Use Plan for the Borough is provided on PLATE 2.

Commercial areas are located along portions of State Route 34, Freneau Avenue (Route 79), and Main Street, including the area surrounding the Railroad Station and associated parking areas. Multi-family residential areas correspond to existing multi-family residential uses in the Borough. Public and quasi-public land use designations also recognize existing facilities. The downtown preservation district is continued in the plan, with slight revisions in accordance with the recommendations of the Planning Board in 1994.

The Plan also incorporates another revision suggested by the Board in 1994. This includes an adjustment of the single-family and commercial designations between Main and Broad Streets on the eastern side of Little Street. Additionally, the Plan has been revised to recognize the recently approved assisted living facility on Route 79 by designating the tract as multi-family residential, and also the recently approved shopping center development adjacent to the community center on the south side of Broad Street.

The Redevelopment Plan for the designated redevelopment area in the vicinity of the Matawan Train Station as recently adopted by the Matawan Borough Planning Board proposes a mix of high quality residential, commercial, office, and hotel development. This redevelopment area is delineated on the Land Use Plan. The Redevelopment Plan also proposes conservation and preservation of open space and environmentally sensitive lands along the Matawan Creek. The Redevelopment Plan for Matawan Borough also complements redevelopment proposed in Aberdeen Township, adjacent to the Matawan Train Station. The Redevelopment Plan for Matawan is provided in the Appendix to this Master Plan Update.

The Land Use Plan continues to delineate various conservation areas including flood plains and wetlands associated with Lake Lefferts, Matawan Creek, Lake Matawan, Gravelly Brook, and their tributaries. These designated conservation areas provide a general location of areas of special environmental concern and should not be substituted for a site-specific analysis and delineation during the development review process. Conservation easements should be required whenever development activity is proposed on impacted properties.

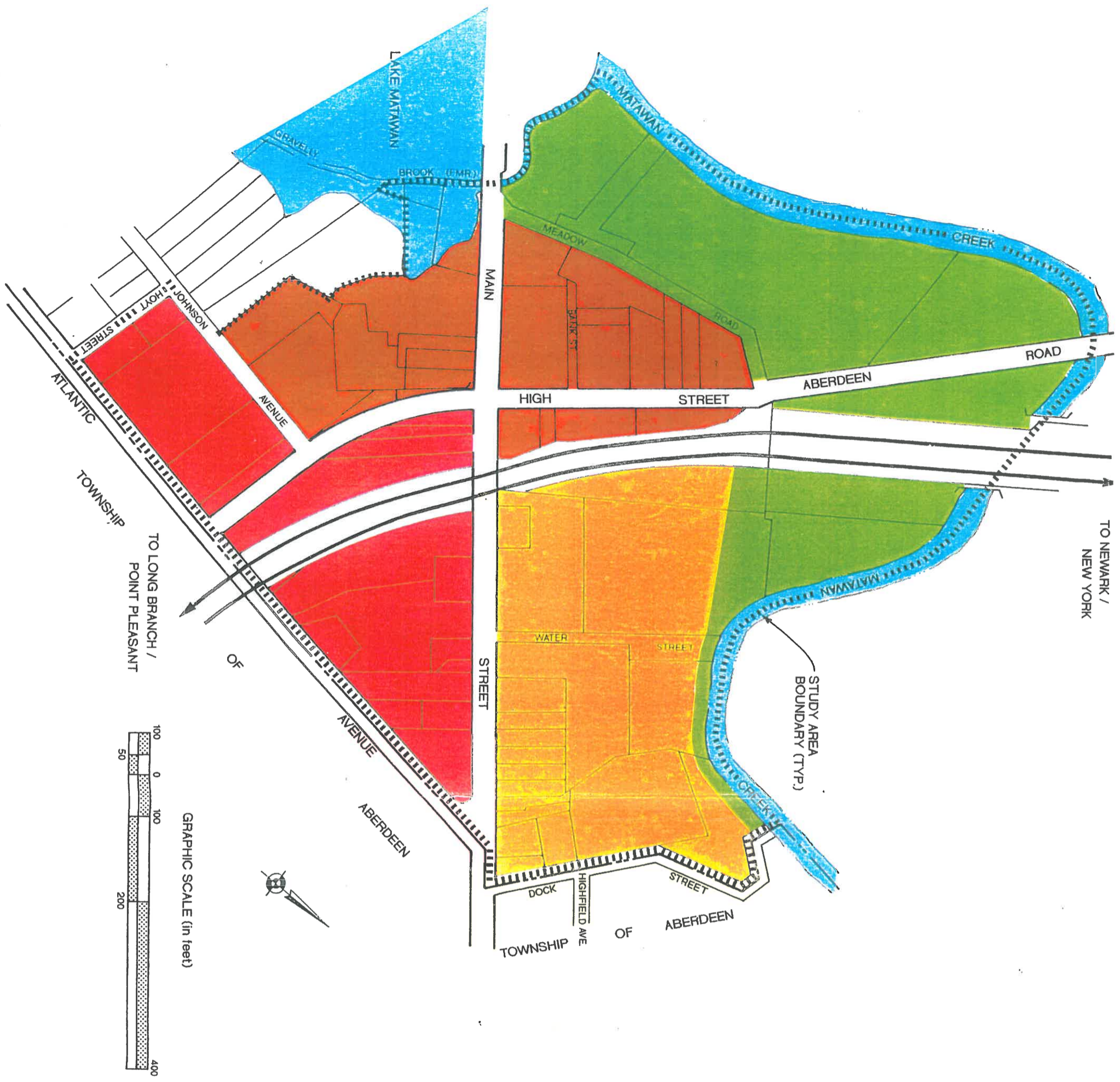
The list of historic sites prepared by the Matawan Borough Historic Sites Commission is adopted by reference as an integral part of the Land Use Plan Element. The purpose of this list is to provide an expansion of properties beyond the Downtown Preservation District where architectural review can occur before any exterior changes are made to

affected sites. The governing body should adopt appropriate ordinance regulations to assure the implementation of this historic preservation goal.

The property known as Block 120, Lot 5.01 consisting of approximately twenty-three and seven tenths (23.7) acres, is the subject of redevelopment proposal to construct 157 multifamily dwelling units, including a set aside of affordable housing rental units, on approximately one-half of the tract with the remaining portion of the tract to remain as open space. The site is currently vacant and was the site of nonconforming industrial building which served the Sloan Products Company. The tract fronts on State Route 79 between Old Mill Road and Vermont Court.

This portion of the Route 79 corridor is characterized by a mix of land uses. These uses include professional offices, commercial retail and service establishments, restaurants and multifamily assisted living residences including a health care facility. The mixed use character of this area had presented an opportunity for the provision of the proposed multi-family development as a logical transitional use between the relatively high density land use activities and the low density single-family dwellings to the north and south.

The Land Use Plan delineates the developable portion of the tract as "Multi-Family/Preservation" and the proposed gross density of development would be approximately seven (7.0) units per acre. It is recommended that a new zone district be created to provide for approximately seven (7) three-story buildings and one (1) two-story building, in accordance with the conceptual plan. Such conceptual plan is incorporated into a certain Settlement Agreement between American Properties at Matawan, L.L.C., the Borough of Matawan and the Unified Planning and Zoning Board of the Borough of Matawan settling affordable housing litigation in the Superior Court of New Jersey, Monmouth County, New Jersey captioned American Properties at Matawan, L.L.C. v. The Borough of Matawan and the Planning Board of the Borough of Matawan, Docket No. L-5704-03.



LEGEND:

- OFFICE & RETAIL w/PARKING
- HOTEL / OFFICE & RETAIL w/PARKING
- MID-RISE APARTMENTS w/PARKING
- OPEN SPACE / RECREATION
- STUDY AREA BOUNDARY
- COMMUTER RAIL LINE

**RAILROAD IMPROVEMENT
DISTRICT
REDEVELOPMENT AREA PLAN**











EXHIBIT 2

LAND USE PLAN

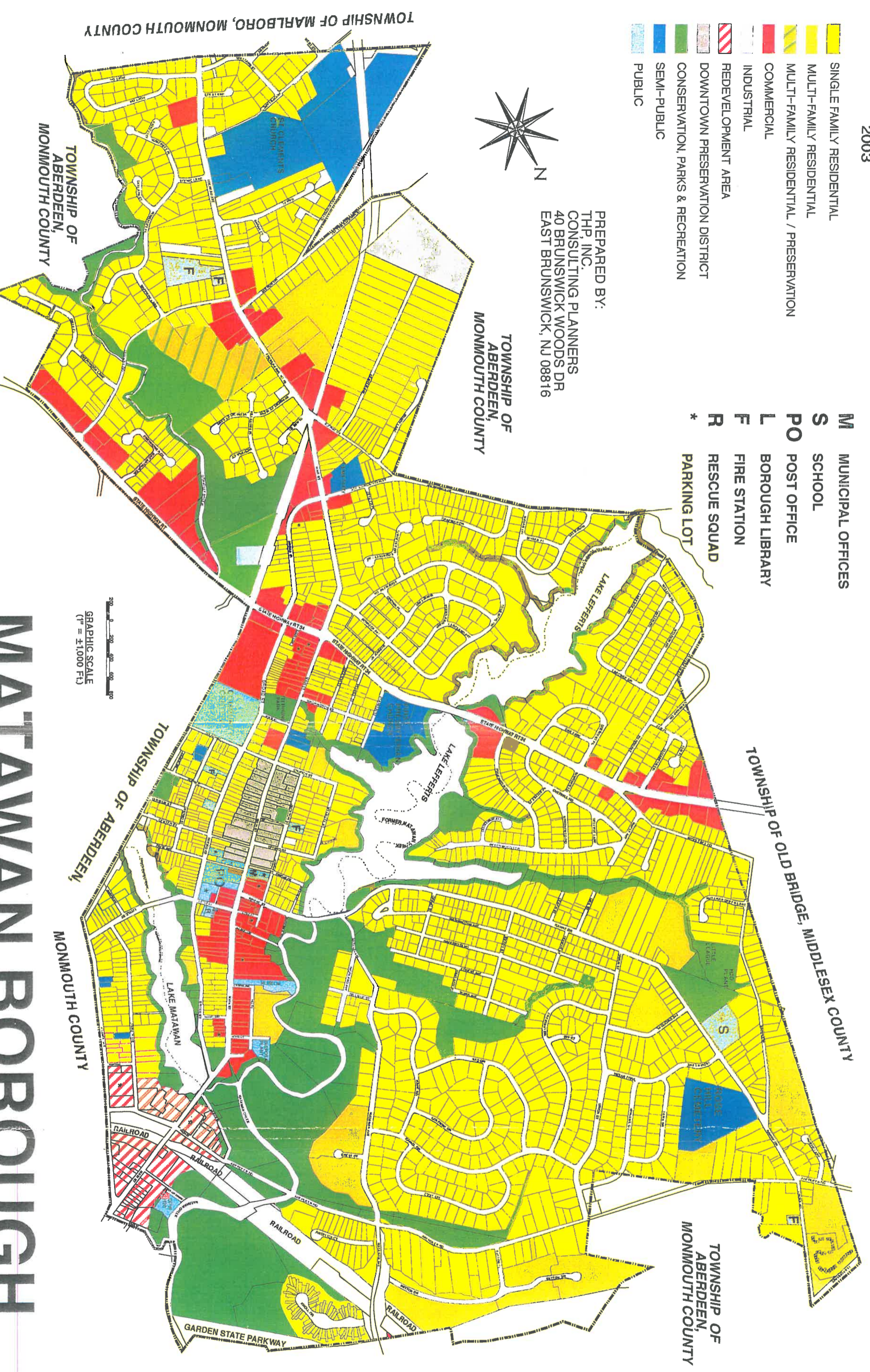
2003

PUBLIC FACILITIES

- M** MUNICIPAL OFFICES
- S** SCHOOL
- PO** POST OFFICE
- L** BOROUGH LIBRARY
- F** FIRE STATION
- R** RESCUE SQUAD
- *** PARKING LOT

-  SINGLE FAMILY RESIDENTIAL
-  MULTI-FAMILY RESIDENTIAL
-  MULTI-FAMILY RESIDENTIAL / PRESERVATION
-  COMMERCIAL
-  INDUSTRIAL
-  REDEVELOPMENT AREA
-  DOWNTOWN PRESERVATION DISTRICT
-  CONSERVATION, PARKS & RECREATION
-  SEMI-PUBLIC
-  PUBLIC

PREPARED BY:
 THP, INC.
 CONSULTING PLANNERS
 40 BRUNSWICK WOODS DR
 EAST BRUNSWICK, NJ 08816



GRAPHIC SCALE
 (1" = ±1,000 FT.)

MATAWAN BOROUGH

MONMOUTH COUNTY, NEW JERSEY

LAND USE PLAN

The Borough's 2003 Land Use Plan continues the various land use categories contained in the 1978 and 1989 plans. The 2003 plan recognizes the existing land use patterns in the Borough, with single-family residential development the primary land use category. The Land Use Plan for the Borough is provided on PLATE 2.

Commercial areas are located along portions of State Route 34, Freneau Avenue (Route 79), and Main Street, including the area surrounding the Railroad Station and associated parking areas. Multi-family residential areas correspond to existing multi-family residential uses in the Borough. Public and quasi-public land use designations also recognize existing facilities. The downtown preservation district is continued in the plan, with slight revisions in accordance with the recommendations of the Planning Board in 1994.

The Plan also incorporates another revision suggested by the Board in 1994. This includes an adjustment of the single-family and commercial designations between Main and Broad Streets on the eastern side of Little Street. Additionally, the Plan has been revised to recognize the recently approved assisted living facility on Route 79 by designating the tract as multi-family residential, and also the recently approved shopping center development adjacent to the community center on the south side of Broad Street.

The Redevelopment Plan for the designated redevelopment area in the vicinity of the Matawan Train Station as recently adopted by the Matawan Borough Planning Board proposes a mix of high quality residential, commercial, office, and hotel development. This redevelopment area is delineated on the Land Use Plan. The Redevelopment Plan also proposes conservation and preservation of open space areas and environmentally sensitive lands along the Matawan Creek. The Redevelopment Plan for Matawan Borough also complements redevelopment proposed in Aberdeen Township, adjacent to the Matawan Train Station. The Redevelopment Plan for Matawan is provided in the Appendix to this Master Plan Update.

The Land Use Plan continues to delineate various conservation areas including flood plains and wetlands associated with Lake Lefferts, Matawan Creek, Lake Matawan, Gravelly Brook, and

MUNICIPAL STORMWATER MANAGEMENT PLAN MASTER PLAN ELEMENT

BOROUGH OF MATAWAN
MONMOUTH COUNTY, NEW JERSEY

Adopted: March 7, 2005

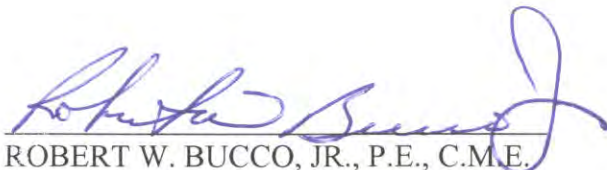
Amended: April 16, 2007

Memorialized: October 3, 2005

PREPARED FOR

BOROUGH OF MATAWAN PLANNING BOARD

PREPARED BY:



ROBERT W. BUCCO, JR., P.E., C.M.E.
CONSULTING ENGINEER
Licensed Professional Engineer No. GE 38132



STAN SLACHETKA, A.I.C.P., P.P.
ASSISTANT DIVISION MANAGER
Licensed Professional Planner No. LI 03508



11 Tindall Road
Middletown, New Jersey 07748
(732) 671-6400

FEBRUARY 2005

MUNICIPAL STORMWATER MANAGEMENT PLAN MASTER PLAN ELEMENT

BOROUGH OF MATAWAN
MONMOUTH COUNTY, NEW JERSEY

Adopted: March 7, 2005

Amended: April 16, 2007

Memorialized: October 3, 2005

PREPARED FOR
BOROUGH OF MATAWAN PLANNING BOARD

PREPARED BY:



ROBERT W. BUCCO, JR., P.E., C.M.E.
CONSULTING ENGINEER
Licensed Professional Engineer No. GE 38132



STAN SLACHETKA, A.I.C.P., P.P.
ASSISTANT DIVISION MANAGER
Licensed Professional Planner No. LI 03508



11 Tindall Road
Middletown, New Jersey 07748
(732) 671-6400

FEBRUARY 2005

MEMBERS OF THE 2007 UNIFIED PLANNING/ZONING BOARD OF ADJUSTMENTS

Mary Aufseeser, Mayor
Paul Buccellato, Councilman
Ken Cassidy, Chairman
Kevin Mendes – Vice Chairman

Phil Olini
Joseph Mullaney
Kevin Mendes
Esther Rinear, Secretary
James Duffy
Ken Cassidy
Jeanne DeYoung
James E. Shea

Robert Bunyon, Alternate I
Rochelle Malanga, Alternate II
Jeffrey Sponder, Alternate III
Angelo Gallego, Jr., Alternate IV

Jean B. Montfort, R.M.C., Borough Clerk
Michael A. Irene Jr., Esq., Board Attorney
Bob White, Board Engineer
Joe Layton, Municipal Planner

T&M Associates, Stormwater Management Consultant

**Resolution of the Unified Planning & Zoning Board of Adjustment
of the Borough of Matawan**

**AMENDMENT OF MASTER PLAN
REGARDING MUNICIPAL STORMWATER MANAGEMENT PLAN ELEMENT**

WHEREAS, as required by the Municipal Stormwater Regulations (N.J.A.C. 7:14A-25), the Borough of Matawan has developed a Municipal Stormwater Management Plan ("MSWMP") to set forth the Borough's approach to addressing the impacts resulting from stormwater related issues associated with future development and land use changes;

WHEREAS, the Municipal Stormwater Management Plan, dated February 24, 2005, revised August 15, 2005, has been prepared by T&M Associates and submitted to the Unified Planning & Zoning Board ("Board");

WHEREAS, the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., authorizes the Board to amend the Borough's Master Plan from time to time as may be necessary, appropriate, or otherwise required by applicable law;

WHEREAS, the Board conducted public hearings on March 7, 2005 and September 7, 2005 with regard to this matter, upon due and proper notice as required by law, at which hearing interested parties were afforded an opportunity to comment regarding this matter, and at which hearing the Board considered the referenced Municipal Stormwater Management Plan; and

WHEREAS, at the conclusion of the March 7, 2005 public hearing, the Board voted to adopt the Municipal Stormwater Management Plan, but subsequent thereto, the Board was advised by its professionals that certain technical amendments/revisions were proposed to be made thereto (particularly including revisions/amendments to the "Developer Mitigation Plan Requirements" section of the Plan); and whereas, the Municipal Stormwater Management Plan was thereafter revised by T&M Associates, and presented by Rick Donohoe, P.E. of T&M Associates to the Board for review and comment at the Board's September 7, 2005 public hearing, and at the conclusion of said public hearing, the Board voted to adopt the Municipal Stormwater Management Plan as revised and to amend the Borough's Master Plan by incorporating therein the Municipal Stormwater Management Plan so adopted as a Master Plan Element;

NOW THEREFORE BE IT RESOLVED by the Unified Planning & Zoning Board of Adjustment of the Borough of Matawan, that it makes the following findings and conclusions with regard to this matter:

1. The Municipal Stormwater Management Plan ("MSWMP") addresses groundwater recharge, stormwater quantity, and stormwater quality impacts through the incorporation of stormwater design and performance standards for new development and redevelopment projects that disturb one or more acres of land or increase the impervious cover by more than one-quarter acre. The standards are intended to minimize negative or adverse impacts of stormwater runoff

such as decreased water quality, increased water quantity and reduction of groundwater recharge that provides base flow to receiving bodies of water. In addition to minimizing these impacts, the Borough's MSWMP provides long term operation and maintenance measures for existing and proposed stormwater management facilities.

2. The MSWMP provides recommendations for ordinance modifications in order to expedite the implementation of stormwater management strategies. The MSWMP also includes mitigation strategies to permit the Borough to grant variances or exemptions from proposed design and performance standards set forth by the Municipal Stormwater Regulations (N.J.A.C. 7:8-5.5).

3. The goals and objectives of the MSWMP are to:

- (a) Reduce flood damage, including damage to life and property;
- (b) Minimize, to the extent practical, any increase in stormwater runoff from any new development;
- (c) Reduce soil erosion from any development or construction project;
- (d) Encourage the adequacy of existing and proposed culverts and bridges, and other in-stream structures;
- (e) Maintain groundwater recharge;
- (f) Prevent, to the greatest extent feasible, an increase in nonpoint pollution;
- (g) Maintain the integrity of stream channels for their biological function, as well as for drainage;
- (h) Minimize pollutants in stormwater runoff from new and existing development to restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the state, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial, and other uses of water;
- (i) Protect public safety through the proper design and operation of stormwater basins;
- (j) Increase public awareness of stormwater management through public education.

4. The MSWMP interfaces with a number of the goals of the Borough's Master Plan, including, the goals and objectives to: (a) achieve a realistic approach for maintaining the existing residential and commercial character of the Borough, while providing for quality development of the few remaining tracts within the Borough; (b) preserve environmentally sensitive lands such as flood plain areas and along Matawan Creek and to protect established and future development from the negative effects of flooding, erosion, and lack of conservation; and

(c) insure the harmonious inter-relationships of the various land use activities throughout the Borough and with neighboring municipalities.

5. To achieve these goals, the MSWMP outlines specific stormwater design and performance standards for new development and proposes stormwater management controls for addressing impacts from existing developments. Preventive and corrective maintenance strategies are also included to ensure the long-term effectiveness of stormwater management facilities and the MSWMP outlines safety standards for stormwater infrastructure to be implemented to protect public safety.

6. The MSWMP as revised August 15, 2005 incorporates therein certain technical revisions/amendments (particularly including revisions/amendments to the "Developer Mitigation Plan Requirements" section of the Plan) as recommended by the Board's professional consultants.

NOW THEREFORE BE IT FURTHER RESOLVED by the Unified Planning & Zoning Board of Adjustment of the Borough of Matawan, that it adopts the above-referenced Municipal Stormwater Management Plan as revised and hereby amends the Borough's Master Plan by incorporating therein the Municipal Stormwater Management Plan as revised as a Master Plan Element.

ROLL CALL VOTE

The above resolution was moved by Esther Rinear, seconded by Robert Montfort, and on a roll call, the following vote was recorded:

THOSE IN FAVOR: Councilman Buccellato, J. DeYoung, J. Daffy, E. Rinear
R. Montfort, Kevin Dolan, T. Fitzsimmons.

THOSE OPPOSED:

THOSE ABSTAINING: K. Cassidy, Jos. Roselli

THOSE ABSENT: Kevin Groody

CERTIFICATION

The undersigned Recording Secretary of the Unified Planning & Zoning Board of Adjustment of the Borough of Matawan, do hereby certify that the foregoing is a true copy of a Resolution duly adopted by the Board at its meeting held on October 3, 2005.

DATED:

Pamela J. Pennipede
Recording Secretary

TABLE OF CONTENTS

INTRODUCTION	1
Goals and Objectives	1
STORMWATER DISCUSSION	4
Hydrologic Cycle	4
Impacts of Stormwater	5
BACKGROUND	7
Demographics and Land Use	7
Existing Natural Resource Measures	10
Waterways	14
Water Quality	14
Water Quantity	19
Groundwater Recharge	19
DESIGN AND PERFORMANCE STANDARDS	24
PLAN CONSISTENCY	26
Regional Stormwater Management Plans	26
Total Maximum Daily Loads	26
Residential Site Improvement Standards (RSIS)	26
Soil Conservation	26
Monmouth County Growth Management Guide	27
State Development or Redevelopment Plan (SDRP)	28
STORMWATER MANAGEMENT STRATEGIES	29
Nonstructural Strategies	31
Structural Stormwater Management	33
LAND USE/ BUILD-OUT ANALYSIS	38
MITIGATION PLAN	39
Mitigation Project Criteria	39
Developer Mitigation Plan Requirements	40
Water Quality	42
Water Quantity	42
Groundwater Recharge	42
RECOMMENDATIONS	43
REFERENCES	46

LIST OF TABLES

TABLE 1 : POPULATION TRENDS 7
TABLE 2: GENERAL HOUSING CHARACTERISTICS 9
TABLE 3: 2004 BOROUGH OF MATAWAN - INTEGRATED LIST OF WATER BODIES..... 18
TABLE 4: NRCS 24 HOUR DESIGN STORM RAINFALL DEPTH (INCHES) – SEPTEMBER 2004 27

LIST OF FIGURES

FIGURE 1: THE HYDROLOGIC CYCLE..... 4
FIGURE 2: TOPOGRAPHIC MAP 8
FIGURE 3: BOROUGH ZONING MAP 11
FIGURE 4: EXISTING LAND USE MAP..... 12
FIGURE 5: ENVIRONMENTALLY CONSTRAINED LANDS..... 13
FIGURE 6: WATERWAYS 15
FIGURE 7: HYDROLOGIC UNITS (HUC-14s) 16
FIGURE 8: FLOOD AREAS MAP 20
FIGURE 9: GROUNDWATER RECHARGE AREA..... 22
FIGURE 10: WELLHEAD PROTECTION AREAS 23

INTRODUCTION

As required by the Municipal Stormwater Regulations (N.J.A.C. 7:14A-25), the Borough of Matawan has developed this Municipal Stormwater Management Plan (MSWMP) to outline its approach for addressing the impacts resulting from stormwater related issues associated with future development and land use changes. The MSWMP addresses groundwater recharge, stormwater quantity, and stormwater quality impacts through the incorporation of stormwater design and performance standards for new development and redevelopment projects that disturb one or more acres of land. The standards are intended to minimize negative or adverse impacts of stormwater runoff such as decreased water quality, increased water quantity and reduction of groundwater recharge that provides base flow to receiving bodies of water. In addition to minimizing these impacts, the Borough MSWMP provides long term operation and maintenance measures for existing and proposed stormwater management facilities.

The MSWMP provides recommendations for ordinance modifications in order to expedite the implementation of stormwater management strategies. The MSWMP also includes mitigation strategies to permit the Borough to grant variances or exemptions from proposed design and performance standards set forth by the Municipal Stormwater Regulations (N.J.A.C. 7:8-5.5).

It should also be noted that though this MSWMP is specific to addressing stormwater related impacts within the Borough, contributions of stormwater runoff are not limited by municipal boundaries rather stormwater contributions are limited by the topography of the watershed.

GOALS AND OBJECTIVES

The goals of this MSWMP are to:

1. Reduce flood damage, including damage to life and property;
2. Minimize, to the extent practical, any increase in stormwater runoff from any new development;
3. Reduce soil erosion from any development or construction project;
4. Encourage the adequacy of existing and proposed culverts and bridges, and other in-

- stream structures;
5. Maintain groundwater recharge;
 6. Prevent, to the greatest extent feasible, an increase in nonpoint pollution;
 7. Maintain the integrity of stream channels for their biological function, as well as for drainage;
 8. Minimize pollutants in stormwater runoff from new and existing development to restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the state, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial, and other uses of water;
 9. Protect public safety through the proper design and operation of stormwater basins.
 10. Increase public awareness of stormwater management through public education.

Within the Borough's *Master Plan*, the following two goals were described:

11. To achieve a realistic approach for maintaining the existing residential and commercial character, while providing for quality development of the few remaining tracts within the Borough.
12. To preserve environmentally sensitive lands such as flood plain areas and along Matawan Creek and protect established and future development from the negative effects of flooding, erosion, and lack of conservation.
13. To insure the harmonious inter-relationships of the various land use activities throughout the Borough and with neighboring municipalities.

To achieve these goals, the MSWMP outlines specific stormwater design and performance standards for new development and proposes stormwater management controls for addressing impacts from existing developments. Preventive and corrective maintenance strategies are also included to ensure the long-term effectiveness of stormwater management facilities and the MSWMP outlines safety standards for stormwater infrastructure to be implemented to protect public safety. In addition to the MSWMP, the Borough has established a stormwater management program through the implementation of its Stormwater Pollution Prevention Plan

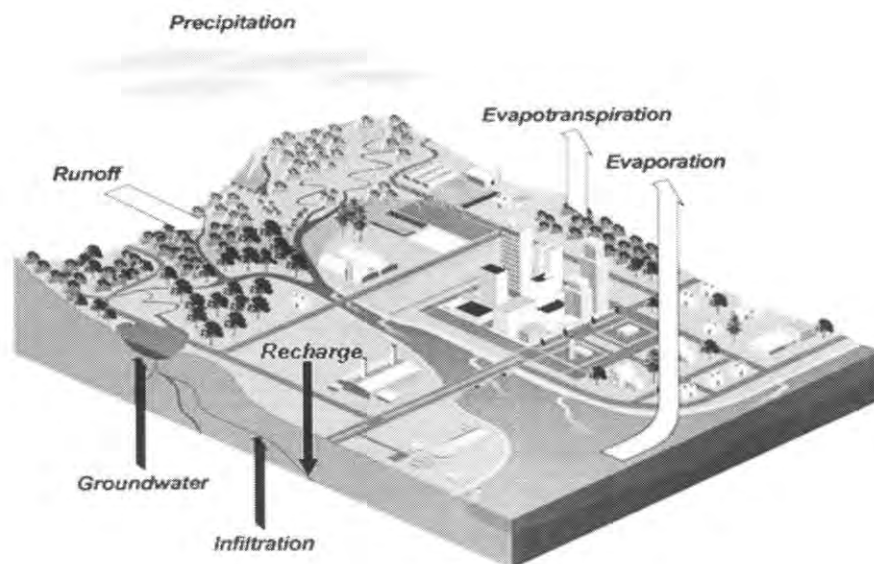
(SPPP). This document incorporates existing and new programs to improve stormwater management, promote public education, maximize solids and floatables control, and maintain stormwater facility maintenance. The SPPP and stormwater management programs will allow the Borough to address stormwater management from existing development.

STORMWATER DISCUSSION

HYDROLOGIC CYCLE

The hydrologic cycle, or water cycle (Figure 1), is the continuous circulation of water between the ocean, atmosphere, and land. The driving force of this natural cycle is the sun. Water, stored in oceans, depressions, streams, rivers, waterbodies, vegetation and even land surface, continuously evaporates due to solar energy. This water vapor then condenses in the atmosphere to form clouds and fog. After water condenses, it precipitates, usually in the form of rain or snow, onto land surfaces and waterbodies. Precipitation falling on land surfaces is often intercepted by vegetation. Plants and trees transpire water vapor back into the atmosphere, as well as aid in the infiltration of water into the soil. The vaporization of water through transpiration and evaporation is called evapo-transpiration. Infiltrated water percolates through the soil as groundwater, while surface water flows overland. Groundwater and surface water flow to major waterbodies and eventually flows to the Earth's seas and oceans. This constant process of evapo-transpiration, condensation, precipitation, and infiltration comprises the hydrologic cycle.

Figure 1: The Hydrologic Cycle



Source: <http://www.creativille.org/kernriver/watershed.htm>

IMPACTS OF STORMWATER

Prior to any land development, native vegetation often intercepts precipitation directly or absorbs infiltrated runoff into their roots. Development often replaces native vegetation with lawns or impervious cover, such as pavement or structures, thereby reducing the amount of evapotranspiration and infiltration. Regrading and clearing of lots disturbs the natural topography of rises and depressions that can naturally capture rainwater and allow for infiltration and evaporation. Construction activities often compact soil, thereby decreasing its permeability or ability to infiltrate stormwater. Development activities also generally increase the volume of stormwater runoff from a given site.

Connected impervious surfaces and storm sewers (such as roof gutters emptying into paved parking lots that drain into a storm sewer) allow the runoff to be transported downstream more rapidly than natural areas. This shortens travel time and increases the rainfall-runoff response of the drainage area, causing downstream waterways to peak higher and quicker than natural areas, a situation that can cause or exacerbate downstream flooding, erosion, and sedimentation in stream channels. Furthermore, connected impervious surfaces do not allow pollutants to be filtered, or for infiltration and ground water recharge to occur prior to reaching the receiving waters. Increase volume combined with reduced base flows, results in a greater fluctuation between normal and storm flows allowing for greater channel erosion. Additionally, reduced base flows, increased fluctuation, and soil erosion can affect the downstream hydrology of the watershed, impacting the ecological integrity of the watershed.

Water quantity impacts combined with land development often adversely impact stormwater quality. Impervious surfaces collect pollutants from the atmosphere, animal wastes, fertilizers and pesticides, as well as pollutants from motor vehicle usage. Pollutants such as hydrocarbons, metals, suspended solids, pathogens, and organic and nitrogen containing compounds, collect and concentrate on impervious surfaces. During storm events, these pollutants are washed directly into municipal storm sewer systems. In addition to chemical and biological pollution, thermal pollution can occur from water collected or stored on impervious surfaces or in heated stormwater impoundments by the sun. Thermal pollution can affect aquatic habitats, adversely

impacting cold water fish. Removal of shade trees and stabilizing vegetation from stream banks also contributes to thermal pollution.

Historically, as towns and cities develop from rural agricultural communities, the landscape is altered in dramatic ways. Both residential and nonresidential development on former agricultural fields and pastures can have a great impact on the hydrologic cycle for the specific site. Localized impacts to the hydrologic cycle will ultimately impact the hydrologic cycle of the entire watershed encompassing that development site.

Proper stormwater management will help mitigate the negative impact of land development and its effects on stormwater. This MSWMP outlines the Borough's plan to improve stormwater quality, decrease stormwater quantity, and increase groundwater recharge. By managing stormwater, the Borough will improve the quality of aquatic ecosystems and restore some of the natural balance to the environment.

BACKGROUND

The Borough of Matawan encompasses 2.4 square miles of Monmouth County, New Jersey. Included in that 2.4 square miles are 0.12 square miles of water area and 2.28 square miles of land area (2000 U.S. Census). The Borough is primarily single-family residential with some areas of commercial development. The Borough is bounded to the north, east, and south by Aberdeen Township and to the south by Marlboro Township. To the west, the Borough is bounded by Old Bridge Township in Middlesex County. Figure 2 delineates the Borough's boundary on United States Geological Survey (USGS) quadrangle maps.

DEMOGRAPHICS AND LAND USE

The population of Matawan has fluctuated minimally in the past 30 years, from 9,136 in 1970 to 8,910 people in the year 2000 (See Table 1 - Population Trends). With these population changes, came a slow increase of development from 2,882 housing units in 1970 to 3,640 housing units in 2000. While a slow increase in housing has occurred over the long term, the number of housing units actually decreased between 1990 and 2000. This indicates a possible decrease in impervious coverage in recent years. According to the January 2003 *Borough of Matawan Housing Element and Land Use Plan 2003*, Monmouth County does not project much growth for the Borough's population. The 2010 population projection is 9,300.

Table 1 : Population Trends

Year	Matawan		Monmouth County		New Jersey	
	Population	% Change	Population	% Change	Population	% Change
1970	9,136	--	461,849	--	6,066,782	--
1980	8,837	- 3.3	503, 173	8.9	7,364,823	18.2
1990	9,270	4.7	553,124	9.9	7,730,188	5.0
2000	8,910	- 3.9	615,301	11.2	8,414,350	8.9
2010	9,300	4.4				

Source: 1990, 2000 US Census, Re-examination Report: Housing and Land Use Elements of Matawan Master Plan



Figure 2: Topographic Map
Borough of Matawan
Monmouth County, New Jersey



Source: U.S.G.S. Keyport (1970) and South Amboy (1981), NJ Quadrangle Maps

Table 2: General Housing Characteristics

	1990		2000		Change
	Number	Percent	Number	Percent	Number
OCCUPANCY STATUS					
Total Housing Units	3,730	100	3,640	100	-90
Occupied Housing Units	3,523	94.5	3,531	97.0	-199
Vacant Housing Units	207	5.5	109	3.0	- 98
Tenure					
Occupied Housing Units	3,730	100	3,531	100	-199
Owner- Occupied Housing Units	2,117	60.0	2,067	58.5	-50
Renter- Occupied Housing Units	1,406	40.0	1,464	41.5	60
Vacancy Status					
Vacant Housing Units	207	100	109	100	- 98
Population					
	9,270	100	8,910	100	- 360
Households					
	3,523	100	3,531	100	8
Family Household	2,513	71.3	2,375	66.7	- 138
1 Person Household	782	22.2	904	25.6	122
Persons/ Household	2.6		2.52		- 0.08

Source: 1990, 2000 US Census

Matawan has approximately 194 acres of vacant land (2003 *Vacant Land Inventory*) of which approximately 71 acres are developable and not environmentally constrained. Environmentally constrained lands are those where development is limited or denied based on environmental factors and may include lands located in freshwater wetlands, within the 100 year flood hazard area, open water, steep slopes, and other lands deemed constrained. The remaining 71 acres mostly consist of easements, parks, open space, County owned lands or lots too small for 5 or more housing units. The majority of these lands appear to be zoned either residential or commercial. According to the most recent *Re-examination Report: Housing and Land Use*

Elements of Matawan Master Plan, the Borough has concluded that there is very little of this developable land left.

Figure 3 illustrates the Borough zoning map. As shown on this map, commercial areas are located along portions of State Route 34, Freneau Avenue (Route 79) and Main Street. Additionally, the Borough has designated approximately 44 acres near the Matawan train station as a Redevelopment Zone. This area will be redeveloped in the future for mixed uses, including residential, office, commercial, and hotel development.

Existing land use is shown on Figure 4 and environmentally constrained lands are shown in Figure 5.

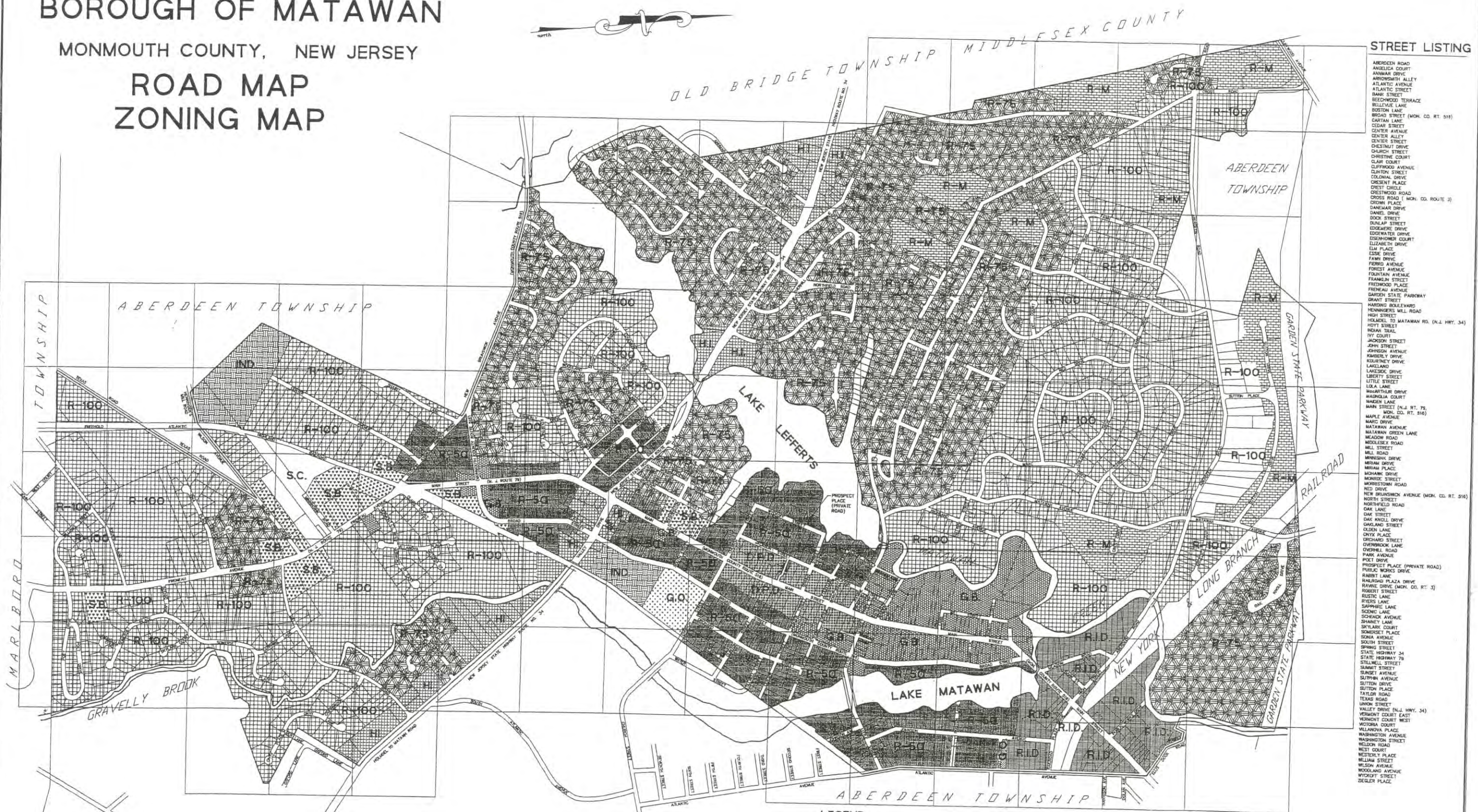
EXISTING NATURAL RESOURCE MEASURES

The Borough has areas of delineated wetlands within its borders. Conservation easements have been placed over these wetland areas, along with other environmental critical areas. These easements restrict property development for easement covered areas. In addition, the Borough has adopted an ordinance to prohibit construction or disturbance upon lands with slope of 15% grades or steeper. This ordinance also preserves other natural features including trees, topsoil, elevations and grading, and natural drainage ways.

BOROUGH OF MATAWAN

MONMOUTH COUNTY, NEW JERSEY

ROAD MAP ZONING MAP



STREET LISTING

- ABERDEEN ROAD
- ANGELICA COURT
- ANNAR DRIVE
- ARROWSMITH ALLEY
- ATLANTIC AVENUE
- ATLANTIC STREET
- BANK STREET
- BEECHWOOD TERRACE
- BELLEVUE LANE
- BOSTON LANE
- BROAD STREET (MON. CO. RT. 518)
- CARTAN LANE
- CEGAR STREET
- CENTER AVENUE
- CENTER ALLEY
- CENTER STREET
- CHESTNUT DRIVE
- CHURCH STREET
- CHRISTINE COURT
- CLIFF COURT
- CLIFFWOOD AVENUE
- CLINTON STREET
- COLONIAL DRIVE
- CREST PLACE
- CREST CHURCH
- CRESTMAR ROAD
- CROSS ROAD (MON. CO. ROUTE 3)
- CROWN PLACE
- DANIEL DRIVE
- DANIEL DRIVE
- DECK STREET
- DUNLAP STREET
- EDGEWATER DRIVE
- EDGEMERE DRIVE
- EDGEMERE DRIVE
- ESSENHOWER COURT
- ELIZABETH DRIVE
- ELM PLACE
- ESSE DRIVE
- FARM DRIVE
- FERRIS AVENUE
- FOREST AVENUE
- FOUNTAIN AVENUE
- FRANKLIN STREET
- FREDWOOD PLACE
- FRENEAU AVENUE
- GARDEN STATE PARKWAY
- GRANT STREET
- HARDING BOULEVARD
- HENNINGERS MILL ROAD
- HIGH STREET
- HOLADEL TO MATAWAN RD. (N.J. HWY. 34)
- HOYT COURT
- INDIAN TRAIL
- JACKSON STREET
- JOHN STREET
- JOHNSON AVENUE
- KIMBERLY DRIVE
- KILBURN DRIVE
- LAKELAND
- LAWES DRIVE
- LIBERTY STREET
- LITTLE STREET
- LOLA LANE
- MCCARTHER DRIVE
- MAGNOLIA COURT
- MADISON LANE
- MAN STREET (N.J. RT. 75, MON. CO. RT. 516)
- MAPLE AVENUE
- MARIC DRIVE
- MATAWAN AVENUE
- MATAWAN GREEN LANE
- MELBORN ROAD
- MIDDLESEX ROAD
- MILL STREET
- MILL ROAD
- MINUSIK DRIVE
- MIRIAM DRIVE
- MIRIAM PLACE
- MICHAM DRIVE
- MORRISTOWN ROAD
- MORRISTOWN ROAD
- NED DRIVE
- NEW BRUNSWICK AVENUE (MON. CO. RT. 518)
- NORTH STREET
- NORTHFIELD ROAD
- OAK LANE
- OAK STREET
- OAK KNOLL DRIVE
- OSGARD STREET
- OSGARD LANE
- ORNY PLACE
- ORCHARD STREET
- OVERBROOK LANE
- OVERHILL ROAD
- PARK AVENUE
- POET DRIVE
- PROSPECT PLACE (PRIVATE ROAD)
- PUBLIC WORKS DRIVE
- RABBIT LANE
- RANDOLPH PLAZA DRIVE
- RAVINE DRIVE (MON. CO. RT. 3)
- ROBERT STREET
- ROSTIC LANE
- RIVERS LANE
- SAPPHIRE LANE
- SCONE LANE
- SCHENCK AVENUE
- SHARKEY LANE
- SKYLARK COURT
- SOBERBROOK PLACE
- SKYLA AVENUE
- SOUTH STREET
- SPRING STREET
- STATE HIGHWAY 34
- STATE HIGHWAY 78
- STILLWELL STREET
- SUNSET STREET
- SUNSET AVENUE
- SUTPHAN AVENUE
- SUTTON DRIVE
- SUTTON PLACE
- TAYLOR ROAD
- TEXAS ROAD
- UNION STREET
- VALLEY DRIVE (N.J. HWY. 34)
- VERMONT COURT EAST
- VERMONT COURT WEST
- WICTORIA COURT
- WELLSBORO PLACE
- WASHINGTON AVENUE
- WASHINGTON STREET
- WELDON ROAD
- WEST COURT
- WESTLEY PLACE
- WILLIAM STREET
- WELSON AVENUE
- WOODLAND AVENUE
- WYCKOFF STREET
- DEALER PLACE

LEGEND

- | | | | | | | | |
|--|-----------------------|--|--------------------------------------|--|---------------------------------------|--|--------------------------------------|
| | C.B. GENERAL BUSINESS | | R-M RESIDENTIAL GARDEN APARTMENTS | | R-100 RESIDENTIAL ONE FAMILY DWELLING | | H.I. HIGHWAY IMPROVEMENT |
| | G.O. GENERAL OFFICE | | R-75 RESIDENTIAL ONE FAMILY DWELLING | | S.C. SENIOR CITIZENS | | IND. INDUSTRY |
| | S.B. SPECIAL BUSINESS | | R-50 RESIDENTIAL ONE FAMILY DWELLING | | D.P.D. DOWNTOWN PRESERVATION DISTRICT | | R.I.D. RAILROAD IMPROVEMENT DISTRICT |

PREPARED BY:
SCHOOR & DePALMA, INC.
 Engineers and Design Professionals
 908/577-9000
 Justin Corporate Center
 200 State Highway 91a, P.O. Box 1149, Matawan, NJ 07726

ROBERT W. BUCCO JR., N.J.P.E. LIC. NO. 38132
 BOROUGH ENGINEER

Figure 3

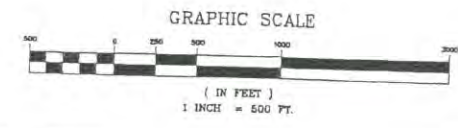
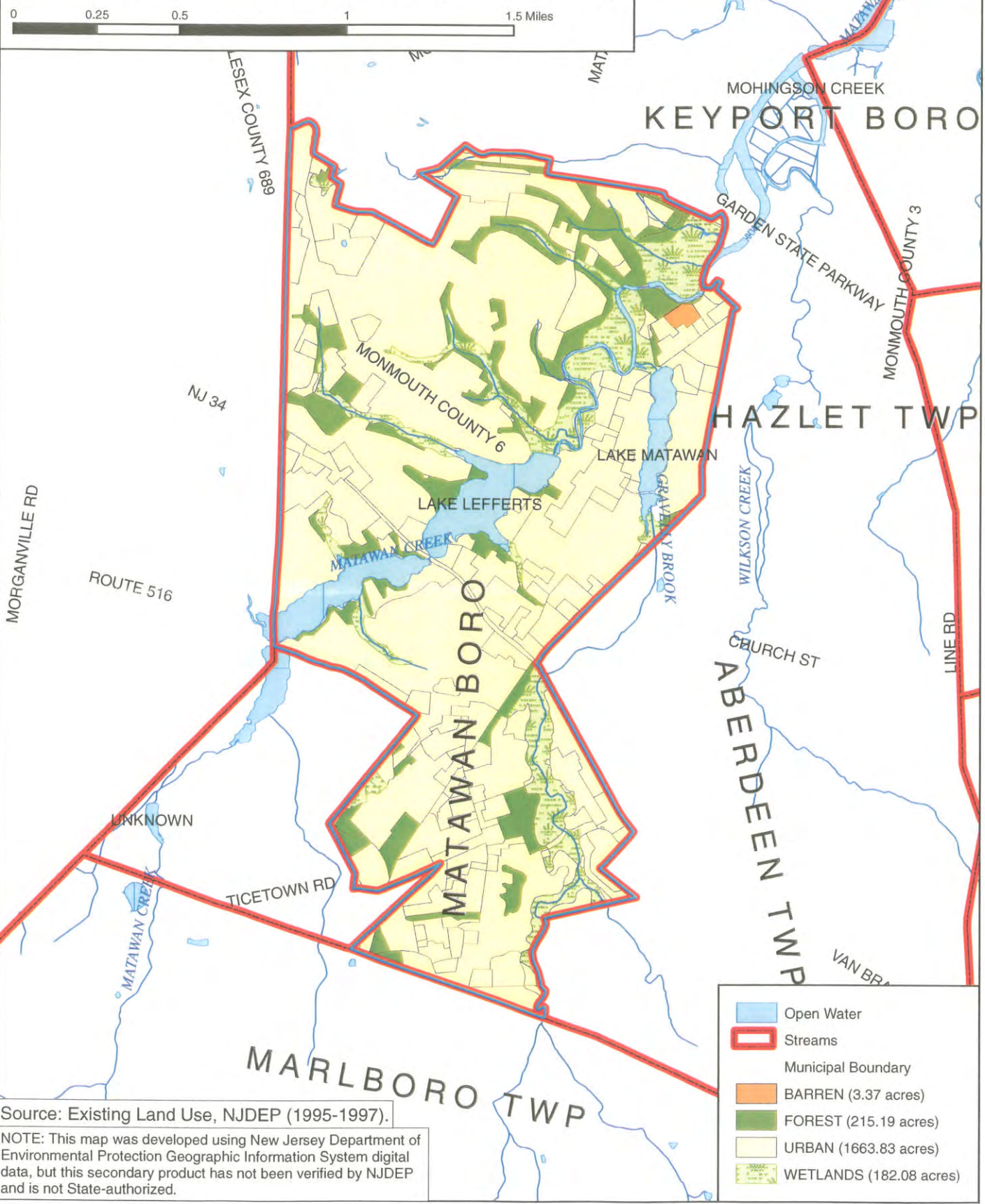


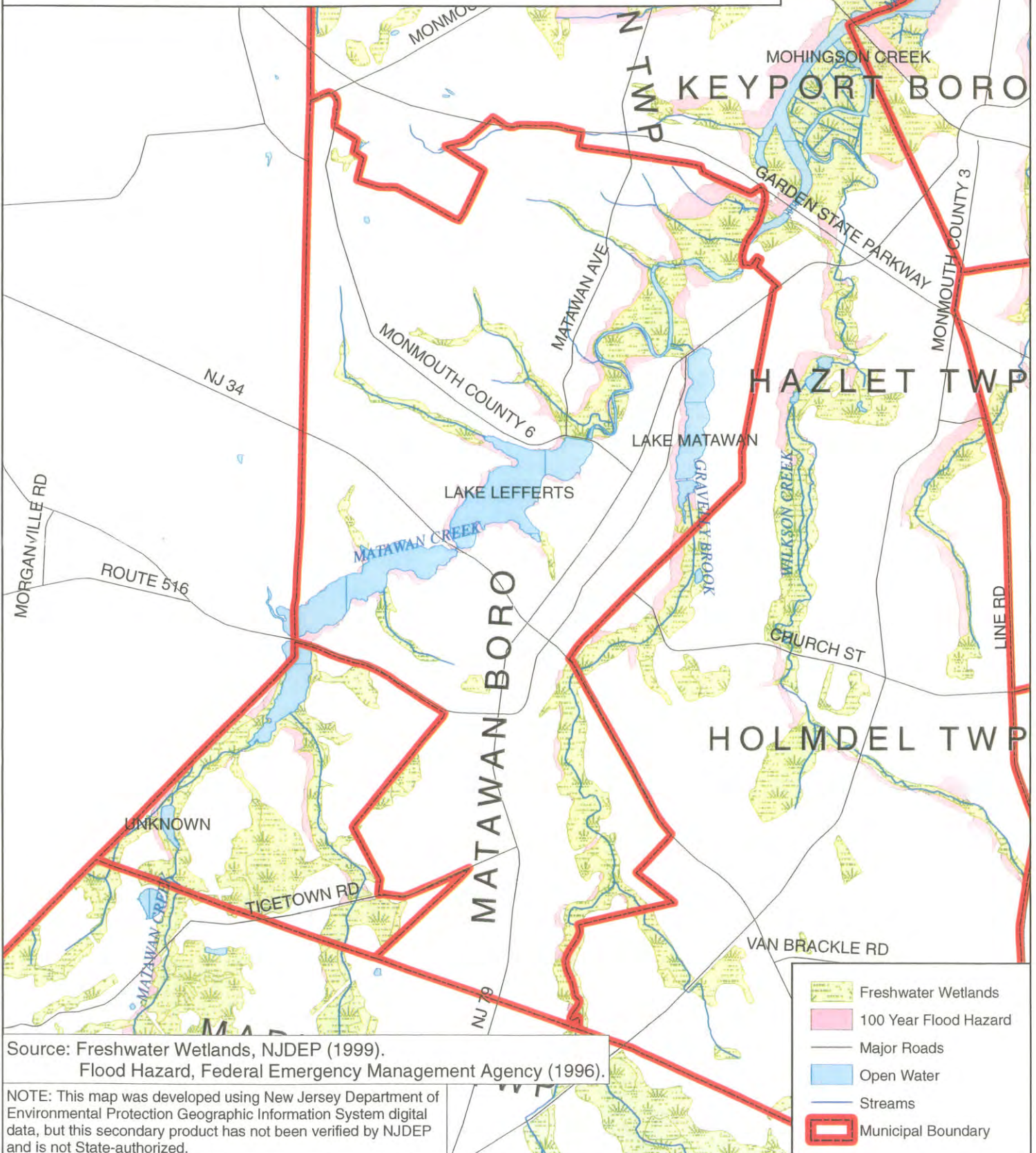
Figure 4: Existing Land Use
 Borough of Matawan
 Monmouth County, New Jersey









Source: Existing Land Use, NJDEP (1995-1997).
 NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

Figure 5: Environmentally Constrained Lands
 Borough of Matawan
 Monmouth County, New Jersey

0 0.2 0.4 0.8 1.2 Miles



NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

-  Freshwater Wetlands
-  100 Year Flood Hazard
-  Major Roads
-  Open Water
-  Streams
-  Municipal Boundary

WATERWAYS

The Borough is located in Watershed Management Area 12, within the Bayshore watershed. The Borough's waterways include Lake Lefferts, Matawan Creek, Lake Matawan, Gravelly Brook, and their associated tributaries and wetlands. This watershed area drains to Raritan Bay, therefore is considered an FW2-NT/SE1 waterway. Figure 6 illustrates the waterways of the Borough. Lake Lefferts, located approximately in the middle of the Borough is fed by Matawan Creek flowing from Marlboro Township. The Gravelly Brook feeds Lake Matawan located south and east of Lake Lefferts. The Gravelly Brook also flows from Marlboro Township, then through sections of both Aberdeen Township and the Borough. Both lakes feed Matawan Creek to the north along with several other unnamed tributaries. Tests in the late 1970's indicated that the water quality for Lake Lefferts was designated as water quality Class IV.

The Borough is also located within the Matawan Creek (Below Ravine Drive) and the Matawan Creek (Above Ravine Drive) HUC-14 subwatersheds. A HUC-14 subwatershed is a hydrologic unit code which NJDEP and USGS use to map small subwatersheds. HUC-14s are usually about 3,000 acres in size, according to the NJDEP. Figure 7, delineates the Borough's HUC-14 subwatersheds.

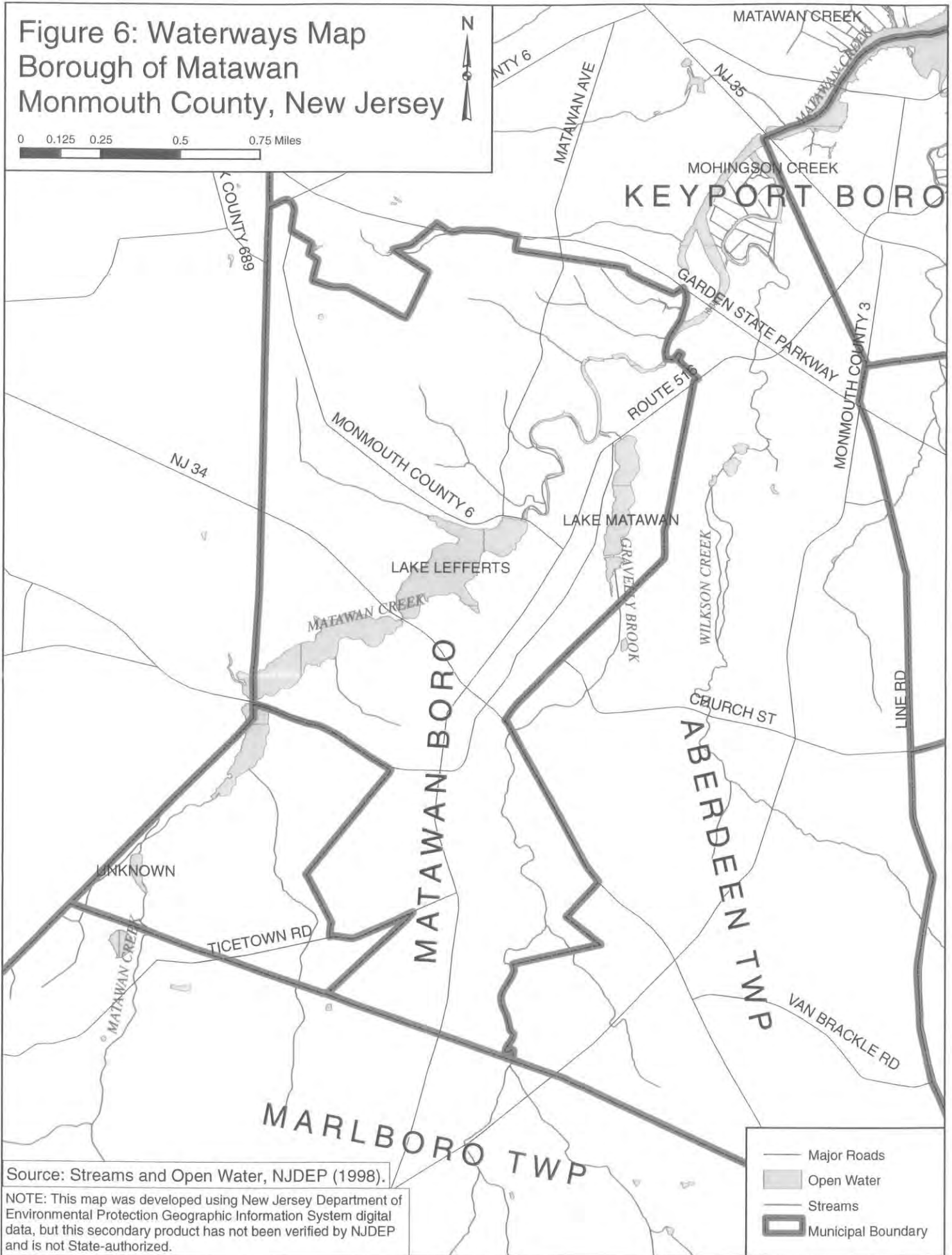
WATER QUALITY

The Ambient Biomonitoring Network (AMNET) was established by the New Jersey Department of Environmental Protection (NJDEP) to monitor and document the health of New Jersey's waterways. AMNET currently has 820 sites in five drainage basins that it monitors for benthic macroinvertebrates on a five-year cycle. Waterways are scored based on the data to generate the New Jersey Impairment Score (NJIS) and then categorized as severely impaired, moderately impaired, and non-impaired. The NJIS is based on biometrics and benthic macroinvertebrate health. (<http://www.state.nj.us/dep/wmm/bfbm/>)

The Matawan Creek at Morganville Road in Old Bridge Township is listed as moderately impaired (AMNET AN0457), while the Gravelly Brook at Church Road in Aberdeen (AN0457) is listed as severely impaired. Neither site is directly in Matawan, though the waterways flow

Figure 6: Waterways Map
 Borough of Matawan
 Monmouth County, New Jersey

0 0.125 0.25 0.5 0.75 Miles



Source: Streams and Open Water, NJDEP (1998).

NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.





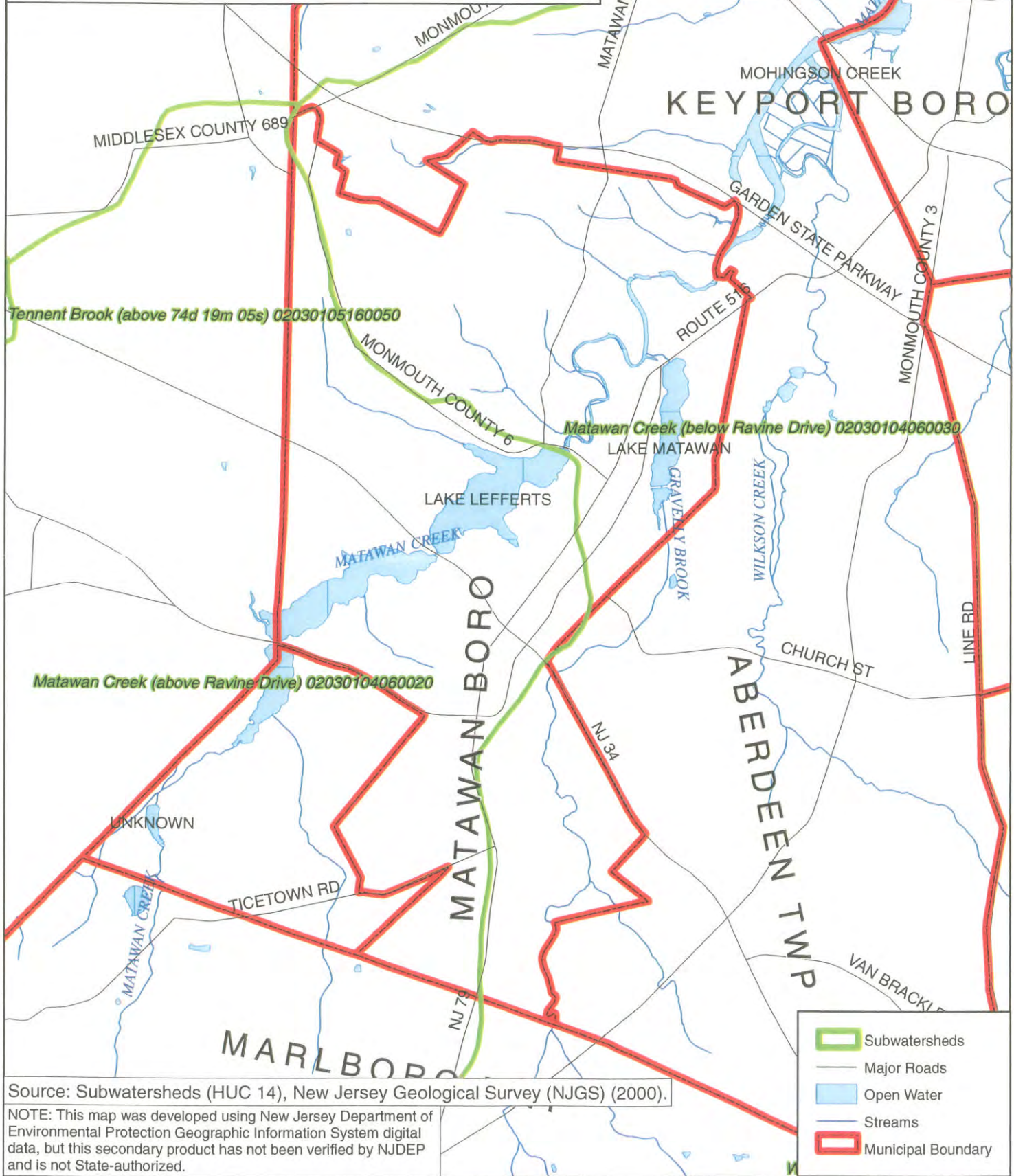
-  Major Roads
-  Open Water
-  Streams
-  Municipal Boundary

Figure 7: Hydrologic Units (HUC-14s)
 Borough of Matawan
 Monmouth County, New Jersey



- ▭ Subwatersheds
- Major Roads
- Open Water
- Streams
- Municipal Boundary

Source: Subwatersheds (HUC 14), New Jersey Geological Survey (NJGS) (2000).

NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

through the Borough. (<http://www.state.nj.us/dep/wmm/bfbm/downloads.html#atl>)

Category One (C1) waters, as defined by the NJDEP, are also areas with special levels of protection. Waterways can be designated C1 because of exceptional significance for ecological, water supply, recreational, shellfish or fisheries resources. There are no C1 waterways within the Borough; however, sections of the Gravelly Brook outside of the Borough boundary are listed. (http://www.nj.gov/dep/cleanwater/c1_waters_list.pdf)

In addition to biological health, chemical data are gathered by the NJDEP and other organizations, and used to determine the health of waterways. The data are then used to determine which waters require the development of Total Maximum Daily Loads (TMDLs). A TMDL is the carrying capacity of a waterbody for a given pollutant. This is the quantity of pollutants that can enter a waterbody without exceeding water quality standards or interfering with the ability to use the waterbody for its designated usage. Point and non-point source pollution, surface water withdrawals and natural background levels are included in the determination of a TMDL, as required by section 303(d) of the Clean Water Act. Point source pollution includes, but is not limited to New Jersey Pollutant Discharge Elimination System (NJPDES) permitted discharges, while non-point source pollution may include stormwater runoff from agricultural lands or impervious surfaces. TMDLs determine the allowable load from each source, with a factor of safety, of the pollutant entering the waterbody. TMDLs can be used to limit further deterioration of a waterbody, or to improve the current water quality. The following waterbodies are listed on the NJDEP's 2004 Integrated List of Waterbodies (Table 3). The sublist ranking indicates the quality of a given waterbody. Waterbodies on Sublist 1 have the highest or best water quality, and those on Sublist 5 have the lowest or worst quality water.

Table 3: 2004 Borough of Matawan - Integrated List of Water Bodies

Sublist	Station Name/Waterbody	Site ID	Parameters	Data Source
3	Lefferts Lake-12	66, Lefferts Lake	pH, Total Suspended Solids	Monmouth Co HD, NJDEP Freshwater Fisheries
1	Lefferts Lake-12	66, Lefferts Lake	Nitrate, Fecal Coliform	Monmouth Co HD, NJDEP Freshwater Fisheries
5	Lefferts Lake-12	66, Lefferts Lake	Phosphorus, Fish Community	Monmouth Co HD, NJDEP Freshwater Fisheries
1	Lake Matawan-12	65	Phosphorus, Fecal Coliform	Monmouth Co HD
5	Gravelly Brook at Church St in Aberdeen	AN0457	Benthic Macroinvertebrates	NJDEP AMNET
5	Gravelly Brook at Lloyd Rd in Marlboro	20	Phosphorus	Monmouth Co HD
1	Gravelly Brook at Lloyd Rd in Marlboro	20	Fecal Coliform, Nitrate	Monmouth Co HD
3	Gravelly Brook at Lloyd Rd in Marlboro	20	pH, Total Suspended Solids	Monmouth Co HD

Source: New Jersey's 2004 Integrated List of Waterbodies. <http://www.state.nj.us/dep/wmm/sgwqt/wat/index.html>

An implementation plan should be developed to identify how various sources of pollution will be reduced to the levels specified in any issued TMDL. Some of the strategies that may be implemented include stormwater treatment, implementation of updated ordinances, restriction of impervious surfaces, retrofitting stormwater systems, disconnection of impervious surfaces, and other use of other BMPs. However, according to the Division of Watershed Management of the NJDEP, there is no stormwater specific TMDLs for the waterways in the Borough of Matawan, and as such are not governed under this MSWMP.

Both lakes are also classified as Environmentally Sensitive. This classification means the Borough should control new development to maintain the integrity and capacity of these natural resources through planning, intensity of development, and design.

Both Lake Matawan and Lake Lefferts also appear to have sedimentation issues. In addition to state monitoring, the Monmouth County Health Department also monitors the health of these waterways, as well as other waterways that are in or flow through the Borough. Lake Lefferts

and Lake Matawan, as well as Gravelly Brook in Marlboro, and the Matawan Creek in Aberdeen are monitored for fecal coliform, ammonia, phosphorous, pH, Total Suspended Solids (TSS) and Turbidity approximately four times per year. Both lakes have acidic waters averaging a pH of 3.87 for Lake Matawan, and a pH of 4.2 for Lake Lefferts. According to the Monmouth County Health Department, Lake Matawan and Gravelly Brook are acidic because the source is spring fed through iron containing, acidic soils. Both waterbodies are habitats for a green filamentous alga, which gives the water a greenish color. Both lakes have a widely varying turbidity and a TSS of between 1 mg/L and 23mg/L.

It should also be noted that the Imperial Oil Co. site, which is located in the Township of Marlboro, contained a hazardous waste with organic compounds, metals and PCBs that in the past affected Lake Lefferts. This site is currently listed on the “Known Contaminated Sites” list. According to the New Jersey Health Department, and the December 2003 USEPA Site Fact Sheet, site clean-up is progressing. Several “immediate actions” were taken including fencing and contamination removal. The long term clean-up process is currently ongoing. Per the Environmental Protection Agency’s (EPA) five year review of the site, the completion of the on-site and off-site clean-up work will prevent the recontamination of the adjacent areas.

WATER QUANTITY

There are some flooding issues within the Borough. One notable location is Aberdeen Road along the Matawan Creek. This road floods frequently during storms. Flooding is exacerbated during extremely high tides, as there is some tidal influence in this area. Matawan Avenue at Ravine Drive will occasionally flood during very large storm events, approximately every 10 years. The Borough will continue to evaluate its flooding issues within its boundaries. These locations are depicted in Figure 8.


GROUNDWATER RECHARGE

The Borough’s drinking water is purchased from New Jersey American Water. In times of high demand, the Borough will also draw from two Borough owned wells. In addition, past studies evaluated the use of Lake Lefferts and Lake Matawan as potable water sources, however, to date;

LEGEND

● FLOOD PRONE AREA



BOROUGH OF MATAWAN		
 TM ASSOCIATES 11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365	BOROUGH OF MATAWAN FLOOD AREAS MAP	
	MATN.01160	MATN116-SM
		FIGURE NO. 8

there has been no further analysis or movement to use alternate drinking water supplies. As previously mentioned, Gravelly Brook, the major tributary of Lake Matawan is spring fed. This means that the stream corridor is fed by outcropping of the aquifer below, and therefore the volume of flow, as well as velocity of the stream is dependent on groundwater recharge.

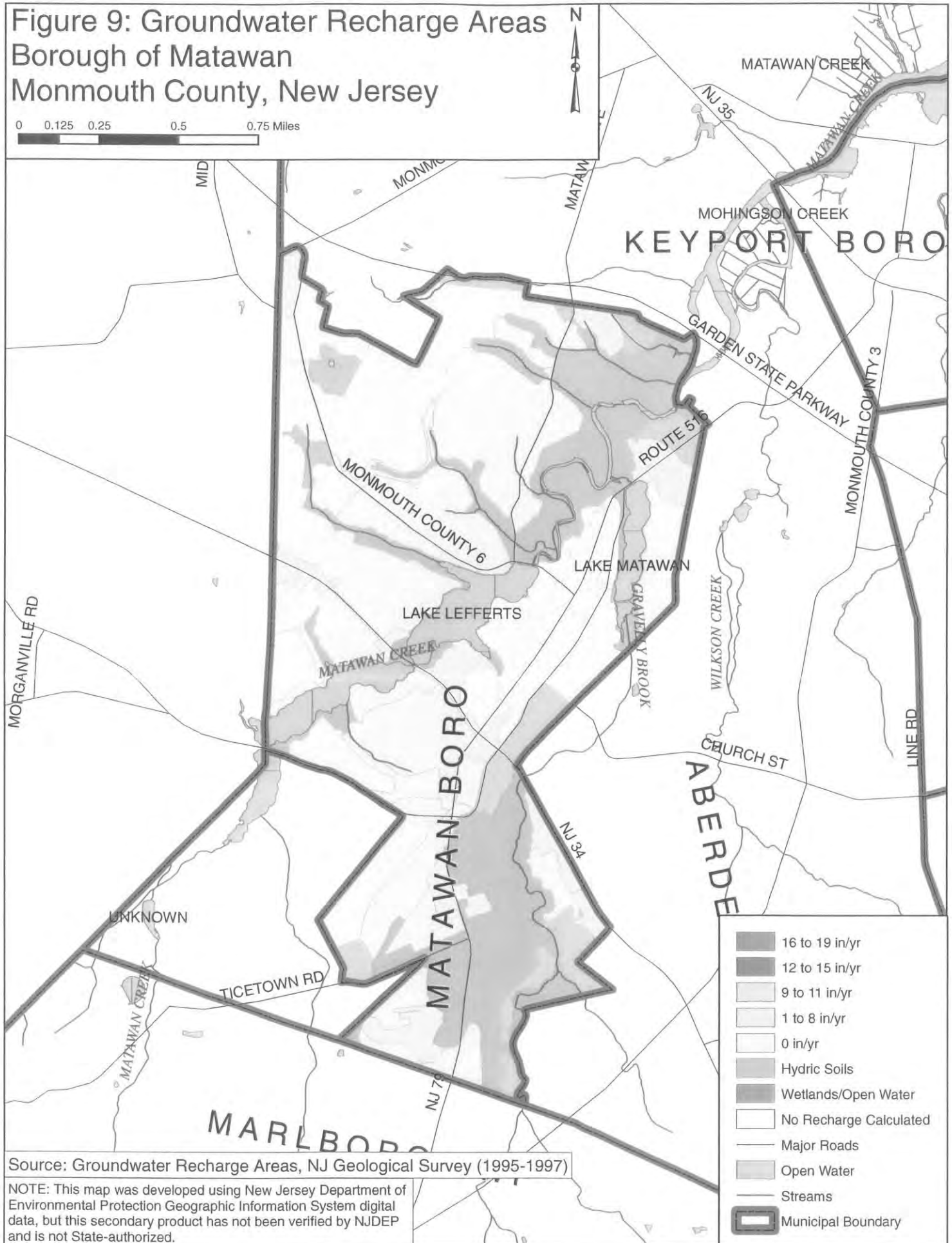
Groundwater recharge is the calculated amount of water actually absorbed into the groundwater from the surface. Impervious surfaces do not allow water to recharge these aquifers. It should be noted that groundwater recharge is also not calculated for surface water bodies, wetlands, or hydric soils because they may discharge, or recharge any area, or they may have no net effect, depending on each specific site, and its conditions. (<http://www.state.nj.us/dep/njgs/pricelst/ofmap/ofm32.pdf>) A hydric soil, by definition, is a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part. (59 Fed. Reg. 35680, 7/13/94)

Increases in development have increased impervious surface area. Increased impervious surface area can, as previously mentioned, result in an increase in peak and volume of the Borough's stream flow. Any increase in the amount of water can result in stream erosion and degradation of stream habitats. Additionally, increasing impervious area decreases the base flows of streams during dry weather periods, which, in turn, can negatively impact stream habitats. The Borough's groundwater recharge areas are mapped in Figure 9.

Wellhead Protection Areas (WHPA) are delineations of the horizontal extent captured by well pumping at a given rate over a two-, five-, and twelve-year period of time. These areas are the first step in defining the source of a public drinking supply well. It should be noted, however, that all confined wells have a fifty foot radius delineation which serves as an area to protect the well head. This fifty foot radius is controlled by the water purveyor. No WHPAs with delineated and tiered capture areas are located within the Borough (see Figure 10).

Figure 9: Groundwater Recharge Areas
 Borough of Matawan
 Monmouth County, New Jersey

0 0.125 0.25 0.5 0.75 Miles

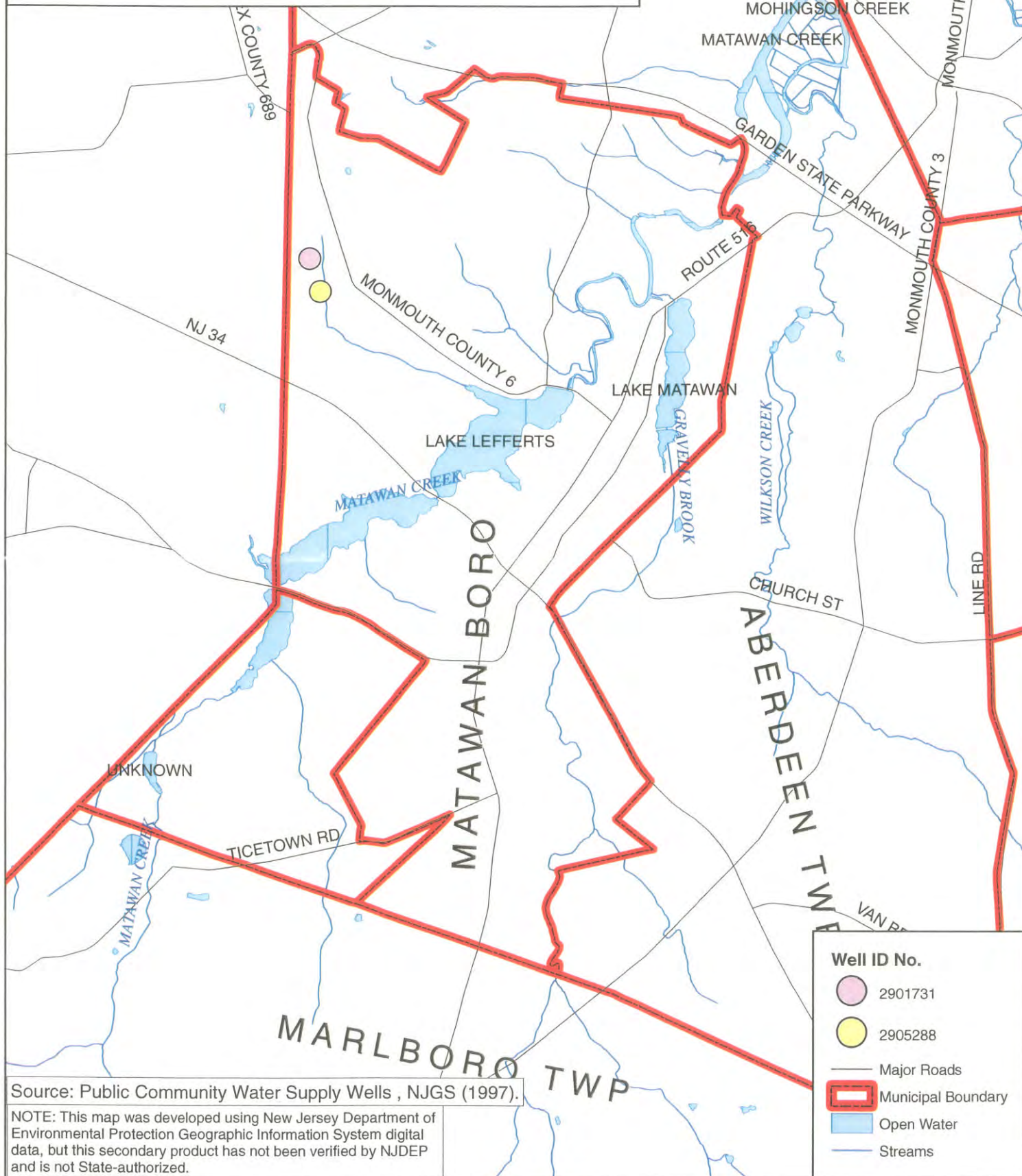


Source: Groundwater Recharge Areas, NJ Geological Survey (1995-1997)

NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

Figure 10: Wellhead Protection Areas
 Borough of Matawan
 Monmouth County, New Jersey

0 0.25 0.5 1 1.5 Miles



Well ID No.

- 2901731
- 2905288
- Major Roads
- Municipal Boundary
- Open Water
- Streams

Source: Public Community Water Supply Wells, NJGS (1997).

NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

DESIGN AND PERFORMANCE STANDARDS

The Borough has adopted applicable design and performance standards for stormwater management measures as presented in N.J.A.C. 7:8-5 to reduce the negative impact of stormwater runoff on water quality and quantity, and loss of groundwater recharge in receiving waterbodies. The section of this MSWMP, entitled Stormwater Management Strategies, indicates actions appropriate for various types of development in Matawan. Ultimately, design and performance standards were created to contain the necessary language to maintain stormwater management measures consistent with the applicable stormwater management rules, N.J.A.C. 7:8-5.8 - Maintenance Requirements. This included language for safety standards consistent with N.J.A.C. 7:8-6 - Safety Standards for Stormwater Management Basins. Upon adoption, the Stormwater Control Ordinance was submitted to the Monmouth County Planning Board for review and approval.

A number of structural and nonstructural strategies require water to be retained for long periods of time. These requirements may increase the promulgation of mosquito breeding habitats. New development and redevelopment activities should be coordinated with the Monmouth County Mosquito Extermination Commission so that proposed structural and nonstructural strategies are properly maintained.

Proper inspection and maintenance are critical components for the successful performance of a stormwater management system. The Borough has prepared a Stormwater Pollution Prevention Plan (SPPP) to address inspection and maintenance for existing stormwater infrastructures throughout the Borough. Also included in the SPPP is the development of a Local Public Education Program to educate property owners on methods to reduce nonpoint stormwater pollution such as proper waste disposal, solids and floatable controls, fertilizer and pesticide use, pet waste disposal, wildlife feeding, goose management, etc. Public Education of improper waste disposal on the Borough's steep slopes will also be stressed in this program. In addition, the Borough's SPPP outlines modifications to existing Borough programs, and introduces new programs to aid in the Borough's stormwater management effort. These programs include

stormwater facility maintenance, catch basin labeling, improved street sweeping, and employee training.

New development and redevelopment projects will be required to develop and submit a detailed operation and maintenance plan for each best management practice (BMP) established in accordance with the N.J.A.C. 7:8 - 5.8. Recommendations for proper maintenance procedures are available in the NJDEP's *Stormwater Best Management Practices Manual* (BMP Manual). Copies of the maintenance plan(s) will be filed with the Borough Department of Public Works.

Borough representatives will monitor construction of the BMP project to ensure that the appropriate stormwater management measures are constructed and function as designed. Borough personnel will conduct inspections as needed to ensure public systems are functioning properly and to identify maintenance needs, if any. For privately owned and operated BMPs, the Owner shall inspect the BMPs as needed. After this, annual checks shall be done to identify any additional maintenance needs required. This may include clearing of blockages from inlets and/or outlet structures, removal of unhealthy vegetation or accumulated debris/materials.

Borough ordinances provide for the inspection of systems on private property, provided the necessary easements are in place, upon giving reasonable notice. Ordinances provide a time frame for maintenance procedures to occur upon receiving notice from the Borough that maintenance is required. Additionally, ordinances require Maintenance Plans for privately owned BMPs which include information such as contact information for the responsible party, schedule of required maintenance, estimated costs of maintenance, etc. in accordance with State regulations.

PLAN CONSISTENCY

REGIONAL STORMWATER MANAGEMENT PLANS

Currently, there are no Regional Stormwater Management Plans (RSWMP) developed for waters within the Borough. This plan will be updated to be consistent with any RSWMP that are established in the future. The Borough plans to take part in the development of any RSWMP that affects waterbodies within or adjacent to the municipality.

TOTAL MAXIMUM DAILY LOADS

Though there are waterways, such as Gravelly Brook, which flow into the Borough listed on Sublist 5 of the 2004 Integrated Waterbodies list, currently there are no specific stormwater TMDLs for these waterways. This plan will be updated with prioritized waterbodies in the future, when such regulations affecting the waterbodies of the Borough are established.

RESIDENTIAL SITE IMPROVEMENT STANDARDS (RSIS)

This Municipal Stormwater Management Plan is consistent with regulations established under the Residential Site Improvement Standards (RSIS) at N.J.A.C. 5:21. The Borough will utilize the most current update of the RSIS for stormwater management review of residential areas. This Plan incorporates the statute of RSIS and acknowledges that RSIS is periodically updated.

SOIL CONSERVATION

The Borough's Stormwater Management Control Ordinance will require that all new development and redevelopment projects comply with the Soil Erosion and Sediment Control Standards of New Jersey. In cooperation with the Freehold Soil Conservation District, Borough representative will observe on-site soil erosion and sediment control measures as part of the construction site inspections.

All development and redevelopment projects shall use the most recent DelMarVa unit hydrograph for stormwater calculations. In addition the Freehold Soil Conservation District requires the use of the most recent design storm rainfall data for stormwater calculations. The

National Oceanographic and Atmospheric Administration (NOAA), the agency that develops statistical estimates of rainfall amounts, has increased its estimates for the majority of storm events, particularly the larger events. The following table indicates the old and new twenty-four hour rainfall amounts in inches for Monmouth County.

Table 4: NRCS 24 Hour Design Storm Rainfall Depth (inches) – September 2004

Storm Period	1 yr.		2 yr.		5 yr.		10 yr.		25 yr.		50 yr.		100 yr.	
	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
Monmouth County	2.8	2.9	3.4	3.4	4.4	4.4	5.3	5.2	6.0	6.6	6.5	7.7	7.5	8.9

Source: NOAA, NJ Department of Agriculture

MONMOUTH COUNTY GROWTH MANAGEMENT GUIDE

The Monmouth County Growth Management Guide, adopted in December 1995, sets forth a series of goals and objectives designed to enhance the quality of life for residents of Monmouth County. This plan is consistent with those objectives, which include:

- Encouraging the protection of the County’s unique, diverse, natural and scenic natural resources; and
- Promoting the protection of non-renewable natural resources; and
- Encouraging the protection and conservation of all water resources; and
- Promoting the preservation and improvements of surface water quality; and
- Encouraging the preservation and improvements of groundwater quality and quantity; and
- Promoting the preservation, restoration, and enhancement of wetlands and stream corridors in order to protect the adjacent water bodies, such as streams, rivers and lakes.

This plan is consistent with the County Growth Management Guide by encouraging the protection of stream corridors and encouraging flood control and ground water recharge through the implementation of the principals of non-structural and structural strategies. This Plan is also consistent with the County Growth Management Guide, by preserving and protecting valuable natural features within the Borough.

STATE DEVELOPMENT OR REDEVELOPMENT PLAN (SDRP)

This plan is consistent with the plans and policies of the SDRP, which was adopted in 2001. The SDRP places non-environmentally constrained areas in the Borough in the Metropolitan Planning Area (PA1). Exceptions to the PA1 designation are wetlands and floodplain areas that are located within the Environmentally Sensitive Planning Area (PA5). According to the State Plan, most of the communities within the PA1 planning area are fully developed or almost fully developed with little vacant land available for new development. This Plan is consistent with the State Plan by preserving and protecting the established residential character of the Borough, preserving and upgrading the existing utility infrastructure, providing adequate open space facilities, and preserving and protecting valuable natural features within the Borough.

STORMWATER MANAGEMENT STRATEGIES

The Borough has reviewed its Master Plan and pertinent development ordinances. Below is a list of recommended revisions to existing ordinances and new strategies that the Borough should consider implementing in order to incorporate the NJDEP's nonstructural strategies for stormwater management. It should be noted that the Borough is fully developed and minimal "major development"¹ is anticipated.

- ❑ **Section 304-41: Buffer Strips:** This section states the requirements for Buffer strips between Residential and other Land uses. This section should be updated to encourage the use of native vegetation in buffer areas.

- ❑ **Section 304-70: HI Highway Improvement Districts:** This section states the requirements for Buffer strips between Highways and other land uses. This section should be updated to encourage the use of native vegetation in buffer areas.

- ❑ **Section 304-75: Cluster Development:** This section describes the Borough's requirements for cluster developments. This section should be updated to include a maximum impervious cover requirement. Additionally, this section should be updated to encourage the use of native vegetation, which requires less watering and fertilization, in designated open spaces.

- ❑ **Section 304-35: Preservation of Natural Features:**
 - ❑ **A:** This section describes the Borough's requirement to preserve natural features and prevent soil erosion. This section should be modified to be in conformance with Freehold Soil Conservation District.

 - ❑ **B:** Section B discusses stream setback requirements. This section should be evaluated to

¹ Major Development – means any development that provides for ultimately disturbing one or more acres of land. Disturbance for the purpose of this rule is the placement of impervious surface or exposure and/or movement of soil or bedrock or clearing, cutting, or removing of vegetation. Projects undertaken by any government agency which otherwise meet the definition of 'major development' but which do not require approval under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., are also considered "major development."

determine if a stream corridor buffer is necessary.

- ❑ **Section 304-29. (3): Off Tract Improvements: Other Improvements:** This section outlines the fees that developers may pay into escrow for off tract improvements to the drainage system. This section should be updated to include the "Design and Performance Standards" described in this MSWMP and as outlined in N.J.A.C. 7:8.
- ❑ **Section 304-43: Off-street Parking and Loading:** This section describes required stall sizes and ratios. This section should be evaluated and updated to require a minimum stall width of 9 feet, and a reduction in the number of parking stalls per use if possible. This section also requires parking areas to have sidewalks wherever there will be pedestrian traffic. This section should be modified to allow the use of porous or permeable paving systems for these sidewalks.
- ❑ **Section 304-30: Performance and Design Standards: Applicability or Regulations:** This section identifies which developments subject to the Borough's Performance and Design Standards should apply. This section should be modified to include the stormwater management "Design and Performance Standards" outlined in this MSWMP and as outlined in N.J.A.C. 7:8.
- ❑ **Article XIII- Stormwater Control:** This section states the Borough's current stormwater management regulations. This section should be updated to include the "Design and Performance Standards" and long term maintenance and safety requirements and provisions described in this MSWMP and as outlined in N.J.A.C. 7:8.

Revised ordinances will be submitted to the Monmouth County Planning Board for review and approval. Upon approval from the County, copies will be forwarded to the Department of Environmental Protection.

NONSTRUCTURAL STRATEGIES

This Plan recommends the practical use of the following nonstructural strategies for all major developments in accordance with the NJDEP BMP Manual:

1. Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.
2. Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces.
3. Maximize the protection of natural drainage features and vegetation.
4. Minimize the decrease in the pre-construction “time of concentration.”
5. Minimize land disturbance including clearing and grading.
6. Minimize soil compaction.
7. Provide vegetated open-channel conveyance systems that discharge into and through stable vegetated areas.
8. Provide preventative source controls.

In addition, the NJDEP's BMP Manual further requires an applicant seeking approval for a major development to specifically identify which strategies have been chosen and how these nonstructural strategies have been incorporated into the development's design. Finally, for each of those nonstructural strategies that were not able to be incorporated into the development's design due to engineering, environmental, or safety reasons, the applicant must provide a basis for this contention.

Recommended Measures

Recommendations in the BMP Manual may be implemented in part through the use of:

- **Vegetated Filter Strips**

Vegetated filter strips are best utilized adjacent to a buffer strip, watercourse or drainage swale since the discharge will be in the form of sheet flow, making it difficult to convey the stormwater downstream in a normal conveyance system (swale or pipe).

- **Stream Corridor Buffer Strips**

Buffer strips are undisturbed areas between development and the receiving waters. There are two management objectives associated with stream and valley corridor buffer strips:

- To provide buffer protection along a stream and valley corridor to protect existing ecological form and functions; and
- To minimize the impact of development on the stream itself (filter pollutants, provide shade and bank stability, reduce the velocity of overland flow).

Buffers only provide limited benefits in terms of stormwater management; however, they are an integral part of a system of best management practices.

- **The Stabilization of Banks, Shoreline and Slopes**

The root systems of trees, shrubs and plants effectively bind soils to resist erosion. Increasing the amount of required plant material for new and redeveloped residential and non-residential sites should be encouraged throughout the Borough where applicable. Planting schemes should be designed by a certified landscape architect to combine plant species that have complementary rooting characteristics to provide long-term stability.

- **Deterrence of Geese**

Maintaining or planting dense woody vegetation around the perimeter of a pond or wetland is the most effective means of deterring geese from taking over and contaminating local lakes and ponds. Minimizing the amount of land that is mowed will limit the preferred habitat for geese.

- **Fertilizers**

The use of fertilizers to create the “perfect lawn” is an increasingly common problem in many residential areas. Fertilizer run-off increases the level of nutrients in water bodies and

can accelerate eutrophication² in the lakes and rivers and continue on to the coastal areas. The excessive use of fertilizers causes nitrate contamination of groundwater. Good fertilizer maintenance practices help in reducing the amount of nitrates in the soil and thereby lower its content in the water. Initially, the Borough should work with the NJDEP to educate homeowners of the impacts of the overuse of fertilizers. This discussion should include other techniques to create a “green lawn” without over fertilizing. Almost as important as the use of fertilizer, is the combination of over fertilizing and over watering lawns. In many cases this leads to nutrient rich runoff, which ultimately migrates to a nearby stream, lake or other water body. If fertilizer is applied correctly, the natural characteristics of the underlying soils will absorb or filter out the nutrients in the fertilizer.

STRUCTURAL STORMWATER MANAGEMENT³

In Chapter 9 of *its Stormwater Management Best Management Practices Manual*, the Department of Environmental Protection identifies several structural stormwater management options. Structural methods should only be used after all non-structural strategies are deemed impracticable or unsafe. Specifically, the Borough encourages the use of structural stormwater management systems in a manner that maximizes the preservation of community character:

- **Bioretention Systems**

A bioretention system consists of a soil bed planted with native vegetation located above an underdrained sand layer. It can be configured as either a bioretention basin or a bioretention swale. Stormwater runoff entering the bioretention system is filtered first through the vegetation and then the sand/soil mixture before being conveyed downstream by the underdrain system. Runoff storage depths above the planting bed surface are typically shallow. The adopted Total Suspended Solids (TSS) removal rate for bioretention systems is 90 percent.

² Eutrophication – The normally slow aging process by which a lake evolves into a bog or marsh and ultimately assumes a completely terrestrial state and disappears.

³ Definitions provided in the NJDEP – Stormwater Best Management Practices Manual at: http://www.njstormwater.org/tier_A_bmp_manual.htm

- **Constructed Stormwater Wetlands**

Constructed stormwater wetlands are wetland systems designed to maximize the removal of pollutants from stormwater runoff through settling and both uptake and filtering by vegetation. Constructed stormwater wetlands temporarily store runoff in relatively shallow pools that support conditions suitable for the growth of wetland plants. The adopted removal rate for constructed stormwater wetlands is 90 percent.

- **Dry Wells**

A dry well is a subsurface storage facility that receives and temporarily stores stormwater runoff from roofs of structures. Discharge of this stored runoff from a dry well occurs through infiltration into the surrounding soils. A dry well may be either a structural chamber and/or an excavated pit filled with aggregate. Due to the relatively low level of expected pollutants in roof runoff, a dry well cannot be used to directly comply with the suspended solids and nutrient removal requirements contained in the NJDEP Stormwater Management Rules at N.J.A.C. 7:8. However, due to its storage capacity, a dry well may be used to reduce the total stormwater quality design storm runoff volume that a roof would ordinarily discharge to downstream stormwater management facilities. Care should be taken with the location and size of dry wells due to potential adverse impacts on basements and foundations.

- **Extended Detention Basins**

An extended detention basin is a facility constructed through filling and/or excavation that provides temporary storage of stormwater runoff. It has an outlet structure that detains and attenuates runoff inflows and promotes the settlement of pollutants. An extended detention basin is normally designed as a multistage facility that provides runoff storage and attenuation for both stormwater quality and quantity management. The adopted TSS removal rate for extended detention basins is 40 to 60 percent, depending on the duration of detention time provided in the basin.

- **Infiltration Basins**

An infiltration basin is a facility constructed within highly permeable soils that provides

temporary storage of stormwater runoff. An infiltration basin does not normally have a structural outlet to discharge runoff from the stormwater quality design storm, but may require emergency overflow for extraordinary storm events. Instead, outflow from an infiltration basin is through the surrounding soil. An infiltration basin may also be combined with an extended detention basin to provide additional runoff storage for both stormwater quality and quantity management. The adopted TSS removal rate for infiltration basins is 80 percent.

- **Manufactured Treatment Devices**

A manufactured treatment device is a pre-fabricated stormwater treatment structure utilizing settling, filtration, absorptive/adsorptive materials, vortex separation, vegetative components, and/or other appropriate technology to remove pollutants from stormwater runoff. The TSS removal rate for manufactured treatment devices is based on the NJDEP certification of the pollutant removal rates on a case-by-case basis. Other pollutants, such as nutrients, metals, hydrocarbons, and bacteria can be included in the verification/certification process if the data supports their removal efficiencies.

- **Pervious Paving Systems**

Pervious paving systems are paved areas that produce less stormwater runoff than areas paved with conventional paving. This reduction is achieved primarily through the infiltration of a greater portion of the rain falling on the area than would occur with conventional paving. This increased infiltration occurs either through the paving material itself or through void spaces between individual paving blocks known as pavers. Pervious paving systems are divided into three general types. They are porous paving, permeable pavers with storage beds, and permeable pavers without storage beds. Porous paving and permeable pavers with storage bed systems treat the stormwater quality design storm runoff through storage and infiltration. Therefore, these systems have adopted TSS removal rates similar to infiltration structures. Care must be taken in the use of pervious systems to avoid subgrade instability and frost related deterioration.

- **Sand Filters**

A sand filter consists of a forebay and underdrained sand bed. It can be configured as either a surface or subsurface facility. Runoff entering the sand filter is conveyed first through the forebay, which removes trash, debris, and coarse sediment, and then through the sand bed to an outlet pipe. Sand filters use solids settling, filtering, and adsorption processes to reduce pollutant concentrations in stormwater. The adopted TSS removal rate for sand filters is 80 percent.

- **Vegetative Filters**

Vegetated filter strips are engineered stormwater conveyance systems that treat small drainage areas. Pollutants suspended in the runoff or attached to the suspended soil particles are removed by filtration, absorption and gravity sedimentation.

A vegetative filter is an area designed to remove suspended solids and other pollutants from stormwater runoff flowing through a length of vegetation called a vegetated filter strip. The vegetation in a filter strip can range from turf and native grasses to herbaceous and woody vegetation, all of which can either be planted or indigenous. It is important to note that all runoff to a vegetated filter strip must both enter and flow through the strip as sheet flow. Failure to do so can severely reduce and even eliminate the filter strip's pollutant removal capabilities. The total suspended solid (TSS) removal rate for vegetative filters will depend upon the vegetated cover in the filter strip.

- **Wet Ponds**

A wet pond is a stormwater facility constructed through filling and/or excavation that provides both permanent and temporary storage of stormwater runoff. It has an outlet structure that creates a permanent pool and detains and attenuates runoff inflows and promotes the settlement of pollutants. A wet pond, also known as a retention basin, can also be designed as a multi-stage facility that also provides extended detention for enhanced stormwater quality design storm treatment and runoff storage and attenuation for stormwater quantity management. The adopted TSS removal rate for wet ponds is 50 to 90 percent

depending on the permanent pool storage volume in the pond and the length of retention time provided by the pond.

Each of these structures has advantages and disadvantages to manage stormwater. As previously noted Matawan is a fully developed community and anticipates the majority of new construction as residential infill development.

LAND USE/ BUILD-OUT ANALYSIS

Figure 4 illustrates the existing land use in the Borough based on the 1995/1997 GIS information from the NJDEP. As previously stated, the Borough has significantly less than one square mile of developable or vacant land, and therefore this MSWMP does not include a Land Use/Build-Out Analysis. Figure 7 illustrates the Hydrologic Units (HUC-14s) and Figure 5 shows the environmentally constrained lands including wetlands, flood areas, and open water.

MITIGATION PLAN

This mitigation plan is provided for proposed development or redevelopment projects that seek a variance or exemption from the stormwater management design and performance standards set forth in this MSWMP and N.J.A.C. 7:8-5.

MITIGATION PROJECT CRITERIA

To grant a variance or exemption from the stormwater regulations, new development and redevelopment plan applications must propose a mitigation project affecting the impacted sensitive receptor and located within the same drainage basin as the proposed development/redevelopment project. Proposed mitigation projects must provide for additional groundwater recharge benefits, protection from stormwater runoff quantity or quality from previously developed property that does not currently meet the design and performance standards outlined in this MSWMP.

The proposed mitigation project must be completed for the performance standard for which the variance or exemption is requested. Performance standards must ensure the long-term maintenance of the approved mitigation system, which include the maintenance requirements under Chapters 8 and 9 of the NJDEP BMP Manual. The Borough does not anticipate granting variances or exemptions for "major developments" until a detailed mitigation plan is developed and approved. The Borough will consider granting variances or exemptions for "major developments" subject to the following NJDEP and local requirements:

1. The Developer shows that literal compliance is technically impractical or presents a substantial economic hardship.
2. The project must be within the same area that would contribute to the receptor impacted by the project. Note that depending on the specific performance standard waived, the sensitive receptor and/or the contributory area to that receptor may be different. If there are no specific sensitive receptors that would be impacted as the result of the grant of the waiver/exemption, then the location of the mitigation project can be located anywhere

within the Borough, and should be selected to provide the most benefit relative to an existing stormwater problem in the same category (quality, quantity or recharge).

3. Legal authorization must be obtained to construct the project at the location selected. This includes the maintenance and any access needs for the project in the future.
4. The project should be close to the location of the original project, and if possible, be located upstream at a similar distance from the identified sensitive receptor. This distance should not be based on actual location, but on a similar hydraulic distance to the sensitive receptor. For example, if the project for which a waiver is obtained discharges to a tributary, but the closest location discharges to the main branch, it may be more beneficial to identify a location discharging to the same tributary.
5. For ease of administration, if sensitive receptors are addressed, it is preferable to have one location that addresses any and all of the performance standards waived, rather than one location for each performance standard.
6. It must be demonstrated that implementation of the mitigation project will result in no adverse impacts to other properties or the environment.
7. Mitigation projects that address stormwater runoff quantity can provide storage for proposed increases in runoff volume, as opposed to a direct peak flow reduction.

DEVELOPER MITIGATION PLAN REQUIREMENTS

Proposed projects shall have Mitigation Plans submitted to the Borough for review and approval prior to granting final approval for site development. Developers should include the following in a Mitigation Plan:

- Mitigation Project Name, Owner name and address, Developer name and address, Mitigation Project Location, Drainage Area, Cost Estimate;

- Proposed Project and Mitigation Project Descriptions, Proposed mitigation strategy and impact to sensitive receptor. Descriptions should include what is being impacted, how it is impacted, what is being mitigated and how;
- Sensitive Receptor: Identify the sensitive receptor(s) related to the performance standard from which a waiver is sought. Demonstrate that the mitigation site contributes to the same sensitive receptor;
- Legal authorization required for construction , maintenance, and access;
- Responsible Party including: a schedule of required maintenance or maintenance plan, who will perform the maintenance, proposed cost of maintenance, and how it will be funded;
- All other permits required for construction of the mitigation project;
- Cost estimate of construction inspection; and
- Reason a waiver or exemption is required and supporting evidence.

Due to the minimal amount of vacant or developable land available, it is anticipated that the majority of the mitigation projects proposed will result in retrofitting/rehabilitation of existing stormwater facilities and natural infrastructures. Any applicant seeking relief via a mitigation option shall provide such relief that is equal to or greater than the parameter being sought for relief. Mitigation options shall be quantifiable in order to be compared to that being substandard on the proposed site. More detailed information may be available from the Borough or the Borough Engineer's office.

It is the developer's responsibility to provide a detailed study of any proposed mitigation project, and provide the Borough with a proposed mitigation plan for review and approval. Mitigation projects should meet all applicable safety, design and performance standards. Approval of the mitigation option will be under the sole discretion of the Board based on calculations provided by the applicant and reviewed by the Board's professional consultants. The applicant will be required to submit an alternative mitigation option if one listed below is not suitable or the Board deems the selected option not applicable.

Water Quality

- Lake Lefferts: Sediment removal (dredging & installation of BMPs to limit pollutant loading)
- Lake Matawan: Sediment removal (dredging & installation of BMPs to limit pollutant loading)
- Sanitary Sewer Repairs to decrease pollutant loading in areas identified in the June 1997 *Smoke Testing Report*. These repairs include manhole lining, sanitary sewer replacement NJ State Highway 34. Also, the early investigation and repair of possible connections between storm sewer system and the sanitary sewer system.

Water Quantity

- Union Street near Aberdeen Road is very prone to flooding during storm events.

Groundwater Recharge

- Sanitary Sewer Repairs to decrease the infiltration of groundwater into the sanitary sewer, and increase groundwater recharge, in areas identified in the June 1997 *Smoke Testing Report*. These repairs include manhole lining, sanitary sewer replacement on NJ State Highway 34 and investigation and repair of possible connections between storm sewer system and the sanitary sewer system.

RECOMMENDATIONS

The following are additional recommendations associated with this Stormwater Management Plan Element of the *Master Plan*:

- ❑ ***Recommendation A: Encourage the Planning Board and Borough Council to review, discuss, update and amend the Borough's existing development ordinances to be in compliance with the design, performance and safety standards outlined in this MSWMP and in the NJDEP's stormwater regulations.***

Portions of the existing development ordinances are inconsistent with recently adopted New Jersey Department of Environmental Protection (NJDEP) Stormwater Management Regulations and the NJDEP's *Stormwater Best Management Practices Manual*. Some of these inconsistencies are identified in the Stormwater Management Strategies section above. The Borough should update their existing regulations to be in conformance with these regulations and to eliminate inconsistencies or conflicts.

- ❑ ***Recommendation B: Educate residents on the impacts of the overuse of fertilizers and good fertilizer maintenance practices.***

As stated in the Stormwater Management Strategies section above, the overuse of fertilizers has a significant detrimental impact on surface water bodies and groundwater. The Borough should work with the NJDEP to educate residents and lawn care or landscaping professionals on these impacts and encourage them to use techniques to create a “green lawn” without over-fertilizing and/or to convert lawn areas to other kinds of vegetation that do not require fertilization and other chemical treatments. Many lawn services also “overspray” fertilizer onto roadways and adjacent properties. The Borough should investigate methods to minimize the application of fertilizers beyond property lines.

□ ***Recommendation C: Evaluate the need to adopt a Stream Corridor Buffer Ordinance.***

The NJDEP Stormwater Regulations requires any development with more than 1 acre of disturbance or ¼ acre of impervious coverage to provide a 300-foot Buffer along a Category 1 stream from the center line of the stream. Though waterbodies within the Borough’s boundaries are not listed as Category 1 streams, there are sections of Category 1 streams that flow through the Borough. Matawan should evaluate the need to adopt stream corridor buffers along tributaries of Category 1 waterways.

□ ***Recommendation D: Seek to ensure the proper inspection, monitoring, and maintenance of all stormwater management facilities and develop strategies for all existing and future maintenance and improvements.***

Stormwater facilities require regular maintenance to ensure effective and reliable performance. Failure to perform the necessary maintenance can lead to diminished performance, deterioration and failure. In addition, a range of health and safety problems, including mosquito breeding and the potential for drowning, can result from improperly maintained facilities. To minimize these risks, the Borough should implement a procedure for regular inspection, monitoring, and maintenance of Borough owned stormwater facilities.

Additionally, there are a number of privately maintained stormwater facilities within the Borough. The Borough should work with the various property owners, residents and business owners to identify maintenance and/or improvement needs and develop strategies for regular inspection and maintenance of these facilities. During this investigation, the Borough should evaluate the merits of creating a “back charge” to pay for maintenance of existing BMPs should owners not comply with the continued maintenance requirements.

The Borough should also encourage the use of low impact design methods and non-structural strategies that require less maintenance.

-
- ***Recommendation E: Evaluate the installation of sediment traps at both Lake Lefferts and Lake Matawan.***

Both lakes are known to have sedimentation issues the Borough should consider the installation of sediment traps, which are BMPs designed to prevent the flow of sediment into the lakes. The Borough should also investigate funding options for possible installation of these BMPs.

REFERENCES

Borough of Matawan. *Draft Matawan Borough Master Plan*. May 1999.

Borough of Matawan. *Borough of Matawan Housing Element and Land Use Plan*. January 2003

Borough of Matawan. *Re-examination Report: Borough of Matawan Housing Element and Land Use Plan*. 2004

Linsley, Ray K., Franzini, Joseph B., Freyber, David L, and George Tchobanoglous. *Water resources Engineering*. 4th ed. New York, New York: Irwin McGraw-Hill, 1992

Monmouth County Board of Health, Letter Report about Lake Matawan coloration, June 7, 1988.

Monmouth County Planning Board, *Monmouth Coastal Watersheds WMA 12, Bayshore Subwatershed Region, Issues List from Regional Surveys*. Freehold, New Jersey, Nov. 2001.
New Jersey Department of Environmental Protection, Division of Watershed Management *New Jersey Stormwater Best Management Practices Manual* April 2004.

New Jersey Department of Environmental Protection, Division of Watershed Management. *Tier A Municipal Guidance Document: NJPDES General Permit No. NJ0141852*. April 2004.

Schoor DePalma. *Borough of Matawan Smoke Testing Report*. June 1997.

United States Census Bureau. Profile of General Demographic Characteristics: 1990, 1990

United States Census Bureau. Profile of General Demographic Characteristics: 2000, 2000.

United States Census Bureau. 1990 Summary Tape File (STF 1), 1990.

Kern River Connections. The Hydrologic Cycle.
<<http://www.creativille.org/kernriver/watershed.htm>>

French, Mark and Jeffery Hoffman. Ground-Water-Recharge Rates and Selected Open Space in the Rancocas, Pennsauken, and Cooper Watersheds, New Jersey. New Jersey Department of

Environmental Protection. < <http://www.state.nj.us/dep/njgs/pricelst/ofmap/ofm32.pdf>> 2000.

New Jersey Administrative Code N.J.A.C. 7:14A-25: NJPDES Stormwater Rules. Jan. 5, 2004.

New Jersey Administrative Code, N.J.A.C. 7:8, Stormwater Management Rules, Feb. 2, 2004.

New Jersey Department of Environmental Protection. *The Ambient Biomonitoring Network Watershed Management Area 12, 13, 14, 15, and 16, Atlantic Region*. March 2001. (<http://www.state.nj.us/dep/wmm/bfbm/>).

New Jersey Department of Environmental Protection. List of Category One Streams, Lakes and Reservoirs <http://www.nj.gov/dep/cleanwater/c1_waters_list.pdf. >

New Jersey Department of Environmental Protection. Division of Watershed Management. Total Maximum Daily Loads. <<http://www.state.nj.us/dep/watershedmgt/tmdl.htm>> Sept. 1, 2004.

New Jersey Department of Environmental Protection. Division of Watershed Management. <<http://www.state.nj.us/dep/watershedmgt/index.htm>> Dec. 15, 2004.

New Jersey Department of Environmental Protection. Stormwater and Nonpoint Source Pollution, <www.njstormwater.org> August 30, 2004.

New Jersey Department of Environmental Protection. Sub-list 1-5, New Jersey's 2004 Integrated List of Water Bodies <<http://www.state.nj.us/dep/wmm/bfbm/>>, June 22, 2004

New Jersey Department of Environmental Protection. <http://www.state.nj.us/dep/wmm/sgwqt/wat/area12-report.htm#area12-3.0>

United States Department of Agriculture, Natural Resource Conservation Service. Hydric Soils – Introduction. <<http://soils.usda.gov/use/hydric/intro.html>> Jan. 24, 2007.

United States Environmental Protection Agency. Imperial Oil Company, Inc./ Champion Chemicals. <http://www.epa.gov/Region2/superfund/npl/0200764c.pdf>> Dec. 2003.

DRAFT

ORDINANCE _____

**AN ORDINANCE OF THE BOROUGH OF MATAWAN
COUNTY OF MONMOUTH, STATE OF NEW JERSEY
AMENDING THE CODE OF THE BOROUGH OF MATAWAN, ORDINANCE 06-22,
LAND USE AND DEVELOPMENT REGULATIONS, BY AMENDING REGULATIONS
FOR THE STORMWATER MANAGEMENT AND CONTROL IN THE BOROUGH OF
MATAWAN, COUNTY OF MONMOUTH**

BE IT ORDAINED by the Borough Committee of the Borough of Matawan, County of Monmouth, State of New Jersey that Ordinance 06-22, Stormwater Management and Control in the Land Use and Development Regulations of the Code of the Borough of Matawan is hereby amended and supplemented as follows:

SECTION 1.

Header is hereby amended and supplemented to as follows:

BOROUGH OF MATAWANN MATAWAN

SECTION 2.

Section 1.2 Scope and Purpose, is hereby amended and supplemented to as follows:

a. Policy Statement

Flood control, groundwater recharge, and pollutant reduction through nonstructural or low impact techniques shall be explored before relying on structural Best Management Practices (BMPs). Structural BMPs should be integrated with nonstructural stormwater management measures and proper maintenance plans. Nonstructural measures include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater. Source control plans should be developed based upon physical site conditions and the origin, nature, and the anticipated loading of potential pollutants. Multiple stormwater management BMPs may be necessary to achieve the established performance standards for water quality, quantity, and groundwater recharge.

SECTION 3.

Section 2.1 Definitions, is hereby amended and supplemented to as follows:

For the purpose of this section, the following terms, phrases words and their derivations shall have the meaning given herein. When not inconsistent with the context, words used in the present tense include future, ~~works~~ words in the plural number include the singular

and words in the singular number include the plural number. The ~~work~~ word “shall” is always mandatory and not merely directory.

SECTION 4.

Section 2.1 Definitions is hereby amended and supplemented to as follows

CAFRA Planning Map, means the geographic-depiction of the boundaries for ~~coastal~~ Coastal Planning Areas, CAFRA Centers, CAFRA Cores ad CAFRA Nodes pursuant to N.J.A.C. 7:7E-5B.3

SECTION 5.

Section 2.1 Definitions is hereby amended and supplemented to as follows:

Major development means any ~~development~~ “development” that provides for ultimately disturbing one or more acres of land. Disturbance for the purpose of this rule is the placement of impervious surface or exposure and/or movement of soil or bedrock or clearing, cutting, or removing of vegetation.

SECTION 6.

Section 2.1 Definitions is hereby amended and supplemented to as follows

Site means the lot or lots upon which a major development is to occur or has occurred.

SECTION 7.

Section 3.1.a.2 General Standards, is hereby amended and supplemented to as follows:

The standards in this ~~Section~~ Ordinance apply only to new major development and are intended to minimize the impact of stormwater runoff on water quality and water quantity in receiving water bodies and maintain groundwater recharge. The standards do not apply to new major development to the extent that alternative design and performance standards are applicable under a regional stormwater management plan or Water Quality Management Plan adopted in accordance with Department rules.

SECTION 8

Section 4.1 General Stormwater Management Requirements for Major Development – is hereby amended and supplemented to as follows:

General Stormwater Management Requirements for Major Development

SECTION 9.

Section 4.1 f Erosion Control, Groundwater Recharge and Runoff Quantity Standards is hereby amended and supplemented to as follows:

1 (b) (i), The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at Section ~~7-1~~, 5 either:

SECTION 10. Severability.

The various parts, sections and clauses of this ordinance are hereby declared to be severable. If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held invalid or unconstitutional by any court or federal or state agency of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portions hereof.

SECTION 11. Repealer.

All ordinances or resolutions or parts of ordinances or resolutions inconsistent herewith are hereby repealed to the extent of such inconsistency

SECTION 12. Effective Date of Ordinance.

This Ordinance shall take effect immediately upon the approval by the County review agency.

Introduced:

Passed:

Adopted:

Honorable Mary Aufseeser, Mayor

CERTIFICATION OF ORDINANCE

I, Jean B. Montfort, Borough Clerk of the Borough of Matawan, County of Monmouth, and State of New Jersey, do hereby certify the foregoing to be a true and correct copy of an ordinance adopted by the Borough Council of the Borough of Matawan on _____.

IN WITNESS WHEREOF, I Have hereunto set my hand and seal of the Borough of Matawan on this _____ day of _____, _____.

JEAN B. MONTFORT, RMC
MUNICIPAL CLERK

H:\Matn\01160\Calculations & Reports\amended stormwater control.doc

APPENDIX

Prepared and Compiled By:



T&M Associates

11 Tindall Road

Middletown, NJ 07748

Phone: 732.671.6400

Fax: 732.671.7365

www.tandmassociates.com