

Master Plan

Borough of North Plainfield Somerset County, New Jersey

Adopted: April 9, 2014

Prepared for:

North Plainfield Planning Board
North Plainfield, New Jersey

Prepared by:

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MASTER PLAN

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Introduction

INTRODUCTION

The Master Plan is a policy statement designed to guide the use of lands within the municipality in a manner which protects the public health and safety and promotes the general welfare. It is a product of the Planning Board; but it is implemented by the Governing Body through the adoption of the land development ordinance, capital improvement plan, redevelopment plans, etc.

The Municipal Land Use Law requires the master plan to include:

1. A statement of objectives, principles, assumptions, policies and standards upon which proposals for the physical, economic and social development of the municipality are based;
2. A land use plan element that considers the statement of objectives, the environmental limitations of the land, existing and proposed land use patterns and existing and proposed airports and boundaries of any airport safety zones. The land use plan must include a statement including standards of population density and development intensity recommended for the municipality; and,
3. A statement indicating the relationship of the municipality's development proposals to: (1) the master plan of contiguous municipalities; (2) the master plan of the County in which the municipality is located: the State Development and Redevelopment Guide Plan (SDRP); and the district solid waste management plan for the County.

The land use plan element is particularly important because the zoning ordinance must be substantially consistent with the land use plan element. The Governing Body may only adopt a zoning ordinance that is inconsistent with or not designed to effectuate the land use plan element and the housing plan element (an optional element of the Master Plan) by an affirmative vote of a majority of the full authorized membership, with the Governing Body's reasons for the ordinance adoption memorialized in a resolution and recorded in the minutes of the meeting.

The Borough's last full-scale master plan was adopted in 1974. The Borough subsequently adopted periodic master plan re-examination reports in 1982, 1988, 1996, 2001, and 2010. The Borough also adopted a Master Plan/Zoning Update for the business districts in 1994, and a Master Plan Land Use Element and Housing Element in 2002. In addition to promoting the intent and purposes of the Municipal Land Use Law, these documents recommended:

- The improvement of the downtown business area through: investment in sidewalks, street furniture, and landscaping; the creation of parking in the form of additional surface lots and parking and the expansion of parking in the rear of commercial properties; the creation of open space; improved signage; maintaining or restoring building facades; and, the creation of a more pedestrian-friendly environment in the downtown area with improved cross walks and measures to slow down traffic;
- The improvement of the Highway Business Zone through improved signage, reducing curb cuts, and the screening of parking areas. Large lot sizes were recommended to attract larger corporate users;
- The need to promote the redevelopment of the Brook Avenue silk factory;
- The need to eliminate conflicts between residential and non-residential development within the downtown area and along Route 22;
- The redevelopment of an area south of Park Place and Jackson Avenue, extending from Duer Street to properties east of Watchung Avenue; and,
- The redevelopment of an area on either side of Route 22 between Grove Street and Watchung Avenue, extending from Dupont Street and Jennings Lane.

The 1974 master plan established goals for the Borough which have been subsequently embellished to include:

- Promote a balanced variety of residential, commercial, recreational, public and conservation uses and all other land uses;
- Promote the preservation of natural systems and environmentally sensitive areas, particularly wetlands and flood hazard areas;
- Provide adequate community facilities and services in order to maintain the quality of life for existing and future Borough residents;
- Encourage resource recovery and the recycling of recyclable materials;
- Develop senior housing at appropriate locations to meet the needs of the Borough population;
- Continue to meet the Borough's affordable housing needs;
- Preserve and enhance existing stream corridors and tributaries by providing linkages among parks where possible;
- Relate the density of housing development to the carrying capacity of the land, roads and utility infrastructure capabilities;
- Maintain a proper balance between land uses so that the Borough's population is adequately served by a sound employment base and sufficient services;
- Protect residential neighborhoods from commercial, industrial, office and other non-residential encroachments;

- Provide adequate public facilities for the Borough's population, including schools, parks, libraries, recreation/open space, fire, police, and solid waste disposal;
- Provide an opportunity for the development of housing of various types and sizes, to meet the needs of people at various stages of their life cycle;
- Encourage adequate affordable housing opportunities, especially for young families and senior citizens;
- Encourage mixed-use development where appropriate, such as residential uses within selected commercial/retail zones;
- Ensure that new development on vacant or underutilized land is in keeping with existing neighborhood character;
- Preserve open space and protect natural, cultural and historic resources;
- Provide a systematic plan for the acquisition of brook front and upland parcels for additional open space and parkland;
- Provide social services adequate to meet the needs of elderly and handicapped residents, as well as increased need for child care;
- Encourage the revitalization of the downtown area of the Borough through partnerships between the public and private sectors;
- Continue to provide adequate infrastructure to meet the needs of the community;
- Provide for efficient and safe traffic circulation in the Borough. This should be achieved while the aesthetic quality is maintained, especially along residential streets;
- Optimize alternative modal choices within the Borough, in particular to enhance access to buses, jitneys, taxis, walking and bicycles, etc.;
- Protect lives and property from flood damage through storm water control and management;
- Encourage the redevelopment of brownfield sites in the Borough; and,
- Improve the development approval process by providing all zoning, subdivision and land use procedures under one comprehensive land development ordinance.

In 2010, the Borough completed its most recent Master Plan Re-examination Report. The Re-examination Report included the following recommendations:

- It is recommended that the Borough Planning Board conduct a comprehensive update of the Borough Master Plan. This update would include the preparation of comprehensive basic studies, which typically includes all aspects of the community including land use, housing, circulation and transportation, community facilities and services, infrastructure and utilities, environmental conditions, etc. A wide range of geographic information systems data (GIS) at the county, state and federal level is available, which should be included in the basic studies update.

The basic studies update would provide the foundation upon which the Borough could ideally address current issues and policy initiatives, as well as provide the basis for a comprehensive update to the Borough's land development ordinances.

- It is apparent that the stability of the business community is an essential element of the Borough. It is recommended that the Borough continue to implement 'streetscape' improvements in the various local business districts, including Somerset Street and Watchung Avenue. It is recommended that the Borough investigate the feasibility of mixed-use residential and commercial development, including appropriate portions of Watchung Avenue, Grove Street, and Duer Street. These mixed uses would typically comprise retail use and/or office use on the ground level, with residential use and/or office use above. The implementation of mixed-use development should include consideration for on-site parking and evaluation of any impacts to the surrounding neighborhood associated with on-street parking.
- It is recommended that commercial zoning along the US Route 22 corridor be evaluated in terms of the uses permitted and associated yard and area requirements. The Route 22 business districts comprise a variety of highway commercial uses which generate significant traffic in the area, affecting circulation on many of the Borough's roadways as well as nearby residential use. In the recent past, traffic safety issues have become a great concern in the vicinity of Watchung Mall, located along Route 22. It is recommended that a traffic accident analysis be performed in vicinity of the mall to address traffic safety concerns. It is important to note that the New Jersey Highway Access Management Code regulates access and traffic issues for the various uses directly accessing Route 22. The Borough should work closely with the New Jersey Department of Transportation when addressing traffic circulation or traffic safety issues.
- In an effort to further ensure a stable tax base for North Plainfield and to minimize conflicts between residential and non-residential use along and adjacent to the Route 22 highway corridor, it is recommended that the Master Plan update include an evaluation of existing land use and existing zoning along the corridor. Recommendations should be made concerning expansion of non-residential zoning along the corridor, where appropriate, while ensuring compatibility with nearby residential uses and zoning.
- In recent years, housing conditions in the Borough have become a primary concern, particularly in terms of the condition of older, sub-standard housing and over-crowded housing. The issue of over-crowding is particularly important in the rental apartments located throughout Borough, which is demonstrated in this Reexamination Report. The Borough should address overcrowding conditions in the community.
- In an effort to provide affordable housing opportunity to Borough and area residents, the Borough should continue to pursue Substantive Certification in accordance with the adopted rules of the Council On Affordable Housing.

- In light of the need to conserve energy and prevent the adverse environmental impacts associated with climate change, it is recommended that the Borough Master Plan include an “Energy Conservation Element.” The Borough should evaluate current energy utilization patterns associated with Borough-owned buildings and facilities, and various modes of transportation (i.e. municipal vehicles and equipment) in an effort to reduce harmful fossil fuels emissions and to promote “Green” technology. The Energy Conservation Element should address energy efficient strategies and tools for implementation in both the private and public sector, specifically including existing development, proposed development and redevelopment opportunities throughout the Borough. The Energy Conservation Plan should include recommendations for the use of alternative fuels and energy sources. The Borough should also continue participation in the Somerset County Energy Audit Program, and should seek out supportive guidance and/or program funding resources at the state and federal level in the preparation of the Energy Conservation Element.
- With most of the Borough presently developed, much of the land use development activity in the Borough concerns building additions/expansion and associated yard variances. It is recommended that the Borough examine all the zone district regulations in the Borough to determine the appropriateness of permitted uses, residential densities, and yard and area requirements established for each zone. An additional concern is the ‘fractured’ nature of the Borough’s development ordinances, which have been amended and supplemented over time, resulting in a somewhat fragmented regulatory format. The Borough should review all its land development ordinances with the intent to revise and consolidate the Borough’s ordinances as necessary.
- At present, the Borough Land Development ordinance regulates cellular towers in the Land Use Development Ordinance. The Borough Planning Board is concerned that the regulations for such use may not be enforceable, as applied. It is therefore recommended that the land use regulations for cellular towers be reviewed and amended as necessary to ensure proper, enforceable regulation of such uses in the Borough.
- The Borough’s long-established Historic District Residence Zones have served to regulate many older homes in the District, which provide a rich historical significance to the Borough. It is recommended that the Borough Historic Commission and Borough Planning Board re-evaluate the intent of the ordinance and regulations for such use, thereby continuing to ensure that the individual homes and the overall character of the District is properly protected and preserved. A comprehensive planning approach for the preservation and enhancement of historic homes and the overall historic character of the Borough is necessary. An Historic Preservation Element should be included as part of the comprehensive Master Plan update. This element to the Master Plan should establish appropriate goals and objectives to ensure that all places of historic significance in the Borough are preserved and protected, and should also include a Borough-wide inventory of all residential and non-residential structures of historic significance.

- The Borough should continue to participate in the Somerset County Economic Development Incentive Program as a means to revitalize the Borough's local business districts. The continued support of local businesses will serve to enhance the viability of the local business districts, thereby meeting the needs of Borough residents and the general public. The Master Plan Land Use element should include a detailed 'Business District Plan' to provide a comprehensive approach to economic revitalization of the local business districts.
- In an effort to revitalize portions of the downtown business districts, it is recommended that the Borough Master Plan evaluate the districts and other areas of the Borough for the feasibility of redevelopment or rehabilitation in accordance with the criteria established in the New Jersey Redevelopment and Housing Law (N.J.A.C. 40:12A-1et.esq.).
- The Circulation Plan element of the Borough Master Plan should be revised to include a coordinated effort for the provision of mass transit bus service along key routes within the Borough, including major thoroughfares through the local business districts and residential zone districts. The Circulation element should emphasize the need to promote pedestrian activity, as well as address pedestrian safety considerations throughout the Boroughs residential and non-residential zones.
- The updated Circulation Element should include an evaluation of local and inter-municipal roadways with respect to efficiency of circulation and traffic congestion. Roadways and intersections experiencing high levels of congestion or accident rates should be evaluated for possible measures to alleviate such conditions. In the vicinity of the Route US 22 corridor, it is recommended that the impacts of highway traffic patterns upon local streets be evaluated and that NJDOT should be consulted in an effort to minimize such adverse impacts or resolve traffic conflicts between highway and local street circulation. Any consideration to rezone land along the Route 22 corridor for non-residential use should also include an evaluation of the influence of non-residential traffic into residential neighborhoods.
- While a specific area of concern has been noted for the portion of Walnut Street between Wilson Avenue and Grove Street, it recommended that an evaluation of all existing local public roadways be conducted to determine the adequacy of roadways in the Borough to serve their proper function and purpose. Rights-of-way should be evaluated in terms of adequacy for proper roadway widths, including consideration for on-street parking, utilities, and sidewalks (where warranted). After appropriate study of local roadways with respect to circulation, right-of-way access to adjoining properties, and proximity to local land use activities, recommendations should be made for specific improvements to local roads and intersections, or where it is determined that vacation of a local street is necessary and would promote the general welfare of the community.
- The Borough Master Plan should address on-street and off-street parking conditions in the Borough in an effort to improve traffic circulation, while meeting the parking demands of residential and non-residential use.

- To ensure adequate opportunity for Borough residents and visitors to the Borough to enjoy all municipal facilities and services offered, it is recommended that the Borough Master Plan include a study for the placement of signage at key locations throughout the Borough to direct the general public to Borough and other public facilities, including parks, schools, Borough library, Vermeule Community Center, town hall, etc. Such signage would significantly improve access to these various facilities, while having the added benefit of improving traffic circulation throughout the Borough.
- The Borough Master Plan should include a “Recreation, Open Space & Environmental Protection Plan” element, to address these three crucial issues in the community. The provision of additional recreational opportunity, in the form of open space (passive) or actual ‘active’ park land would enhance the residential areas of the Borough, while meeting the needs of Borough residents. Stream protection corridors would serve to protect environmentally sensitive land and flood plain areas, while also providing the opportunity for a ‘river walk’ along the Green Brook. Preservation of these sensitive lands would also enhance the environmental quality of the stream waters, while also protecting associated wildlife habitat.

In late 2011, the Borough authorized a new master plan that includes the mandatory statement of goals and objectives, the mandatory statement regarding the relationship of development proposals to adjoining municipalities and the SDRP and the mandatory land use plan element. In addition, the Borough authorized: a housing plan element; a circulation plan element, a utility plan element, a recreation and conservation plan element, and a green buildings and environmental sustainability plan element.

This master plan begins with an inventory of existing conditions (basic studies) that will enable the Planning Board to assess the Borough’s progress in addressing its previous goals and objectives and to assess its needs going forward. This needs assessment will assist the Board to articulate its vision for the Borough’s future and allow the Board to recommend the steps necessary to move toward that vision in the form of revised goals and objectives and the adoption of the above referenced planning elements.

Basic Studies

BASIC STUDIES

REGIONAL & LOCAL SETTING

The Borough of North Plainfield is a densely developed suburban community located in the greater New York – north New Jersey metropolitan area. The region developed into a major population center during the industrial period in the 19th century, forming a national and international hub for commerce along the eastern seaboard of the United States. The central and northern portions of New Jersey include a wide range of older established urban towns and centers, and more recently developed outlying suburban communities, which formed in the latter half of the 20th century. The region hosts a wide array of interdependent residential, commercial and industrial development, in addition to public and semi-public uses and facilities which serve the local and regional resident population and business community.

The central portion of New Jersey is characterized by a vast transportation network, which in vicinity of North Plainfield includes interstate highways (Route 78, Route 287, Route 80), state highways (Route U.S. 22, NJ Route 28, New Jersey Turnpike, Garden State Parkway), sub-regional county roadways, and local access roadways. Along with the roadway system, passenger rail (NJTransit, AMTrack), rail freight lines, local and regional air travel facilities (including Newark Liberty International Airport and numerous local/regional airports), provide access throughout the region, connecting urban areas with outlying suburban and rural areas, as well as serving a broad commuter network to and from major employment centers. Plate 1 illustrates the regional location of the Borough.

North Plainfield is located on the eastern edge of Somerset County, New Jersey, near urban and suburban communities located in Union County and the northern portion of Middlesex County. The Borough is located directly adjacent to Watchung Borough and Green Brook Township, two suburban communities to the north and west, respectively, and the City of Plainfield, an urban community located to the southeast along the Green Brook. Plate 2 illustrates the location of the Borough and these surrounding communities.

PHYSICAL CHARACTERISTICS & ENVIRONMENTAL CONDITIONS

Topography & Flood Hazard Areas

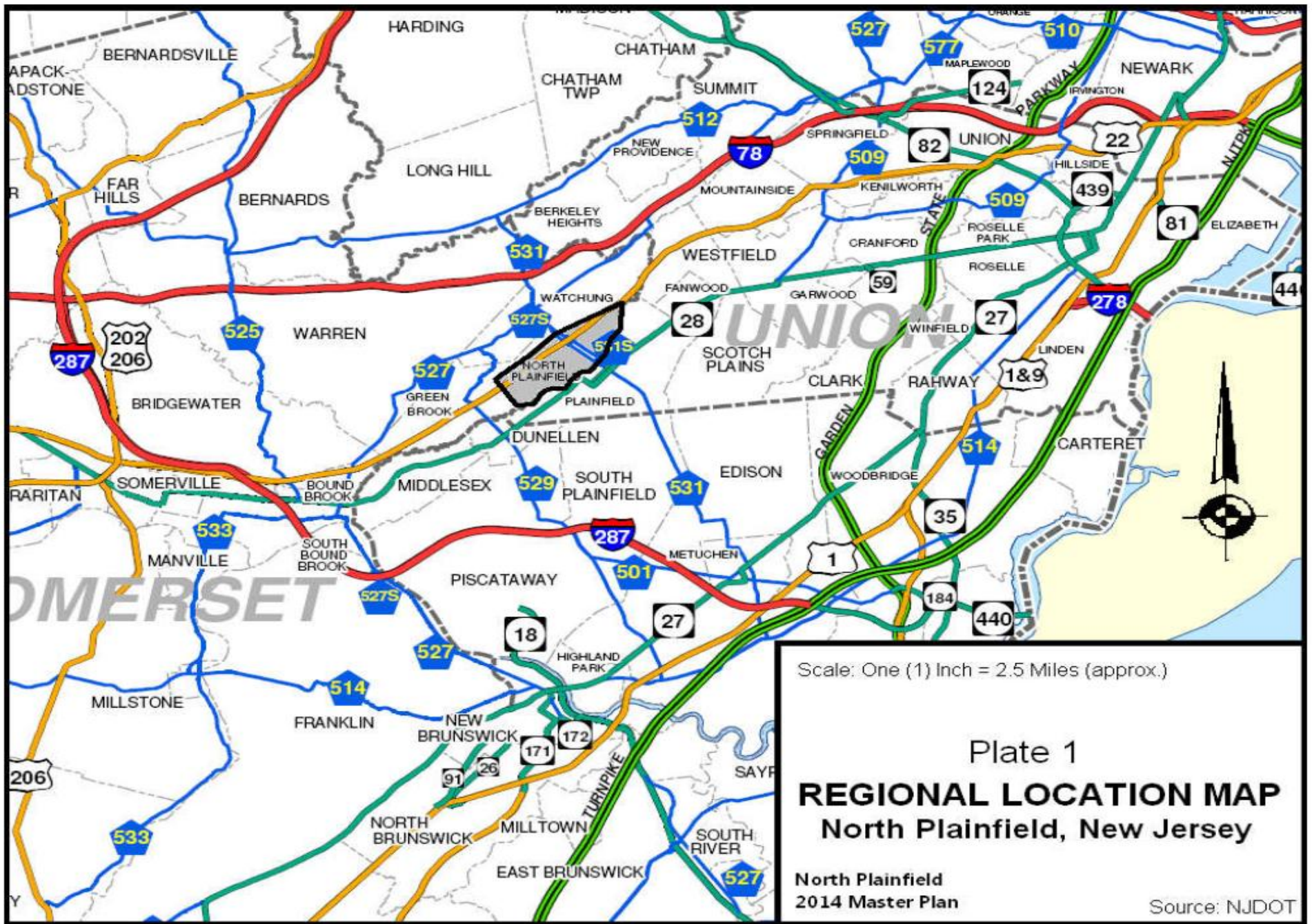
The Borough of North Plainfield and lands to the southwest and northeast are located in the Piedmont Province at the base of the First Watchung Mountain Range. This area is generally characterized by flat terrain, with moderately undulating topography and well-defined drainage stream channels. Low lying areas along the Green Brook and Stony Brook range in elevation from approximately 50 feet (15.2 meters) in the southwestern portion of the Borough to approximately 100 feet (30.5 meters) on the northeasterly portion, while lands approaching the base of the First Watchung Mountain range rise in elevation from approximately 80 feet (24.4 meters) in vicinity of Warfield Road to approximately 100 feet (30.5 meters) in vicinity of Norwood Avenue and Route 22. The highest elevations in the Borough are exhibited along the Borough's northwesterly municipal boundary with Green Brook Township, where elevations range between 100 (30.5 meters) and nearly 200 feet (61 meters).

Plate 3 illustrates the flood hazard areas (100-year Flood Plain) based upon mapping provided by the Federal Emergency Management Agency (FEMA) and topographic contours as described above. As shown, the properties located along Green Brook and Stony Brook are located within flood hazard areas. The map also illustrates areas subject to shallow flooding (0.2% chance of "annual flood hazard").

Soils

Soil conditions in the Borough vary from moderately well-drained sandy loam soils to silt loam soils of varying complexity. Plate 4 presents the soils exhibited in North Plainfield. As shown, Dunellen soils, ranging in slope from 0 to 15 percent comprise the majority of the Borough, particularly in the southwest portion of the town. Amwell and Birdsboro soils account for a large area in the northeasterly portion of the Borough. The Dunellen and Birdsboro soils groups are well-drained and generally have a low depth to high-water table (>4 feet) and a depth to bedrock of greater than five feet. Amwell soils are generally located along the base of the First Watchung Mountain range, and are moderately well-drained with a depth to high-water table between 1-4 feet, and a depth to bedrock ranging from 3-1/2 feet to 5 feet.

The Mount Lucas-Watchung soils group is exhibited along the steeply sloped lands of the First Watchung Mountain range. These soils are gravelly and stony, with a depth to bedrock greater than 5 feet. The depth to seasonable high-water table is between 0-1 feet. Soils groups along the Green Brook, Stony Brook and Crab Brook include the Bowmansville Silt Loam, Parsippany Silt Loam and Rowland Silt Loam. These soils exhibit little or no slope (<3 %) and are frequently flooded. The Rowland soils are located along the Green Brook, and

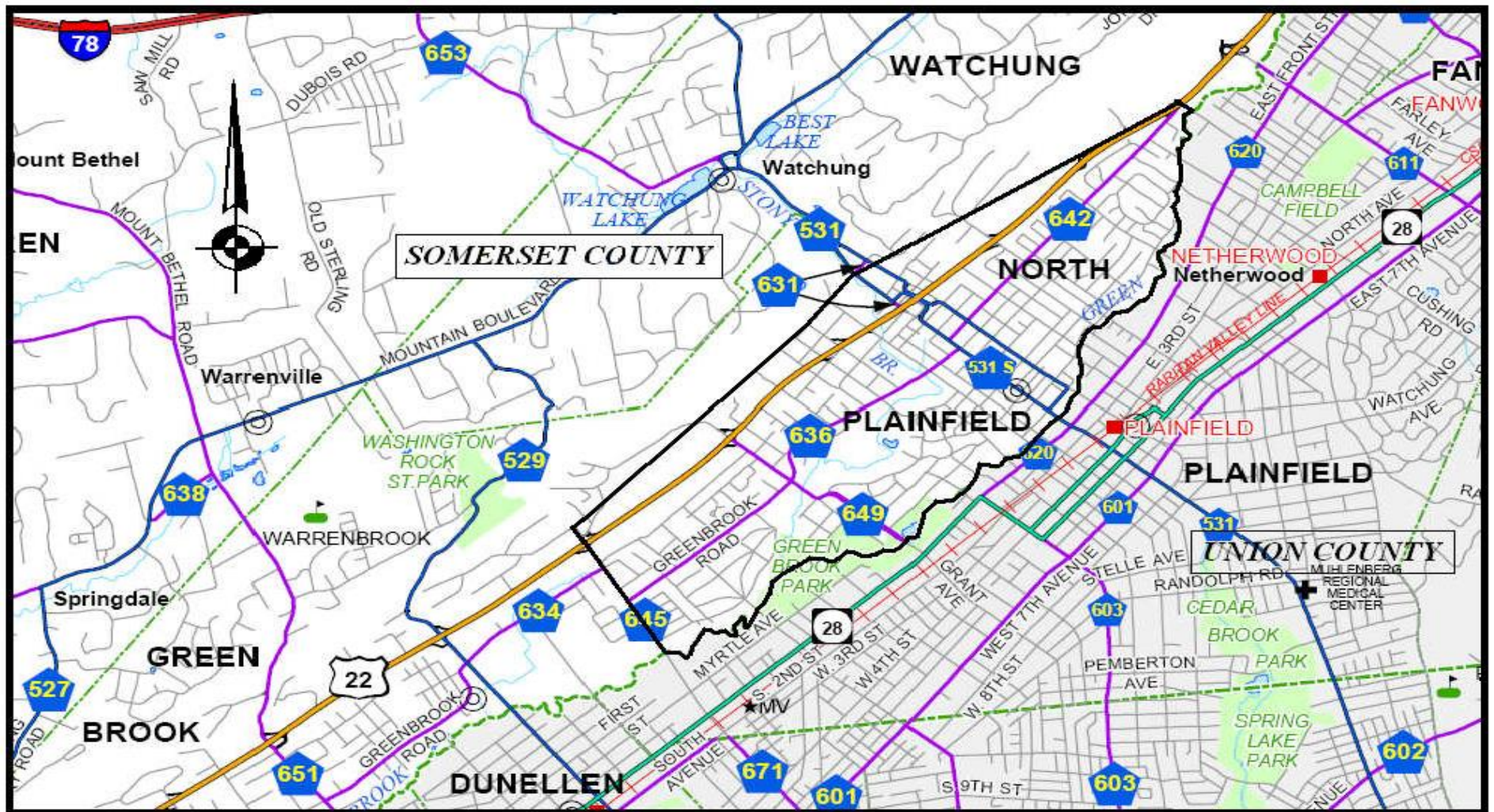


Scale: One (1) Inch = 2.5 Miles (approx.)

Plate 1
REGIONAL LOCATION MAP
North Plainfield, New Jersey

North Plainfield
 2014 Master Plan

Source: NJDOT

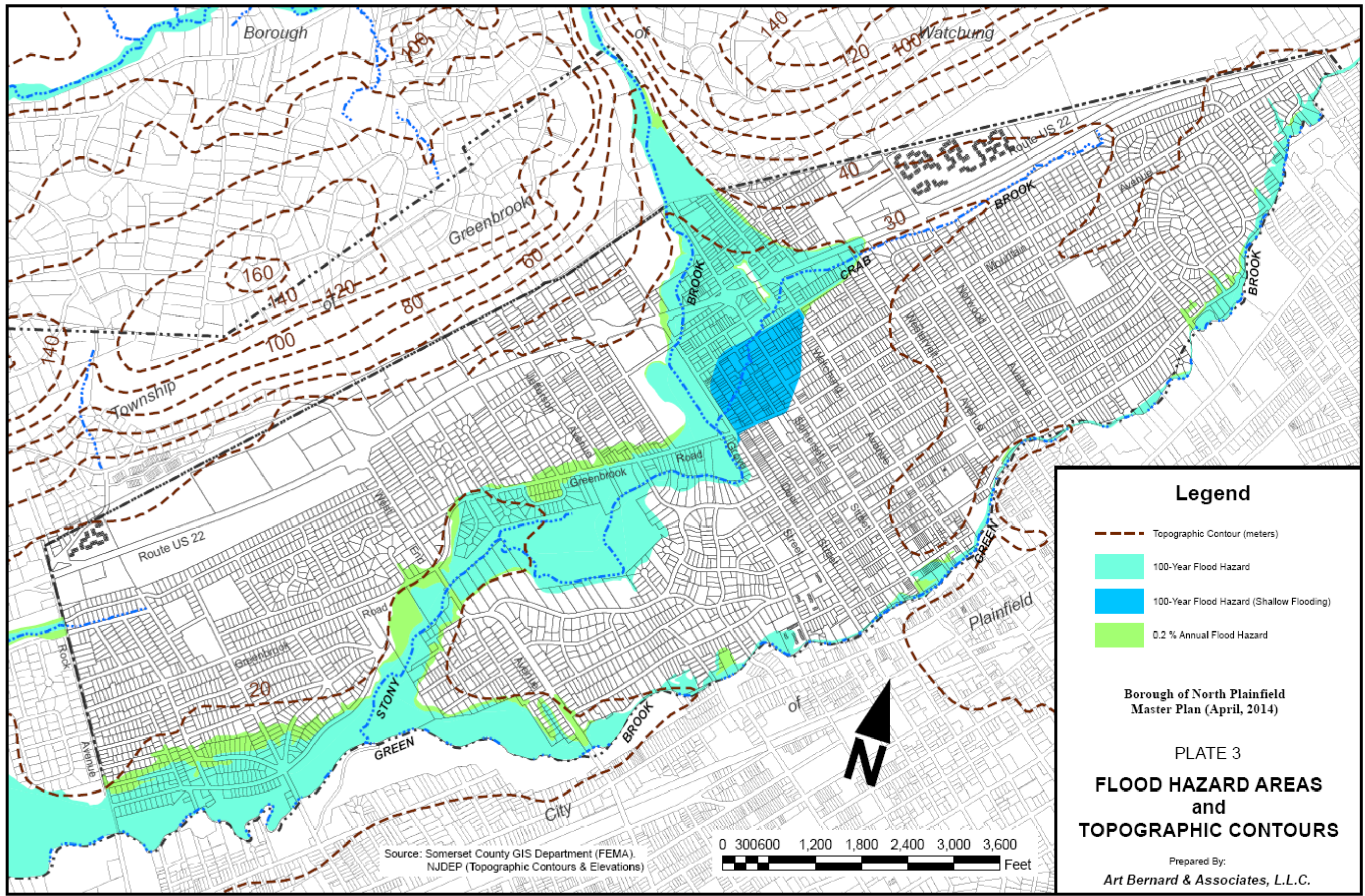


Source: New Jersey Department of Transportation



GRAPHIC SCALE (Miles)

PLATE 2
LOCATION MAP
 North Plainfield, New Jersey
 (Local Setting)



Source: Somerset County GIS Department (FEMA).
NJDEP (Topographic Contours & Elevations)

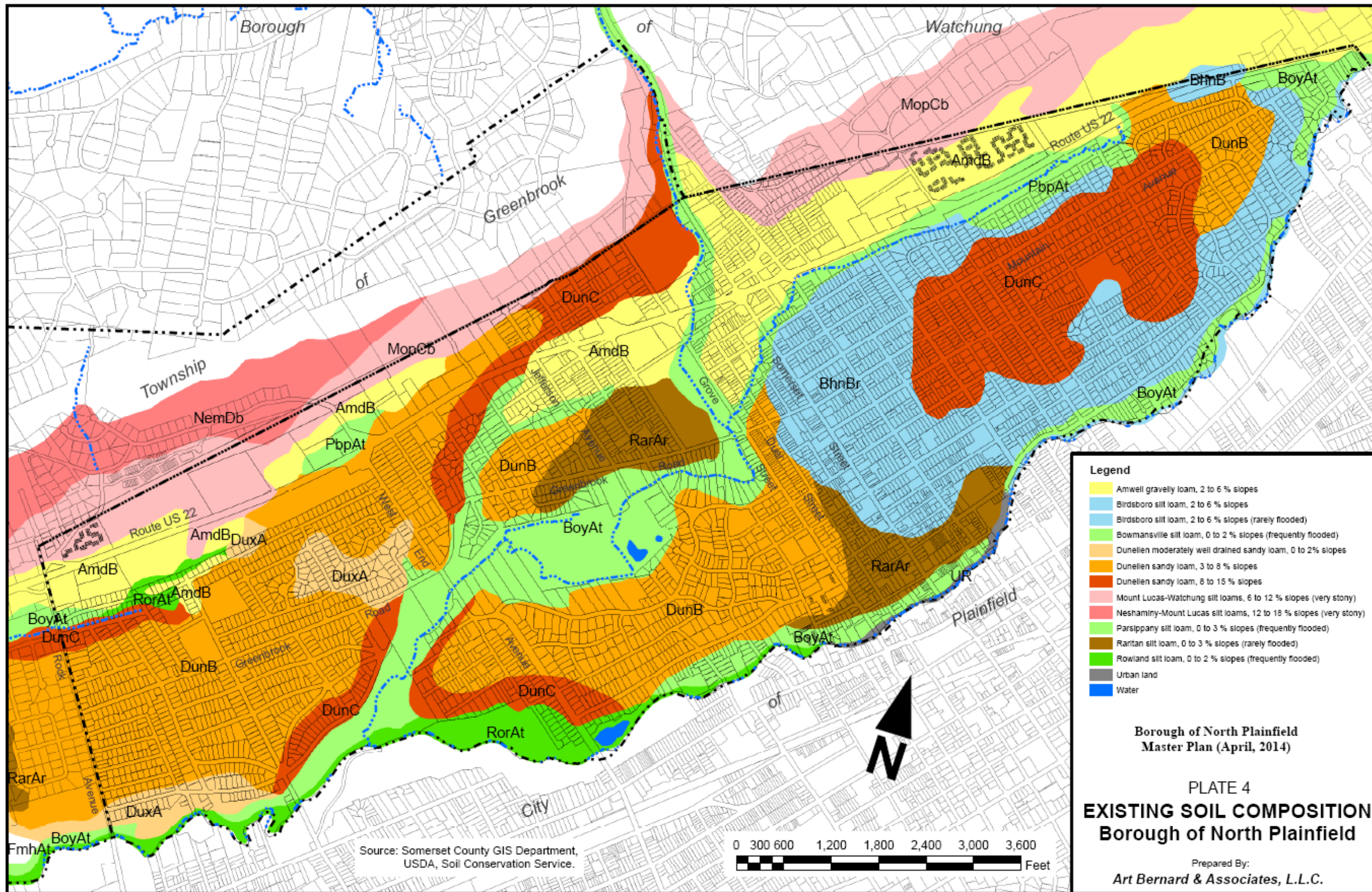
Legend

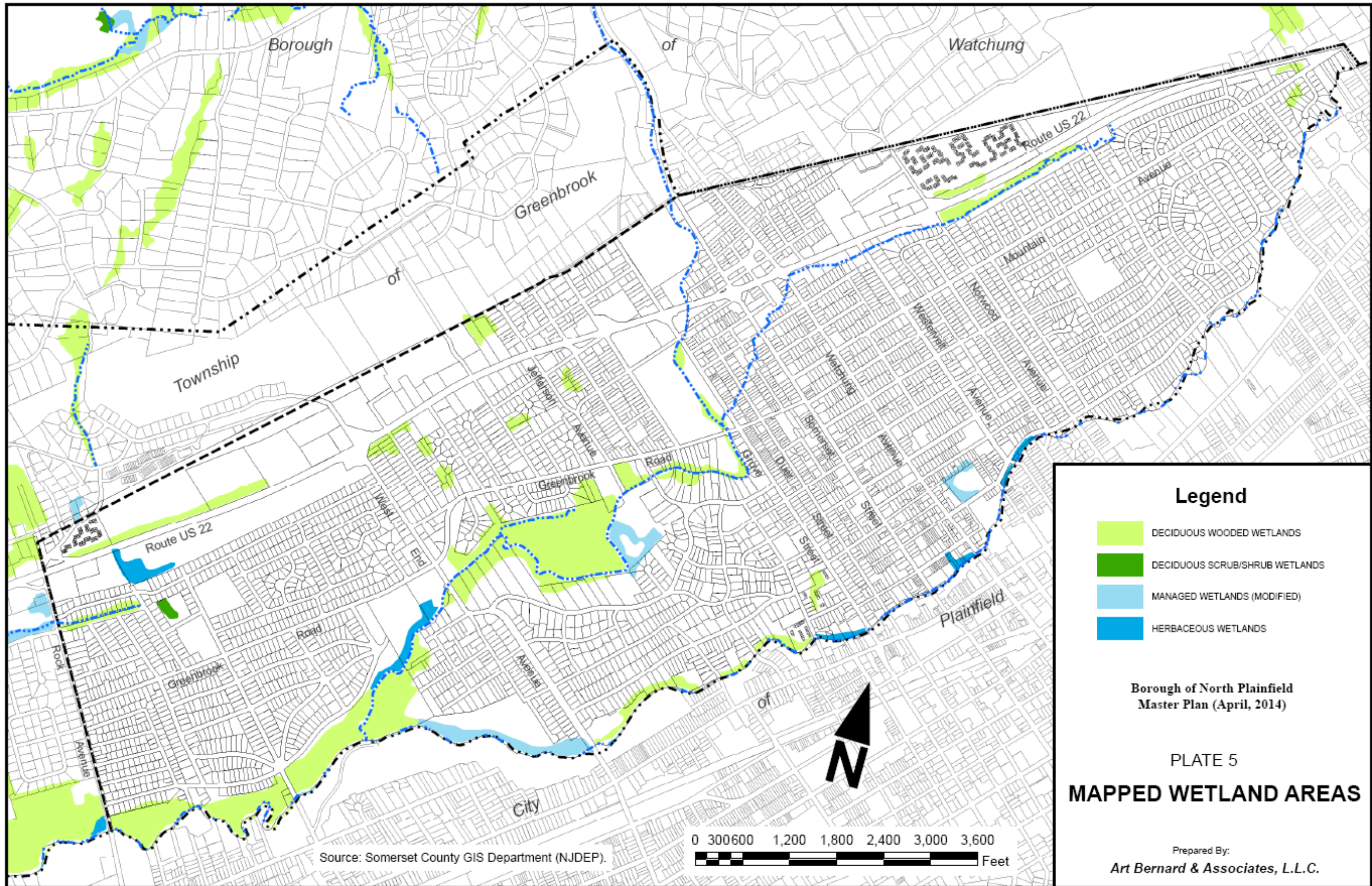
- Topographic Contour (meters)
- 100-Year Flood Hazard
- 100-Year Flood Hazard (Shallow Flooding)
- 0.2 % Annual Flood Hazard

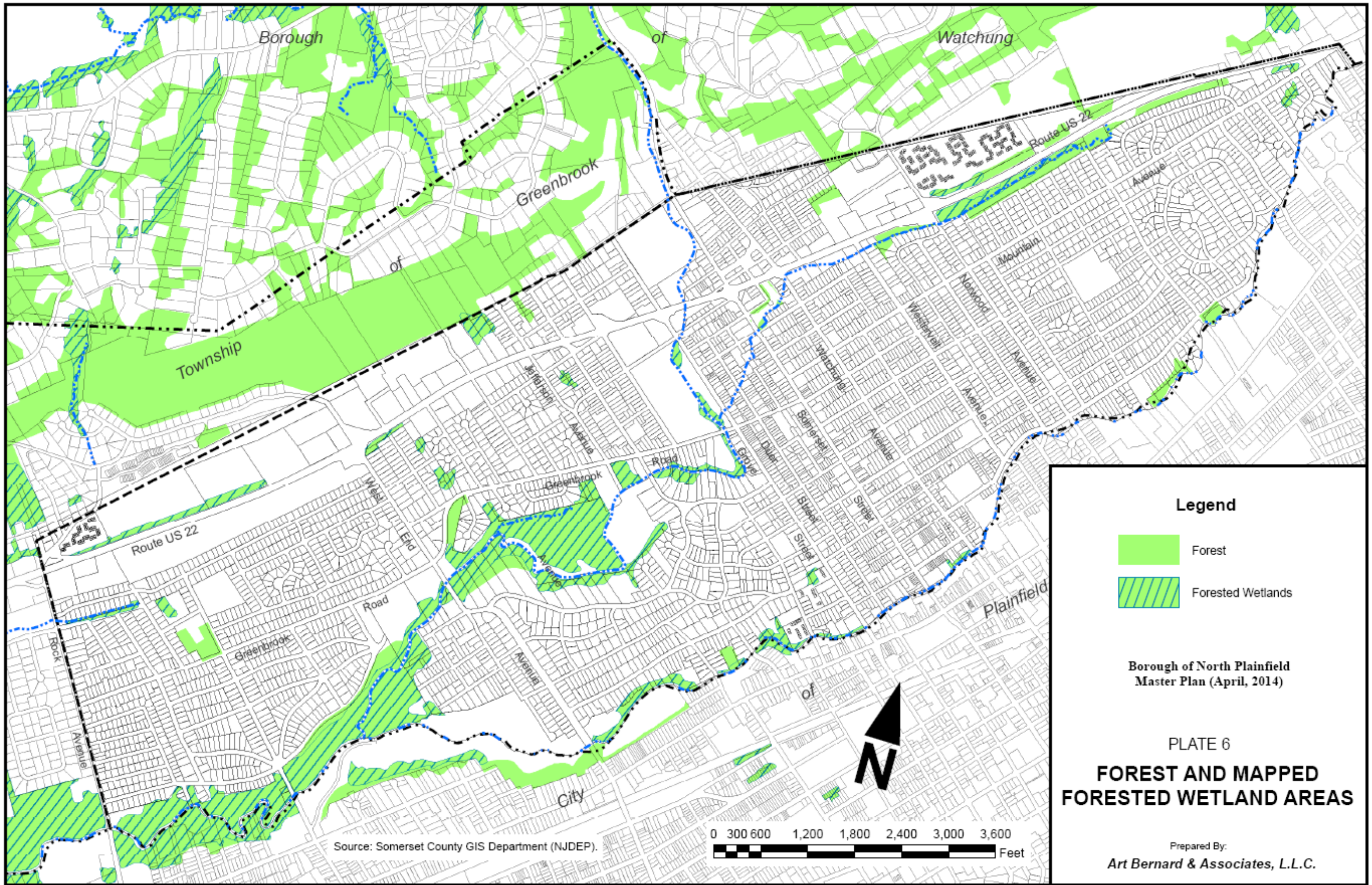
Borough of North Plainfield
Master Plan (April, 2014)

PLATE 3
**FLOOD HAZARD AREAS
and
TOPOGRAPHIC CONTOURS**

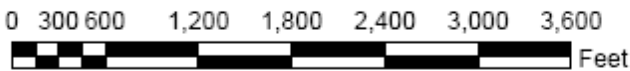
Prepared By:
Art Bernard & Associates, L.L.C.







Source: Somerset County GIS Department (NJDEP).



Legend

- Forest
- Forested Wetlands

**Borough of North Plainfield
Master Plan (April, 2014)**

**PLATE 6
FOREST AND MAPPED
FORESTED WETLAND AREAS**

Prepared By:
Art Bernard & Associates, L.L.C.

have a seasonal depth to high-water table of between 1-3 feet. The Bowmansville and Parsippany soils series are exhibited along the Stony Brook and Crab Brook stream corridors. These soils have a seasonal depth to high-water table of 1-foot or less. With the exception of the soils groups located along the Borough's stream corridors, soil conditions in North Plainfield generally do not present a major constraint to development or redevelopment.

Mapped Wetlands & Forest Areas

Mapped wetland areas and forested areas in the Borough are illustrated on Plate 5 and Plate 6, respectively. As shown on Plate 5, mapped wetlands are predominantly located along the existing stream corridors in the Borough. Plate 6 presents forested areas and forested wetland areas in the Borough. These environmentally sensitive forested areas are also generally located along existing stream corridors and within undeveloped portions of the Borough. Development within or near wetland areas are regulated under the 1987 Freshwater Wetlands Protection Act (NJSA 13:9B-1 et. seq.).

EXISTING LAND USE & ZONING

The Borough of North Plainfield is nearly fully developed, and is predominantly comprised of residential and commercial land uses. This 'near-full' development character has existed since the early 1970's, when the last Borough-wide existing land use study was conducted as part of the 1974 Master Plan. The 1974 Master Plan land use analysis (conducted in July, 1972) determined that the Borough was nearly fully developed, with public and privately developed land (including public rights-of-way and streets) accounting for 94.5 percent of the Borough.

Development in the Borough since the 1970's has primarily included residential and commercial development/redevelopment; and, development of public uses and facilities, including additional park land and expanded municipal facilities (i.e. Community Center). Remaining established development in the Borough comprises older residential, commercial and industrial uses, particularly in the central portion of the community, where some existing older structures and properties exhibit increased wear from continued use and aging. Although the 1996 Borough Master Plan Reexamination Report included a detailed study and recommendations for the redevelopment of the downtown business area, the area remains largely unchanged except for the implementation of the Somerset Street Streetscape Improvements, recent renovation to the municipal building, and provision of the new municipal parking lot (across the street). Given the conditions of certain older properties and structures in the central business area of North Plainfield, it is increasingly apparent that the Borough should investigate the need for rehabilitation or redevelopment of specific land parcel(s) in the central business area.

Existing zoning in the Borough reflects existing land use patterns, with nine individual residential zones and eight business (commercial) zones. In addition, two Historic Residence District Zones encompass the Washington Park Historic District in the central portion of North Plainfield.

Residential zoning reflects the varied nature of dwellings in the Borough, ranging from single-family detached units and multi-family residences, to multi-family rental apartments and condominiums. Commercial business zones are located along the Somerset Street central business area corridor and along the Route 22 corridor. Commercial uses along Somerset Street generally comprise local service and neighborhood oriented commercial uses, while commercial activity along Route 22 typically provides local and regional highway-oriented commercial use. An overview of existing zoning designations and regulations in North Plainfield is provided further in this section of the basic studies update.

Existing Land Use

As part of the basic studies update, a comprehensive analysis of existing land use for the entire Borough was conducted in July, 2012. This update included a thorough investigation of current tax records and maps, as well as field survey of existing land use throughout the Borough. Exhibit 1 provides existing land use in the Borough for July, 2012, including a tally for all land use categories in the Borough, and a breakdown of residential and commercial land use sub-categories. Exhibit 2 provides a comparative analysis of existing land use in 2012, with land use data presented in the 1974 Master Plan (July, 1972). Plate 7 illustrates existing development patterns for the entire Borough, while Plates 7A, 7B, 7C, and 7D detail existing land use in each portion of the Borough, including the central business area along Somerset Street between Duer Street and Watchung Avenue.

As shown on Exhibit 1 and illustrated on Plate 7, the predominant land use in the Borough continues to be residential use, including single-family detached use, two- three- and four-or-more family residences, and multi-family housing (apartments and condominiums). Commercial and industrial development in the Borough is located primarily along the Route 22 commercial corridor and within the Borough's central business area along Somerset Street. Public facilities, public schools and recreational areas are located throughout the Borough, with vacant public lands located along the Green Brook and along the Route 22 right-of-way. Small, privately-owned vacant parcels are located throughout the Borough, with the only large private vacant tract (14.32± acres) located in the central portion of the Borough (former Villa Maria sanitarium site – including undeveloped single family dwelling lots).

Exhibit 1
EXISTING LAND USE
North Plainfield, New Jersey
 July, 2012

<u>Category</u>	<u>Area (acres)</u>	<u>Composite (%)</u>
RESIDENTIAL:	1061.4	57.2%
<i>Single Family Detached Residence</i>	843.7	79.5%
<i>Single Family Attached</i> ¹	33.2	3.1%
<i>Two-Family Residence</i> ²	65.5	6.2%
<i>Three-Family Residence</i>	20.9	2.0%
<i>Four-Family or more Residence</i>	11.6	1.1%
<i>Multi-Family Apartments</i>	86.5	8.1%
COMMERCIAL:	155.3	8.4%
<i>Commercial Service / Retail</i>	147.9	95.2%
<i>(Mixed-Use: Commercial-Residential)</i>	(8.7)	(5.9%)
<i>Business Office / Professional</i>	7.4	4.8%
<i>(Mixed-Use: Office-Residential)</i>	(2.0)	(27.0%)
INDUSTRIAL	4.3	0.2%
SEMI-PUBLIC / INSTITUTIONAL	26.4	1.4%
PUBLIC SCHOOLS	43.2	2.3%
PUBLIC FACILITIES ³	8.5	0.5%
PARKS / RECREATION ⁴	88.7	4.8%
PUBLIC VACANT ⁵	80.2	4.3%
PRIVATE VACANT / UNDEVELOPED ⁶	30.4	1.6%
PUBLIC STREETS / RIGHT-OF-WAY	<u>357.6</u>	<u>19.3%</u>
TOTAL	1856.0	100.0%

Source: Land use survey conducted by consultant, July, 2012.

¹Attached Condominium Units (3 or more units).

²Includes Duplex Condominium Units and Two-Family Residences.

³North Plainfield and Somerset County-Owned Facilities.

⁴Includes Recreational Land Owned by North Plainfield Borough and North Plainfield Board of Education.

⁵Includes Land Owned by North Plainfield, Union County, and the State of New Jersey.

⁶Includes Undeveloped Portion of Former Villa Marie Sanitarium Site (14.32 acres).

Exhibit 2
Comparison of Existing Land Use
Borough of North Plainfield
 July, 1972 vs. July, 2012

LAND USE CATEGORY	July, 1972 ¹		July, 2012 ²	
	Area (acres)	Portion of Boro.(%)	Area (acres)	Portion of Boro.(%)
<u>Residential:</u>	<u>1,109.5</u>	<u>59.8%</u>	<u>1,061.4</u>	<u>57.2%</u>
- Single Family Detached	853.6	46.0%	843.7	45.5%
- Two-Family Residence	104.3	5.6%	65.5 ^a	3.5%
- Three-Family Residence	22.5	1.2%	20.9	1.1%
- Four-Family or more Residence	19.7	1.1%	11.6	0.6%
- Multi-Family Apartments & Condos	109.4	5.9%	119.7 ^b	6.4%
Commercial / Retail / Bus. Office	127.8	6.9%	155.3	8.4%
Industrial	6.8	0.4%	4.3	0.2%
Public (Developed & Vacant)	174.3	9.4%	220.6 ^c	11.9%
Semi-Public	45.2	2.4%	26.4	1.4%
Private Vacant Land	35.5	1.9%	30.4 ^d	1.6%
Roads, Right-of-Way	356.9	19.2%	357.6	19.3%
Total Area	1,856.0	100.0%	1,419.8	100.0%

Sources:

¹ Existing Land Use Survey (July, 1972), North Plainfield 1974 Master Plan, prepared by Robert Catlin & Associates.

² North Plainfield Tax Maps and Tax Assessment Records, 2012, and Field Survey conducted by Consultant through July, 2012.

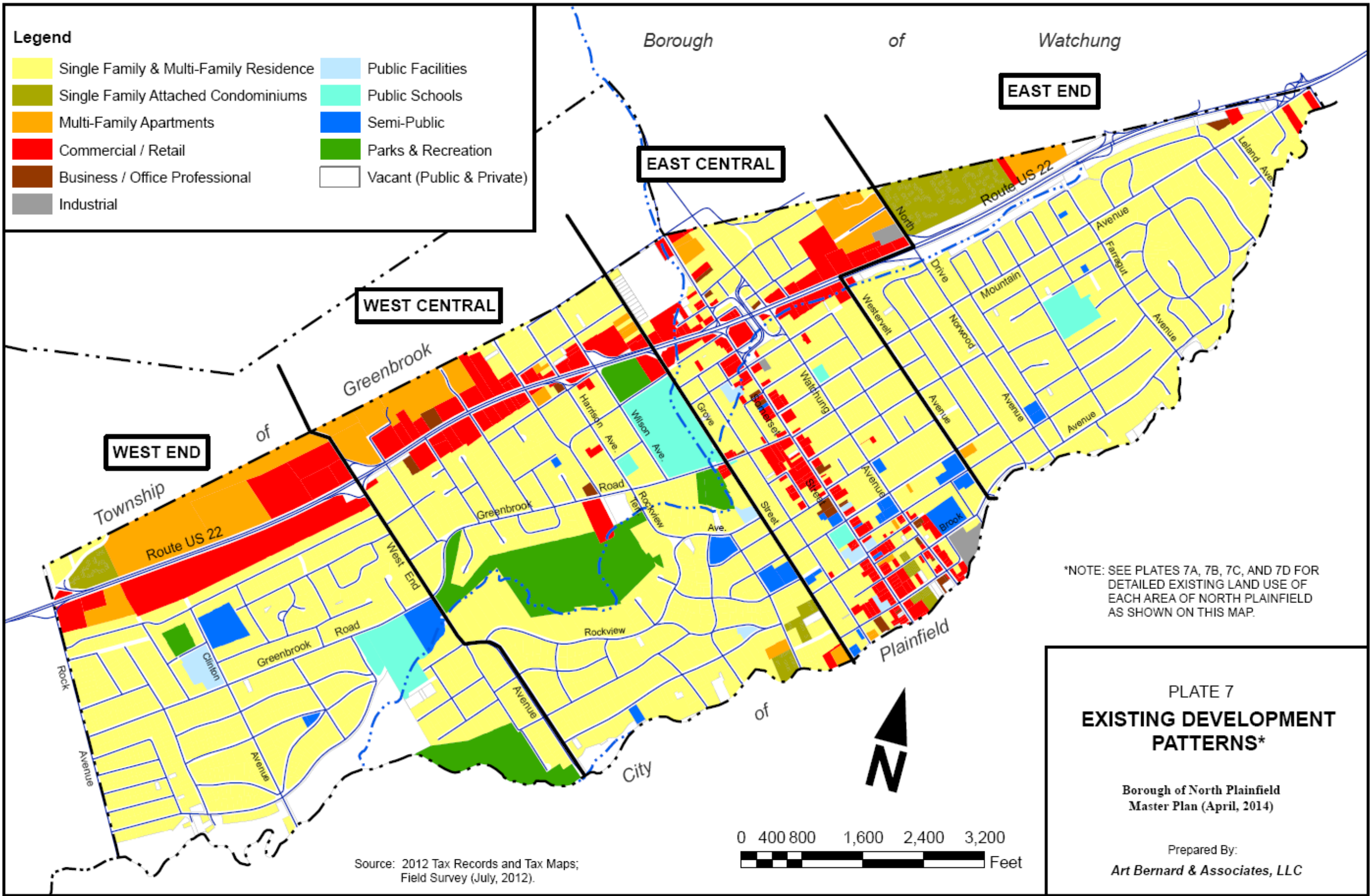
Notes:

^a Includes Duplex Condominium Units and Two-Family Residences.

^b Includes Multi-Family Rental Apartments and Single Family Attached Condominiums (3+ units).

^c Includes Public Facilities, Public Schools, Parks & Recreation, and Public Vacant Land.

^d Includes Undeveloped Portion of Villa Marie Sanitarium Site (14.32 acres).



Legend

- | | |
|--|--|
| Single Family & Multi-Family Residence | Public Facilities |
| Single Family Attached Condominiums | Public Schools |
| Multi-Family Apartments | Semi-Public |
| Commercial / Retail | Parks & Recreation |
| Business / Office Professional | Vacant (Public & Private) |
| Industrial | |

EAST END

EAST CENTRAL

WEST CENTRAL

WEST END

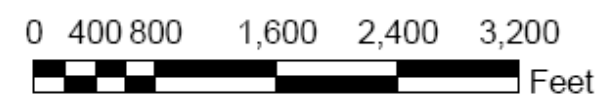
*NOTE: SEE PLATES 7A, 7B, 7C, AND 7D FOR DETAILED EXISTING LAND USE OF EACH AREA OF NORTH PLAINFIELD AS SHOWN ON THIS MAP.

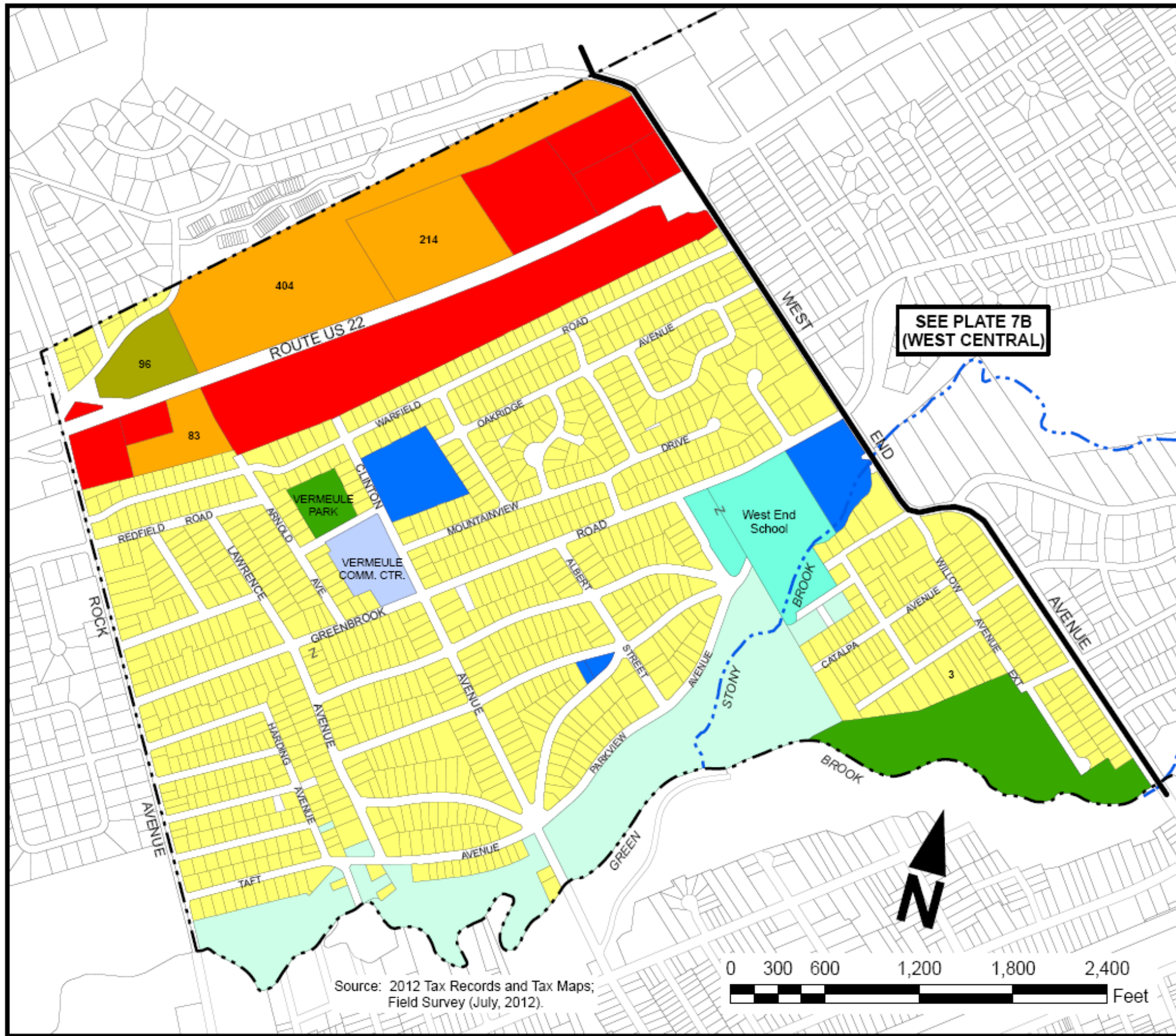
**PLATE 7
EXISTING DEVELOPMENT PATTERNS***

Borough of North Plainfield
Master Plan (April, 2014)

Prepared By:
Art Bernard & Associates, LLC

Source: 2012 Tax Records and Tax Maps;
Field Survey (July, 2012).





Source: 2012 Tax Records and Tax Maps;
Field Survey (July, 2012).

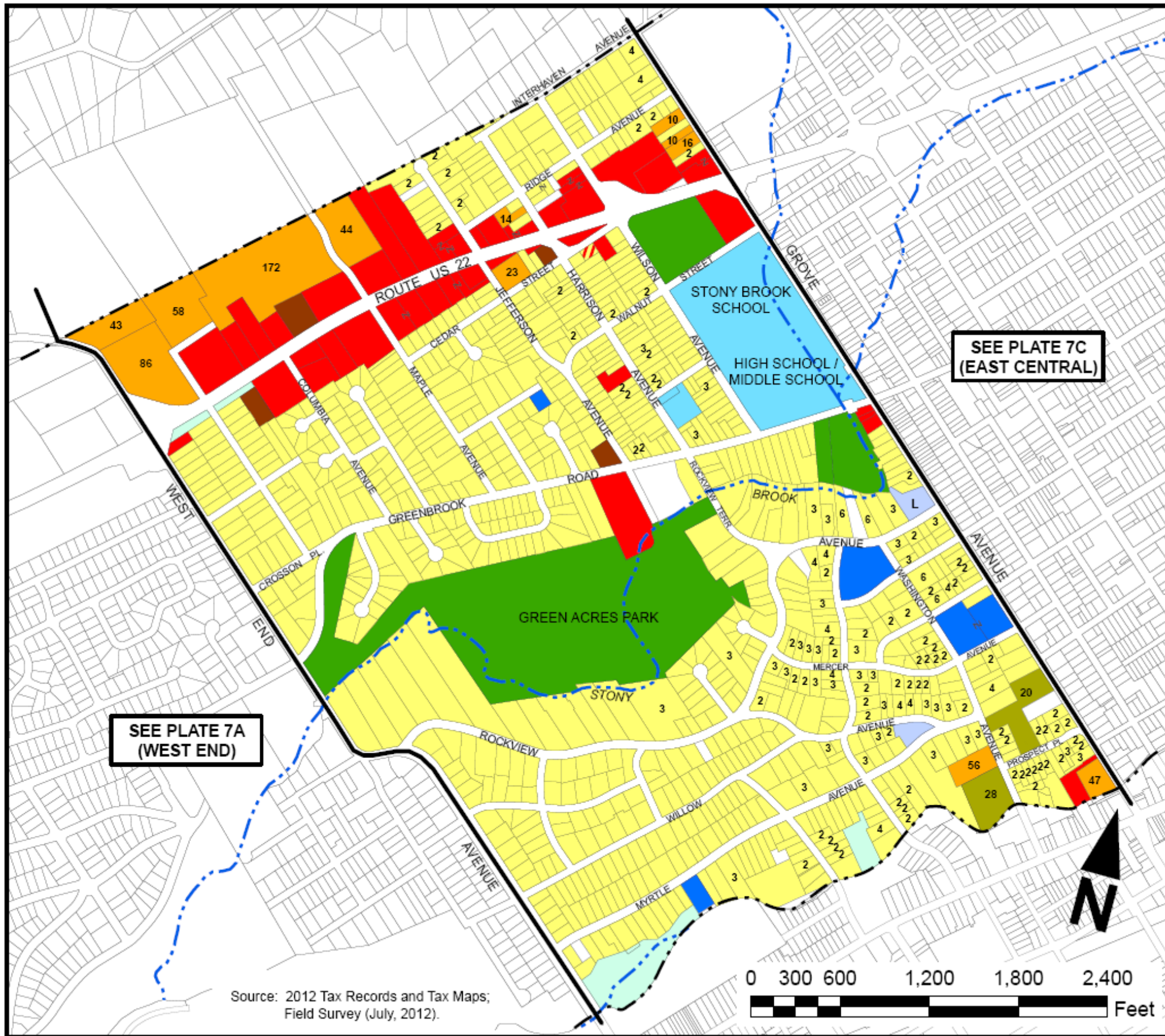
SEE PLATE 7B
(WEST CENTRAL)

- Legend**
- Single Family Residence
 - 3 Three-Family Residence
 - Single Family Condominiums
 - Multi-Family Apartments (#)
 - Commercial / Retail
 - Public Facility
 - Public School
 - Semi-Public / Institution
 - Parks & Recreation
 - Public Vacant
 - Vacant

Borough of North Plainfield
Master Plan (April, 2014)

**PLATE 7A
EXISTING LAND USE
(WEST END)**

Prepared By:
Art Bernard & Associates, LLC



SEE PLATE 7A
(WEST END)

SEE PLATE 7C
(EAST CENTRAL)

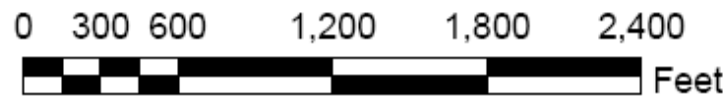
- Legend**
- Single Family Residence
 - 2 Two-Family Residence
 - 3 Three-Family Residence
 - 4+ Four-Family or more Residence
 - Single Family Condominiums (#)
 - Multi-Family Apartments (#)
 - Commercial / Retail
 - Commercial Mixed-Use
 - Business / Office Professional
 - Public Facility
 - Public School
 - Semi-Public / Institutional
 - Parks & Recreation
 - Public Vacant
 - Vacant

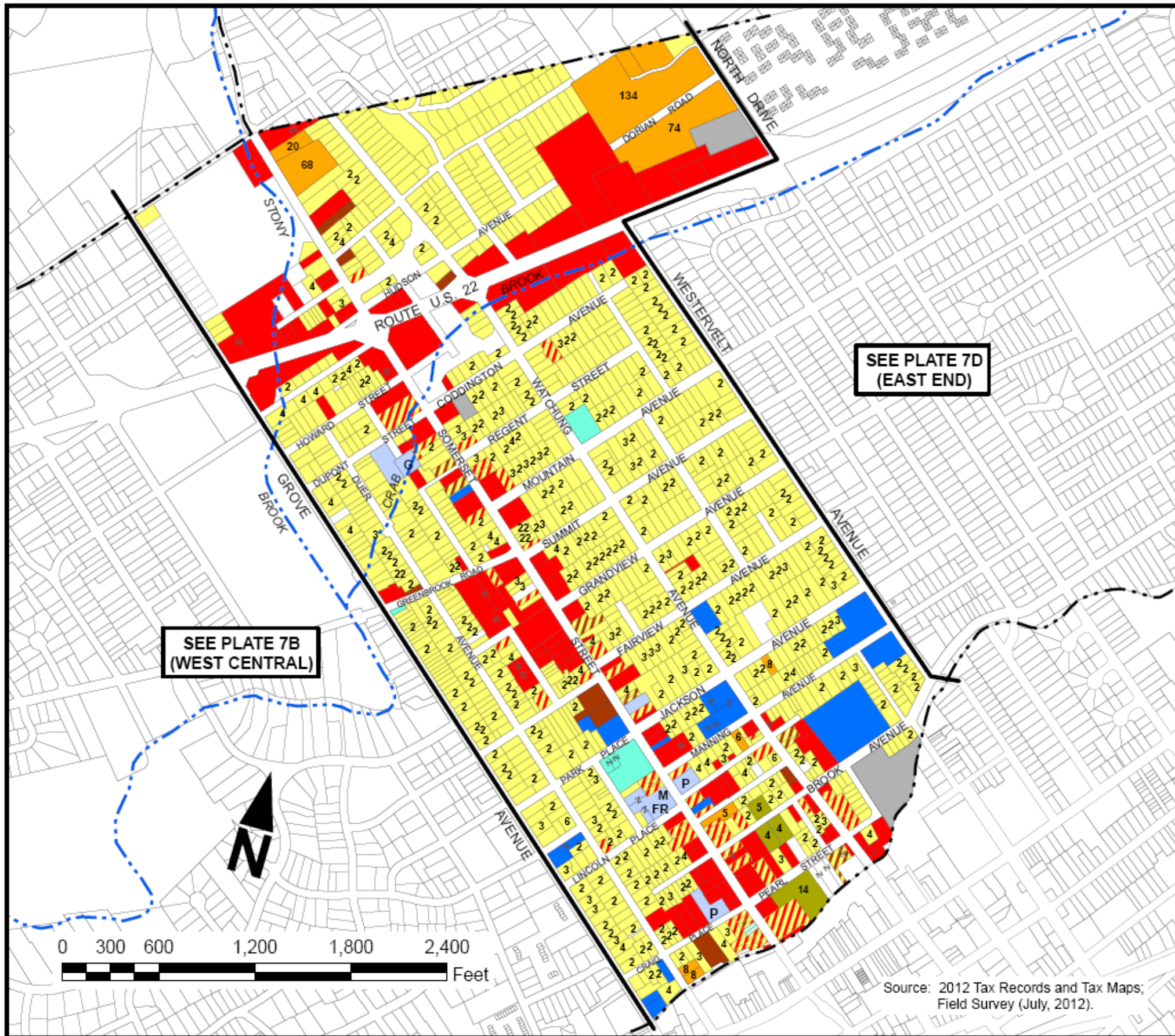
L - North Plainfield Branch Library

Borough of North Plainfield
Master Plan (April, 2014)

PLATE 7B
**EXISTING LAND USE
(WEST CENTRAL)**

Prepared By:
Art Bernard & Associates, LLC





Legend

- Single Family Residence
- 2 Two-Family Residence
- 3 Three-Family Residence
- 4+ Four-Family or more Residence
- Single Family Condominiums (#)
- Multi-Family Apartments (#)
- Commercial / Retail
- Commercial Mixed Use
- Business / Office Professional
- Business Mixed Use
- Industrial
- Public Facility
- Public School Facility
- Semi-Public / Institutional
- Public Vacant
- Vacant

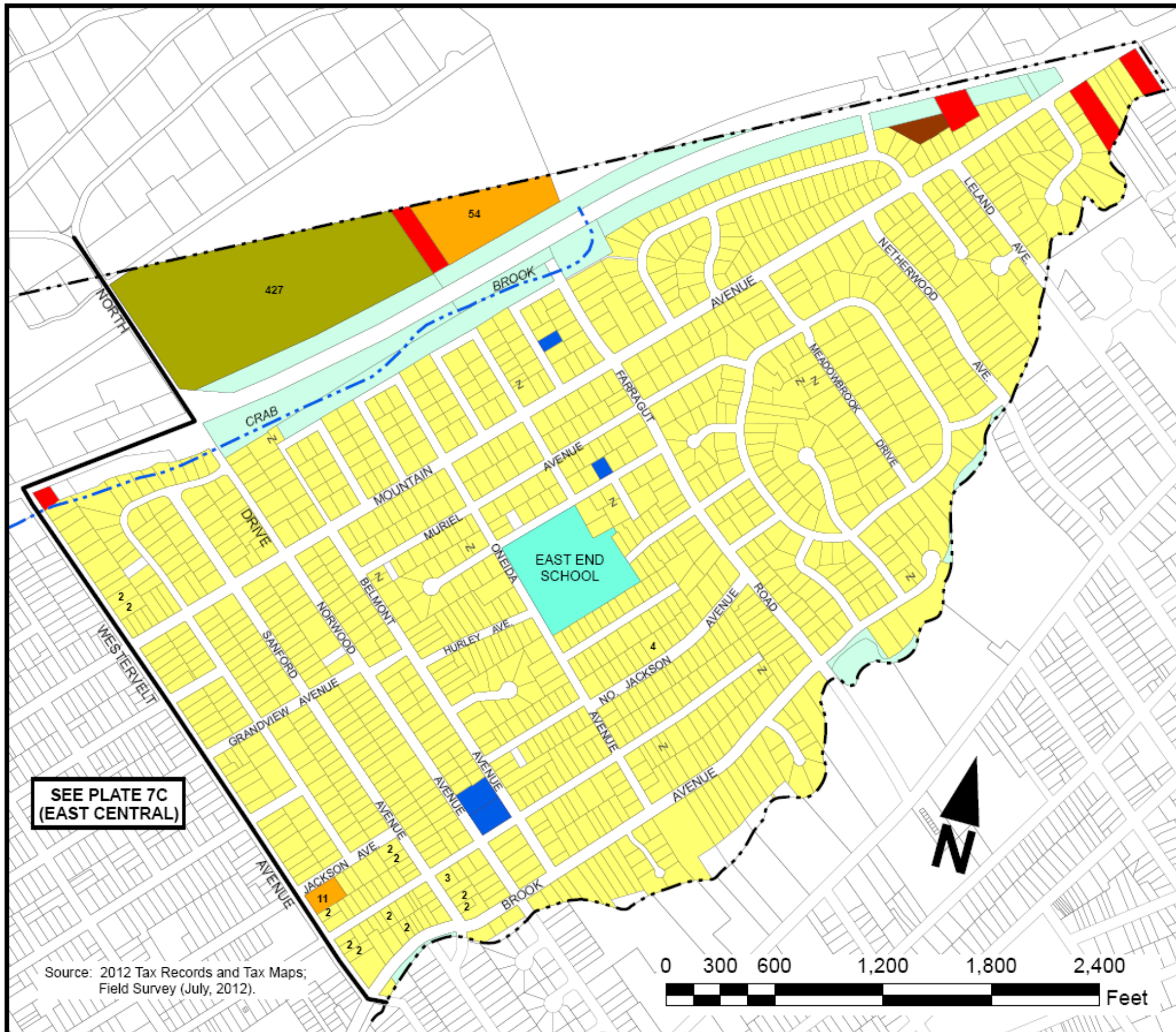
- M - Municipal Building
- FR - Fire & Rescue
- G - Borough Garage
- P - Municipal Parking Lot

Borough of North Plainfield
Master Plan (April, 2014)

**PLATE 7C
EXISTING LAND USE
(EAST CENTRAL)**

Prepared By:
Art Bernard & Associates, LLC

Source: 2012 Tax Records and Tax Maps;
Field Survey (July, 2012).



Legend

- Single Family Residence
- 2 Two-Family Residence
- 3 Three-Family Residence
- 4+ Four-Family or more Residence
- Single Family Condominiums (#)
- Multi-Family Apartments (#)
- Commercial / Retail
- Business / Office Professional
- Public School
- Semi-Public
- Public Vacant
- Vacant

Borough of North Plainfield
Master Plan (April, 2014)

**PLATE 7D
EXISTING LAND USE
(EAST END)**

Prepared By:
Art Bernard & Associates, LLC

Residential Use

Residential use in the Borough accounts for 1,061.4 acres of land, or 57.2 percent of the total land area in the Borough. This compares to 1,109.5 acres (59.8%) of residential use in 1972 (see Exhibit 2). This slight reduction in residential use is primarily due to private redevelopment of former residential lots for public use, and for commercial/retail/office use along the Route 22 corridor and along Somerset Street (including mixed-use development).

Single-family detached residential development currently accounts for 843.7 acres of land, or 79.5 percent of the residential land area in the Borough. These single-family dwellings are typically located within established residential neighborhoods, which except for a few scattered vacant lots, are completely developed. Remaining single-family dwellings are interspersed with commercial and mixed-use development along Somerset Street and along other major thoroughfares in the Borough. As recommended in the 1974 Master Plan, single-family residential is greatly reduced along Route 22. Overall, as shown on Exhibit 2, single-family use in the Borough decreased slightly from 46.0% (853.6 acres) in 1972 to 45.5% (843.7 acres) in 2012.

Multi-family residences in the Borough comprise two-family, three-family, and four-family or more residences. Collectively, these uses account for 98.0 acres, or approximately 5.2 percent of the entire Borough in 2012 (see Exhibit 1). This compares to 146.5 acres (7.9%) for multi-family residence use in 1972. Two-family residences currently account for 65.5 acres of land (3.5%); three-family dwelling units comprise 20.9 acres (1.1%); and, four-family or more residences account for 11.6 acres (0.6%). The North Plainfield 2010 Master Plan Reexamination Report noted issues concerning the appropriateness of existing residential zoning regulations, particularly including the R-6, R-7 and R-8 Residence Zones in the central portion of the Borough, and existing zoning within the Historic Residence District Zone. A detailed discussion concerning these two issues is provided in the “Existing Zoning” section of the basic studies update (see p. 20).

Multi-family rental garden apartment developments and condominium flat/townhouse (single-family attached) developments comprise the second largest residential category in the Borough, accounting for 119.7 acres or 6.5 percent of total land area. Multi-family rental apartment use account for 86.5 acres of land (8.1% of residential use), while single-family attached development (condominiums flats or townhouses) accounts for 33.2 acres (3.1% of residential use). A total of 1,676 multi-family rental apartment units are provided in 26 individual developments, the majority of which are located within several large-scale developments between Route 22 and the municipal boundary with Green Brook Township and Watchung Borough. Condominium townhouse developments account for 598 units on eight individual sites, including two former multi-family rental apartment developments (523

units) along the westbound side of Route 22 (Regency Village and Windsor Terrace) which have been converted to condominium developments.

The Washington Park Historic District is located in the central portion of the Borough. The initial subdivision and development of Washington Park dates back to 1868. Although no structures or dwellings within Washington Park are officially listed on the National or State Historic Register, the overall District was placed on the National and State Register of Historic Places in 1987.

Another historic residence in the Borough includes the Vermeule Mansion (a.k.a. VanDerventer/Brunson House), which was built in the early 1800's. The Vermeule Mansion is currently owned by the Borough of North Plainfield and utilized by the community for various public events and activities (see Community Facilities and Services). The mansion was placed on the National and State Register of Historic Places in 2004.

A major housing issue facing North Plainfield as noted in the 2010 Reexamination Report concerns overcrowding conditions, particularly in the more densely populated central area of the Borough between Grove Street and Watchung Avenue, and in the immediate adjacent residential neighborhoods zoned R-3 and R-4, Residence District. The 2000 Census (latest available data) reported that of 7,202 occupied housing units in the Borough, 755 units (10.5%) were overcrowded (more than one person per room), including 5.2 percent of owner-occupied units and 18.0 percent of rental units.

The central area of the Borough includes numerous mixed-use commercial/residential uses, and a variety of residential uses (single-family, two, three and four-family or more residences), which have been renovated over the years for multi-family residence use. In some instances, multi-family residence use and mixed-use apartment units have been created illegally, including 'boarding' units (individual bedrooms within existing residential dwellings utilized as living quarters). The creation of these illegal units has contributed to overcrowding conditions in the central portion of the Borough, resulting in building code violations, fire hazard, and/or health-related hazards

Commercial Use

Commercial land use in the Borough is primarily concentrated along both sides of Route 22 between Rock Avenue and North Drive, and in the central business area of North Plainfield along Somerset Street. Commercial land use patterns throughout the Borough are illustrated on Plate 7, while Plate 7C (East Central) illustrates existing land use in the Somerset Street central business area.

Commercial land use activities along Route 22 consist of highway-oriented uses, including a variety of commercial business and retail service establishments, restaurants, banks,

automobile fuel stations and/or repair businesses, and new/used-car automobile dealerships and storage lots. These commercial uses offer shopping opportunities and commercial services to local and regional residents along the Route 22 corridor. While most of the commercially developed properties along Route 22 are occupied and open for business, there are a few vacant building sites which are available for lease or sale.

The largest commercial tract along Route 22 is the former K-Mart/Pathmark shopping center site located along the eastbound side of Route between Rock Avenue and West End Avenue (Block 201.01, Lot 1). This 28.9 acre tract is presently developed for shopping center use, and comprises two large building groups, including two vacant anchor stores, and three smaller building pads for retail/commercial use. At present, a few small tenant spaces are occupied. Partial redevelopment of the site for continued commercial retail use was recently approved by the Borough, with construction set to begin in 2013.

As shown on Exhibit 1, 155.3 acres (8.4 percent) of land are developed for 'commercial' use in the Borough, including commercial service/retail use and business office/professional use. Commercial service/retail use comprises 147.9 acres (95.2% of commercial use), while the remaining 7.4 acres (4.8% of commercial use) are utilized for business office/professional use. A breakdown of commercial use data reveals that 123.1 acres of commercial properties are located along Route 22, while the remaining 32.2 acres of commercial use is located in the Somerset Street central business area. Overall, commercial, retail, business office use in the Borough increased from 127.8 acres (6.9%) in 1972, to 155.3 acres (8.4%) in 2012 (see Exhibit 2).

Of the 147.9 acres of commercial service/retail use, 57 percent comprise commercial business/service establishments, and 43% comprise retail establishments. For business office/professional use, the majority of the 7.4 acres (72%) comprise business office development, while only 28% is accounted for by professional office use. It should be noted however, that several business office buildings include professional office tenants (i.e. doctors, lawyers, dentists, etc.)

Mixed-use development accounts for 10.7 acres of commercial use in the Borough. These uses typically involved retail or commercial business uses on the first floor, with residential use above the first floor. As would be expected, this mixed-use activity is largely present in the Somerset Street central business area, where 94 percent (10.1 acres) of mixed-use development is located. In fact, mixed-use development accounts for nearly one-third (31.4%) of commercial land use activity in the central business area. As determined through a review of the Borough tax assessment records, a total of 57 mixed-use establishments were identified in the central business area. Tax records indicate that a total of 171 'apartment' units are located within these mixed-use buildings.

The largest component of commercial service establishments in the Borough comprises automobile-related businesses, including new and used-car dealerships, automobile repair businesses, fuel stations, and dealership storage lots. Analysis indicates that 36.7 acres (24.8%) of commercial service/retail use comprise these automobile-related activities. As expected, the majority of these uses (92%) are located along the Route 22 corridor. In fact, automobile-related commercial use along Route 22 accounts for 52.4 percent of commercial uses along the highway within North Plainfield.

In summary, many commercial areas and uses along Route 22 and within the central business area along Somerset Street comprise older establishments and buildings, some of which are worn by age, lack of maintenance, or over-use. This has resulted in depreciated building/site conditions of some commercial parcels, and an inability of existing commercially developed properties to support the future needs of a viable business community.

Industrial Use

Industrial land use in the Borough remains a very small component of existing non-residential use in the Borough. As shown on Exhibit 1, a total of 4.3 acres of land are utilized for 'industrial' purposes. This accounts for only 0.2% of the total land area. Based upon a field survey and as identified by the Borough tax assessment records, only three land parcels are utilized for industrial use in the Borough. The largest industrial tract (2.5 acres) is the 'Old Mill' site (Block 43, Lot 6 – *former trophy factory*), located along the municipal boundary with Plainfield on Pearl Street in the central business area of the Borough. The site is currently developed with a two-story masonry industrial building with access to Pearl Street and Brook Avenue, and is currently utilized for cabinet and architectural millwork. Consideration by the Borough in the past has been given to the possible redevelopment of the property, although no formal redevelopment plan or designation study in accordance with the New Jersey Local Redevelopment and Housing Law has been prepared.

The remaining classified industrial uses in North Plainfield include a parcel located on North Drive (Block 6.04, Lot 10), and a second parcel (Block 75, Lot2) located on Codington Avenue. The North Drive parcel is currently developed with a one-story industrial building, which is currently vacant. The second industrial property is utilized as an industrial storage yard/tool shop.

It is important to note that several parcels in the Borough are classified in Borough tax records as 'commercial', although field investigation indicates an 'industrial' character (i.e. warehouse/indoor storage, outdoor storage yard, maintenance garage, etc.). In most instances, these uses are located within commercially developed areas of the Borough, or adjacent to residential uses or zones. These commercially assessed properties, although 'industrial' in character, were categorized as commercial for purposes of this analysis.

Rather than recognize these commercial properties as 'industrial' uses, it is recommended that the Borough take into consideration the condition and use of these properties when formulating plans for the areas in which these uses are located, including the possible need for rehabilitation or redevelopment. It is further recommended that property maintenance and nuisance ordinances be strictly enforced to ensure that negative impacts from commercial 'industrial' activities upon the community and adjoining land uses are negated.

Semi-Public & Institutional Use

Semi-public uses in the Borough account for 26.4 acres, or 1.4 percent of land area. Twenty-four land parcels account for this land use category, which include houses of worship, private schools, fraternal organizations, group homes, and one cemetery. By way of comparison, in 1972, 45.2 acres (2.4%) of Borough area was utilized for semi-public use (see Exhibit 2)

Public Schools

The North Plainfield Board of Education operates six public schools, several administrative support facilities, and two recreational properties. Collectively, these facilities comprise a total of 51.7 acres of land, including 43.2 acres for schools and administrative support facilities and 8.5 acres for recreational use. A full description of public school facilities and grounds is provided in the Community Facilities basic studies update (p. 63).

Public Facilities & Public Vacant Land

The inventory of public facilities and property in the Borough includes all parcels owned by North Plainfield, Somerset County, Union County, and the State of New Jersey. For purposes of analysis, this portion of the existing land use study will concern public property and facilities not utilized for recreational purposes (see next section). As shown of Exhibit 1, public facilities comprise 8.5 acres of land in the Borough, while vacant public land accounts for 80.2 acres.

Public facilities in the Borough include the municipal building and firehouse, the municipal garage, two public parking lots, the municipal library, the Veterans Memorial, the Vermeule Mansion/Community Center site, and the Somerset County Road Department facility. A full description of these Borough-owned facilities is provided in the Community Facilities basic studies update.

Vacant public land in the Borough accounts for 80.2 acres, or 4.3 percent of land area in the Borough. Borough-owned vacant land includes fifteen parcels of land totaling 24.7 acres. Most of these Borough-owned vacant parcels include environmentally sensitive land, the majority of which is located along the Green Brook, Stony Brook, and Crab Brook stream corridors. The Union County Parks Commission owns two vacant parcels of land adjacent to

the Green Brook totaling 32.3 acres. Although unimproved, these parcels are part of the Union County Green Brook Park facility, which is located across Green Brook in the City of Plainfield. The remainder of vacant public land is owned by the State of New Jersey, which accounts for 11 properties totaling 23.2 acres in area. These state-owned parcels are located adjacent to the Route 22 right-of-way, with several large parcels extending along both sides of Route 22 between North Drive and the Mountain Avenue. Nearly half of the state-owned vacant land comprises environmentally sensitive land within the Crab Brook stream corridor located along the eastbound side of Route 22.

Recreational Use

Existing recreational use in the Borough accounts for 88.7 acres (4.8 percent) of the Borough. These active recreational parcels include four Borough-owned properties (80.2 acres) and two Board of Education parcels (8.5 acres). Borough-owned recreational facilities include Green Acres Park, Vermeule Park, Stony Brook Park, and “Green Brook Park”. Recreational land owned by the North Plainfield Board of Education includes (Upper) Krausche Field and Fromm Field (adjacent to Stony Brook Park). A full description of these recreational facilities is provided in the Parks, Recreation and Open Space basic studies update (p. 86).

Private Vacant/Undeveloped Land

The existing land use study identified a total of 75 privately-owned vacant/undeveloped parcels of land in North Plainfield, accounting for 30.4 acres of land, or 1.6 percent of the total land area in the Borough. This tally includes 14.32 acres of undeveloped/unoccupied land comprising the former Villa Maria site. Exclusive of the Villa Maria site, approximately 16.1 acres of vacant land (62 parcels) remain in North Plainfield. These parcels primarily include small privately-owned individual lots of less than ¼ acre in size, within existing residential neighborhoods, as well as small privately-owned individual lots located along environmentally sensitive stream corridors. Based upon a review of available environmental data and an assessment of development potential, it is estimated that approximately 9.7 acres (36 parcels) are developable and the remaining 26 parcels are not developable either due to location within environmentally sensitive flood-prone area or due to limited size/configuration. Based upon existing zoning, 10.9 acres (68%) of vacant land is residentially zoned, while the remaining 5.2 acres (32%) are located within commercially zoned areas of the Borough. Taking the above noted development thresholds for environmental conditions or lot size/configuration into consideration, of the residentially zoned 10.9 acres of vacant land, approximately 7.5 acres (69%) are developable, while for the 5.2 acres of commercially zoned vacant land, 41 percent (2.2 acres) are developable.

Existing Zoning

Existing zoning in the Borough includes nine individual residential zone districts and eight individual business (commercial) zone districts. In addition, two Historic Residence Districts encompass the Washington Park Historic District. Plate 8 illustrates existing zoning in the Borough. Existing zoning primarily reflects existing land use development patterns in the Borough.

As shown on Plate 8, the predominant residential zones in the Borough include the R-1 and R-2 Residence Districts, which account for a vast portion of the eastern and western areas of North Plainfield. Single-family, two-family and townhouse (R-3, R-4) zoning typically include residentially developed properties located in the central portion of the community, with business zoning (B, B-1, B-2 and B-2a) comprising commercially developed (and mixed-use) parcels located along the Somerset Street corridor and within the central business area of the town, south of Lincoln Place/Race Street.

In vicinity of Route 22, predominant zoning along both sides of the highway include commercial zoning (B-3, B-4, B-5, B-6), with R-5 residential zoning accounting for the existing multi-family rental apartment and condominium developments located north of Route 22 (westbound side). The R-9, Age Restricted Community Residence Zone is located in the north-central portion of the Borough (former Villa Maria sanitarium site).

In response to the Borough's concern noted in the 2010 Master Plan Reexamination Report regarding yard and area requirements for the R-6, R-7 and R-8 Residence Districts in the central portion of the Borough, a zoning analysis was conducted in March, 2012, to determine the adequacy of existing zone requirements in terms of properly regulating development. These zones were established in 2001, and were created in part, to increase the minimum required lot area for a conforming lot.

As with other residential districts in the Borough, the minimum lot area (by definition) must be measured within 116 feet of the street right of way line. Other than this requirement, the remaining bulk standards in each zone are the same as those regulating the R-1 Zone. Since there are only three (3) vacant properties within the combined area, the R-6, R-7 and R-8 Zone study area, the character of the area has been established as single-family homes on various sized lots.

One of the problems suspected of the bulk standards is that the standards, which were designed for a 7,500 square foot lot (R-1 Zone), allow overdevelopment on lot sizes that are permitted to be 10,000 square feet (R-6 Zone), 25,000 square feet (R-7 Zone) and one (1) acre (R-8 Zone). This is not surprising since the side yard set-backs and maximum building coverage standards are designed for a much smaller lot (7,500 square feet).

To supplement the zoning analysis of the R-6, R-7 and R-8 Residence Districts, two maps were prepared to illustrate compliance with the bulk standards. Plate 8A displays the lots in each of these zones that do not conform to the minimum lot width requirements and/or the minimum lot area requirements, assuming that the minimum lot area requirement may be satisfied by the *total* lot area (exclusive of the 116-foot measurement requirement, as noted above). Plate 8B illustrates lot conformance for all lots in the R-6, R-7 and R-8 zones, based upon compliance with the requirement that the minimum lot area must be satisfied within 116 feet of the street line.

As presented on Plates 8A and 8B, the analysis of the bulk standards and an examination of the character of the study area reveals that virtually none of the lots in the R-7 and R-8 Zones conform to the required bulk standards, and approximately one-half the lots in the R-6 Zone are conforming in lot area.

The requirement to comply with the 116 foot standard requires lots to be much wider than the 65 feet permitted by ordinance. For example, in the R-6 zone, a lot must be 86 feet wide to create sufficient lot area within 116 feet of the street right of way line. In the R-7 Zone, a lot must be 215 feet wide. The R-8 Zone requires a lot to be 375 feet wide to create sufficient lot area within 116 feet of the street right of way line. This creates a situation in which most property owners within these zones must go the Board of Adjustment for any expansion to their homes.

The severe impact of the 116 foot requirement and the MLUL directive for zones to be drawn with reasonable consideration to the character of each district requires a re-examination of the rationale for the 116 foot requirement. Normally, such a requirement is a safeguard against irregularly shaped lots. However, most of the lots in the subject areas are fairly regular in shape.

With regards to the R-8 Zone, the lot area (excluding the 116 foot requirement) and lot width standards are fairly consistent with the character of the lots in the area. Only seven of the 23 lots in the R-8 Zone do not comply with the minimum lot area requirement. All the lots comply with the lot width requirement of 65 feet. If the minimum lot width is increased to 100 feet, several lots would not comply with the new standard but only one more lot would be non-conforming because most of these lots are already non-conforming with regards to lot area.

In the R-7 Zone, seven (7) of the 15 lots do not comply with the 25,000 square foot requirement. If the minimum lot size were reduced to 20,000 square feet, only four (4) lots would be non-conforming without permitting more than one lot to be subdivided. Three of the lots in the R-7 Zone do not comply with the minimum lot width requirement of 65 feet. However, most of the lot widths in the zone are significantly wider than 65 feet.

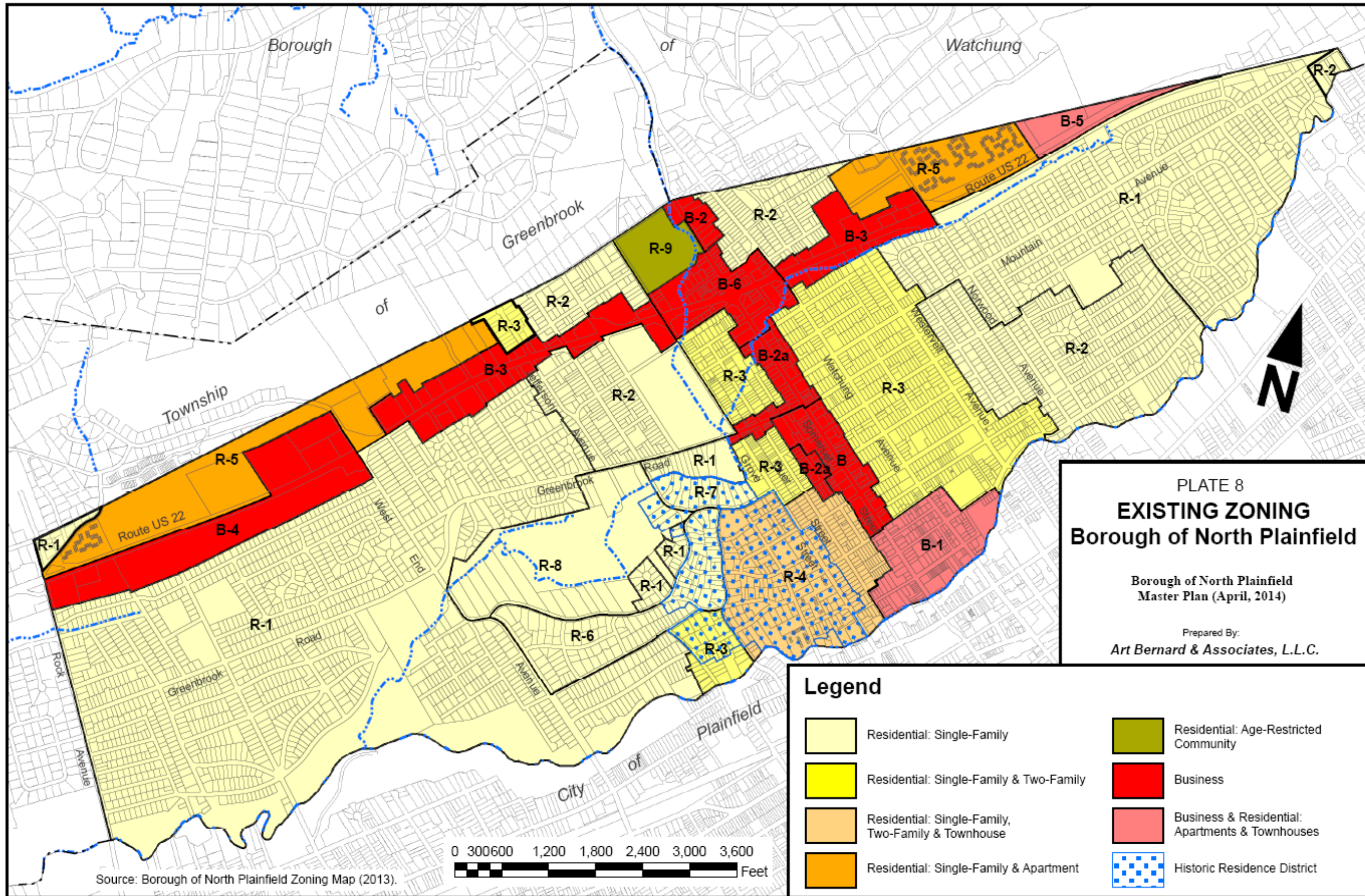








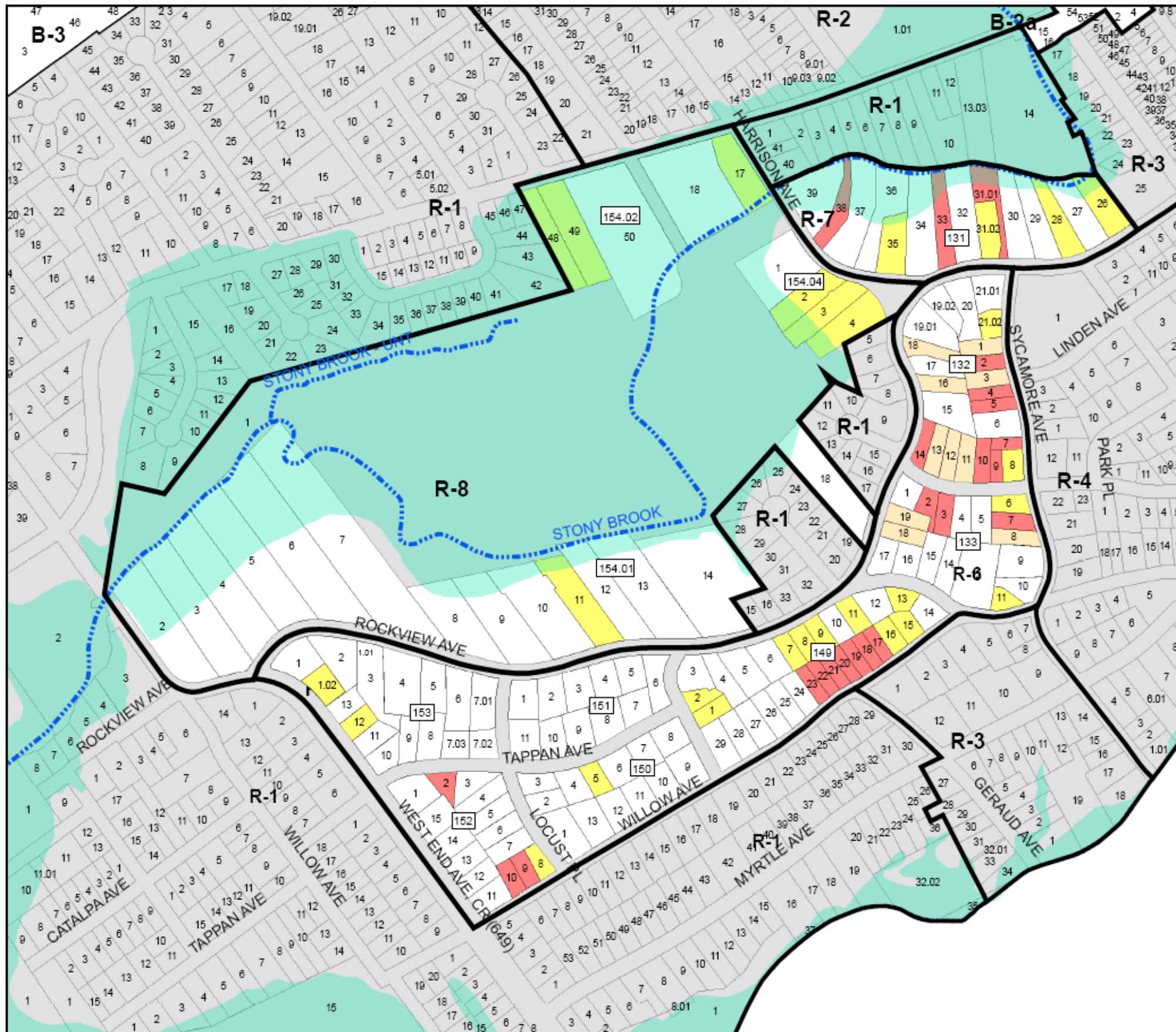


PLATE 8
EXISTING ZONING
Borough of North Plainfield
 Borough of North Plainfield
 Master Plan (April, 2014)
 Prepared By:
 Art Bernard & Associates, L.L.C.

Legend	
	Residential: Single-Family
	Residential: Single-Family & Two-Family
	Residential: Single-Family, Two-Family & Townhouse
	Residential: Single-Family & Apartment
	Residential: Age-Restricted Community
	Business
	Business & Residential: Apartments & Townhouses
	Historic Residence District

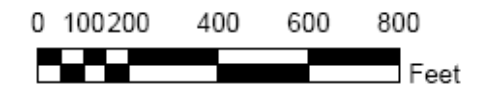
Source: Borough of North Plainfield Zoning Map (2013).

0 300 600 1,200 1,800 2,400 3,000 3,600 Feet



LEGEND

-  Outlying Zoning
-  Lots Zoned R-6, R-7 & R-8
-  Insufficient Lot Area
-  Insufficient Lot Width
-  Insufficient Lot Area & Lot Width
-  Stream
-  100-Year Flood Area



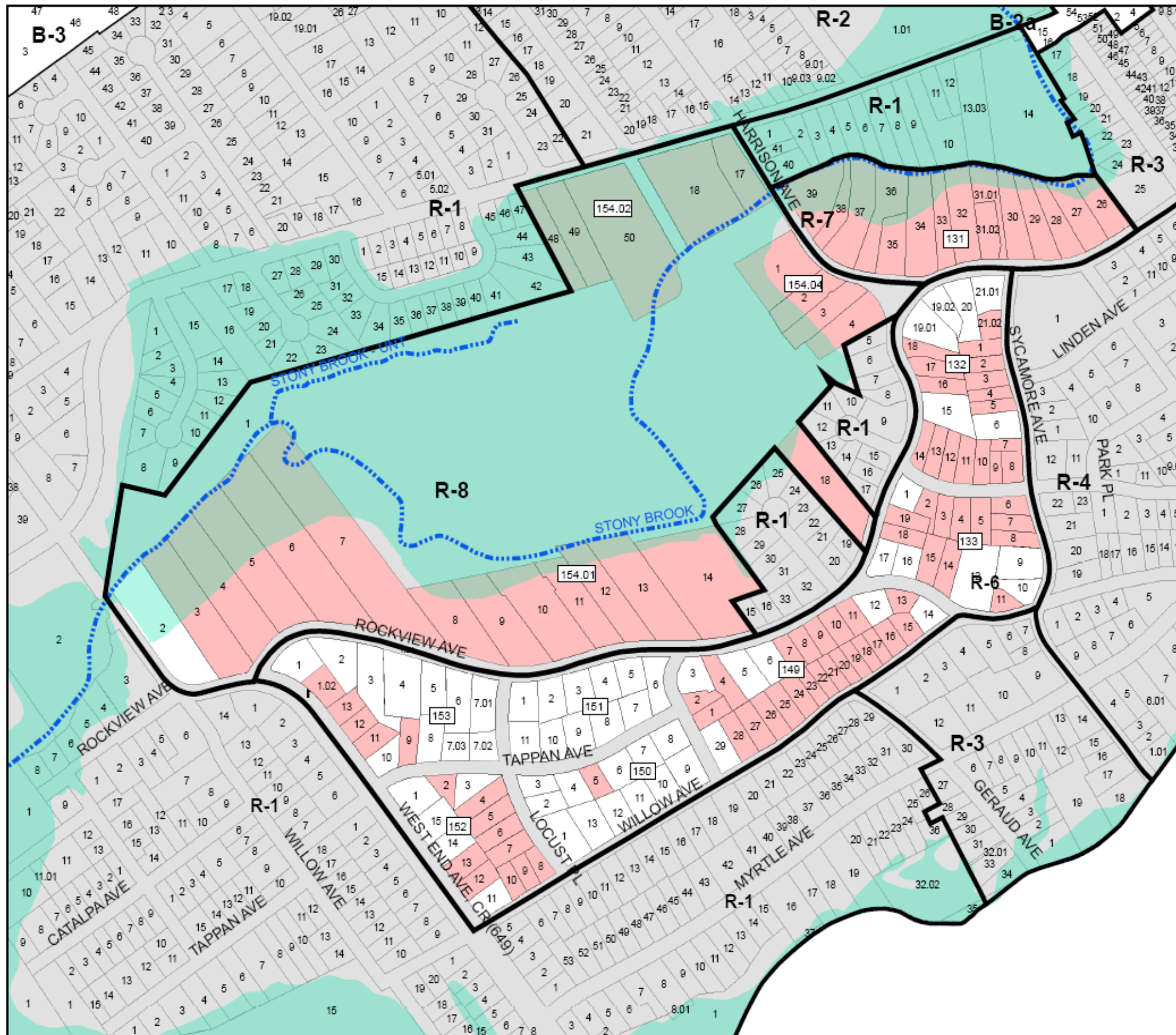
Borough of North Plainfield
Master Plan (April, 2014)

Plate 8A
**NON-CONFORMING
LOT ANALYSIS***
(R-6, R-7 & R-8 ZONES)

*Based Upon Minimum Lot Area
and Lot Width Requirements
For Each Zone, Respectively.

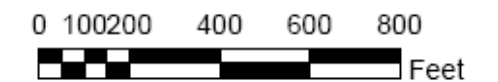
February 29, 2012

Prepared By:
Art Bernard & Associates, LLC



LEGEND

- Outlying Zoning
- Conforming Lot
- Non-conforming Lot
- Stream
- 100-Year Flood Area



Borough of North Plainfield
Master Plan (April, 2014)

Plate 8B

NON-CONFORMING LOT ANALYSIS* (R-6, R-7 & R-8 ZONES)

*Minimum Lot Area Required
Within 116 Feet of Street
Right-Of-Way Line
February 29, 2012

Prepared By:

Art Bernard & Associates, LLC

With regards to compliance in the R-6 district, excluding the 116 foot standard, the western portion of the zone displays relatively few non-conforming lots, whereas on the eastern portion of the R-6 zone, the number of non-conforming lots exceeds the number of conforming lots. Analysis reveals that a substantial number of lot width non-conformities could be eliminated by reducing the minimum lot width to 60 feet. It would require a substantial reduction in lot area to substantially reduce the number of lots that are non-conforming due to lot area. Such a substantial reduction in lot area would also likely encourage further subdivision of oversized lots. The lot areas within the R-6 Zone are not uniform enough to warrant a change in lot area.

In general, side yard set-back requirements increase with the size and width of a lot. The increased set-back creates more space between adjoining buildings. Maximum building coverage ratios and impervious cover ratios generally decrease with the size of a lot because there is not a direct relationship between a reasonably sized house and the size of a lot. Within the R-6, R-7 and R-8 Zones, lot sizes were increased in 2001 without any change to the side yard for maximum building coverage. Thus, the analysis suggests a change in the bulk standards for the R-6, R-7 and R-8 Zones.

It is further noted that the back yard area of many existing lots in the R-8 Zone are located in the 100-year flood plain. In order to ensure that property owners have usable rear-yards, the Borough should consider amending the zoning ordinance so that rear-yard areas are measured outward from the building or structure and must also be provided in a contiguous area located between the building or structure and the edge of any floodways, wetlands, wetland buffer areas, utility easements, drainage swales serving more than two (2) abutting lots, stormwater detention basins, related water courses or slopes exceeding fifteen (15) percent.

In addition to the above analysis of the R-6, R-7 and R-8 Zones, the Planning Board recommended a review of the cell tower ordinance in the preparation of this Master Plan. The viability of the ordinance will be addressed in the Land Use Element of the Master Plan.

TAX BASE

As an older, near-fully developed suburban municipality, a stable tax base in North Plainfield is critical in meeting the present and future responsibility to provide necessary public services to the Borough's residents and business community. These services take many forms, ranging from public school education; county services, including administrative, branch library, maintenance of county-owned roads and infrastructure, parks, open space, library, etc.; and, municipal services, including local administrative services, utilities, parks and recreation, and maintenance of municipal-owned roads and infrastructure.

In North Plainfield, as with most communities, the property tax base is dependent upon existing residential, commercial and industrial development. In the case of North Plainfield, little vacant developable land remains in the Borough to significantly increase the tax base. Exhibit 3 (following page 21) provides a breakdown of property tax valuation for land use in North Plainfield from 2002 to 2011. As shown for the 2011 tax year, 83.0 percent of the Borough tax base is generated from residential uses, including single-family and multi-family residences, and multi-family apartment/condominium development. Non-residential development (commercial and Industrial) accounted for 16.7 percent of the tax base, while vacant land accounted for only 0.3 percent of the Borough tax base. These proportions have remained relatively consistent over the past ten years, with the residential sector declining slightly from 85.5 percent in 2002, and the commercial/industrial tax base accounting for a slight increase from 14.2 percent of the tax base in 2002.

For comparison purposes, Exhibit 4 (below) provides the proportion of 2011 property tax valuation for selected municipalities along the Route 22 corridor. These selected communities are nearly fully developed, and comprise generally similar development patterns. As shown, the proportion in property valuations in North Plainfield are very similar to these communities, and particularly similar with Mountainside Borough, which has virtually the same proportion of residential valuation (81.8% for Mountainside vs. 83.0% for North Plainfield) and non-residential valuation (17.0% for Mountainside vs. 16.7% for North Plainfield).

Exhibit 4
Property Tax Valuation Comparison
North Plainfield & Selected Municipalities (2011)

<u>Municipality</u>	<u>Residential (Class 2)</u>	<u>Commercial (Class 4A)</u>	<u>Industrial (Class 4B)</u>	<u>Apartment (Class 4C)</u>	<u>Vacant (Class 1)</u>	<u>TOTAL</u>
North Plainfield Borough	74.2%	16.5%	0.2%	8.8%	0.3%	100.0%
City of Plainfield	82.7%	10.5%	1.8%	4.5%	0.5%	100.0%
Borough of Fanwood	92.0%	6.4%	1.0%	- - -	0.6%	100.0%
Township of Scotch Plains	90.1%	6.0%	0.7%	2.5%	0.7%	100.0%
Borough of Mountainside	81.8%	11.6%	5.4%	- - -	1.2%	100.0%

Source: Boards of Taxation for Somerset County and Union County.

Exhibit 3
Property Tax Valuation
2002 - 2011
 Borough of North Plainfield, New Jersey

Tax Year	Residential (Class 2)			Commercial (Class 4A)			Industrial (Class 4B)			Apartment (Class 4C)			Vacant (1)			Total	
	Parcels (#)	Valuation (\$)	Portion of Tax Base (%)	Parcels (#)	Valuation (\$)	Portion of Tax Base (%)	Parcels (#)	Valuation (\$)	Portion of Tax Base (%)	Parcels (#)	Valuation (\$)	Portion of Tax Base (%)	Parcels (#)	Valuation (\$)	Portion of Tax Base (%)	Parcels (#)	Valuation (\$)
2002	4,976	\$651,229,500	78.52%	230	\$116,136,200	14.00%	3	\$1,505,800	0.18%	33	\$57,716,700	6.96%	88	\$2,840,900	0.34%	5,330	\$829,429,100
2003	4,978	\$652,167,500	78.30%	223	\$116,360,775	13.97%	3	\$1,505,800	0.18%	34	\$59,956,700	7.20%	88	\$2,909,500	0.35%	5,326	\$832,930,275
2004	4,967	\$652,293,100	78.22%	237	\$116,227,775	13.94%	3	\$1,505,800	0.18%	35	\$60,861,100	7.30%	92	\$3,076,600	0.37%	5,334	\$833,964,375
2005	4,966	\$652,604,700	78.03%	244	\$118,305,475	14.15%	3	\$1,505,800	0.18%	36	\$61,016,300	7.30%	89	\$2,910,900	0.35%	5,338	\$836,343,175
2006	4,965	\$652,711,250	77.87%	244	\$120,006,475	14.32%	3	\$1,505,800	0.18%	36	\$61,016,300	7.28%	90	\$2,963,500	0.35%	5,338	\$838,203,325
2007	4,973	\$654,089,250	78.13%	242	\$117,655,575	14.05%	3	\$1,505,800	0.18%	36	\$61,016,300	7.28%	86	\$2,957,500	0.35%	5,340	\$837,224,425
2008	4,971	\$654,336,350	77.55%	244	\$116,728,725	13.83%	3	\$1,505,800	0.18%	38	\$68,399,800	8.11%	86	\$2,770,500	0.33%	5,342	\$843,744,175
2009 ^a	4,952	\$1,315,561,800	73.31%	272	\$309,290,800	17.23%	3	\$4,819,100	0.27%	37	\$159,662,400	8.90%	76	\$5,263,000	0.29%	5,340	\$1,794,557,100
2010	4,949	\$1,312,210,300	73.61%	272	\$300,749,600	16.87%	3	\$4,819,100	0.27%	37	\$159,662,400	8.96%	76	\$5,275,000	0.30%	5,337	\$1,782,716,400
2011	4,948	\$1,309,121,900	74.22%	267	\$280,985,550	16.50%	3	\$4,088,200	0.23%	37	\$154,653,400	8.77%	79	\$5,036,400	0.29%	5,334	\$1,763,894,450

Source: North Plainfield Borough Tax Assessors Office.
 Note: Property Revaluation Effective for 2009 Tax Year.

Exhibit 5
Property Tax Rate Comparison
North Plainfield & Selected Municipalities (2011)

<u>Municipality</u>	<u>Municipal^a</u>	<u>Public Schools^b</u>	<u>County^c</u>
North Plainfield Borough \$2.921/\$100*	32.2%	55.7%	12.1%
City of Plainfield \$2.886/\$100	58.7%	26.5%	14.8%
Borough of Fanwood \$2.298/\$100	21.5%	60.9%	17.6%
Township of Scotch Plains \$2.298/\$100	17.2%	64.2%	18.6%
Borough of Mountainside \$1.666/\$100	27.5%	47.6%	25.8%
Borough of Dunellen \$2.613/\$100	29.3%	57.8%	12.9%
Township of Green Brook \$1.193/\$100	19.4%	64.3%	16.3%
Borough of Watchung \$1.862/\$100	25.0%	55.7%	19.3%

*Equalized Assessed Valuation

Source: Boards of Taxation for Somerset County, Middlesex County and Union County.

- a) Includes municipal services and municipal open space and/or library, as appropriate.
- b) Includes local and regional public schools, as appropriate.
- c) Includes county services and county open space and/or library, as appropriate.

Exhibit 5 presents a comparison of the tax rate apportionments for various municipalities surrounding North Plainfield. Tax rates are categorized for municipal services, public school education, and county services. The tax rates for municipal and county services include open space and/or library tax rates, where appropriate, while public school rates reflect local and regional (where applicable) school-district rates. As shown on the Exhibit, the tax rate structure for North Plainfield is somewhat similar to the surrounding suburban communities, and particularly similar with Dunellen Borough and Watchung Borough. While these tax rates do not reflect state or federal aid for local government services or public school education, they do provide a general sense of budgetary requirements supported by the local property tax base.

Given the higher proportion of non-residential valuation (16.7%) of the North Plainfield tax base as compared with most neighboring communities along the Route 22 corridor (see Exhibit 4), it would appear that the Borough is uniquely situated to ensure a stable tax base into the near future through the encouragement of private redevelopment of commercial properties along the highway corridor and throughout the Somerset Street central business area.

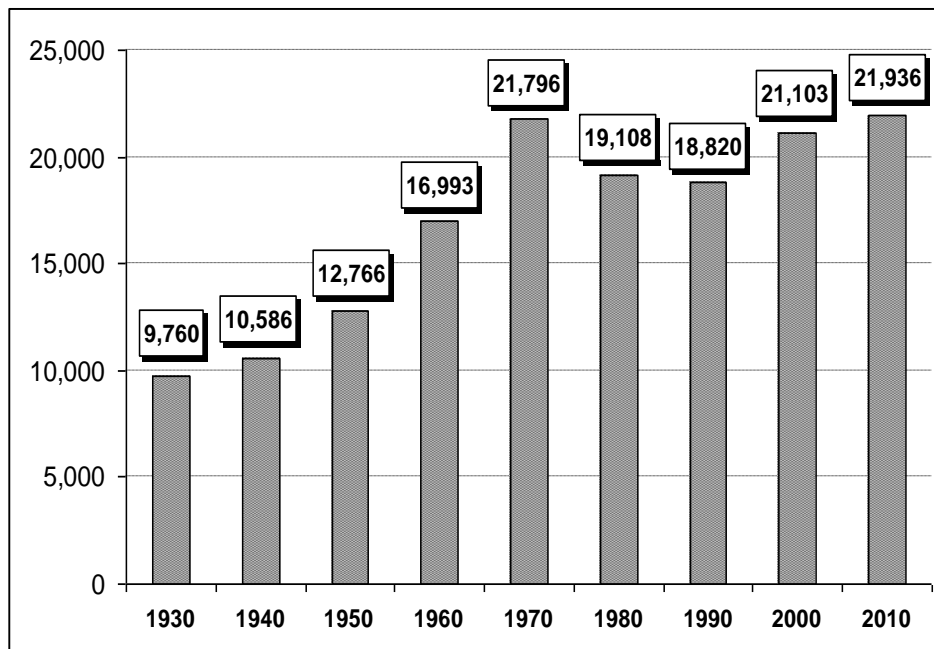
POPULATION

Population Characteristics

As reported by the U.S. Census, the resident population of North Plainfield steadily increased from 1930 (9,760 persons) to 1970 (21,796 persons). This more than two-fold increase in population over forty years was followed by a decline in resident population (-13.6%) over the next 20 years to 18,820 persons in 1990. These trends are illustrated on Exhibit 6. As shown, the Borough's population has gradually increased from 1990, to 21,103 persons (+12.1%) in 2000, and again through 2010, to 21,936 persons (+3.8 %). Overall, with only a moderate change in land use development patterns in the Borough over the past forty years, the resident population has remained relatively stable, rising slightly from 1970 through 2010, by less than one percent (140 persons).

The Borough remains the most densely developed municipality in Somerset County, at 7,850 persons per square mile. This compares to a population density of 1,072 persons per square mile for Somerset County and 1,195 persons per square mile for New Jersey. With respect to the surrounding communities, the 2010 Census reports a population density of 8,270 persons per square mile for the City of Plainfield, 1,611 persons per square mile for Green Brook Township, and 963 persons/sq. mile for Watchung Borough. Population density for nearby municipalities of similar character include Dunellen Borough (6,895 persons/sq. mile); Bound Brook Borough (6,270 persons/sq. mile); and, Fanwood Borough (5,454 persons/sq. mile).

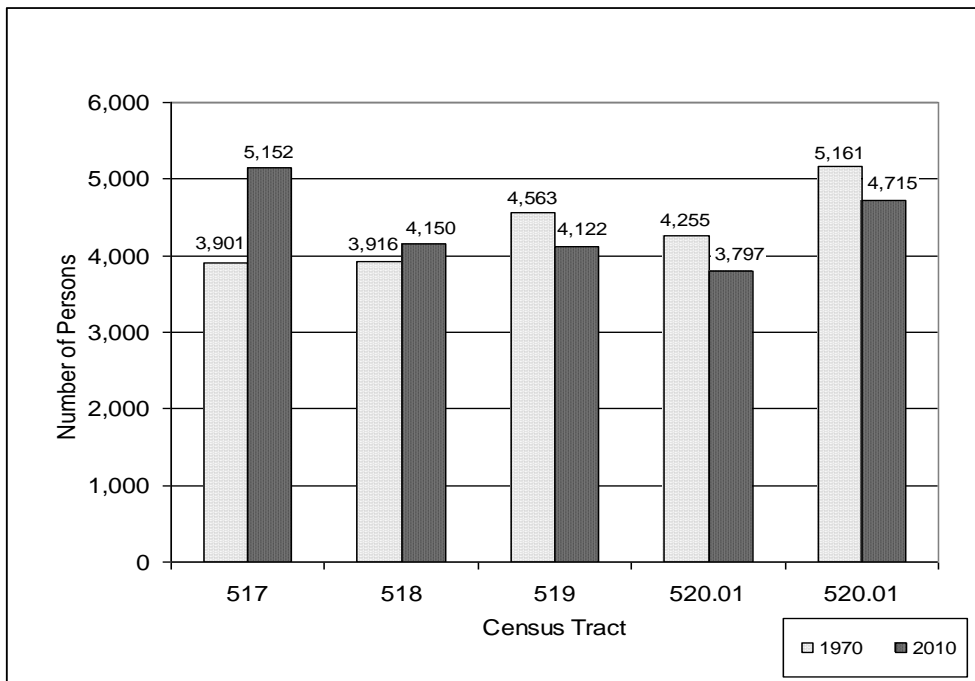
Exhibit 6
Population Trends, 1930-2010
Borough of North Plainfield



Source: US Census.

Exhibit 7 provides a comparison of population reported by the US Census in 1970 and 2010, by census tract. Plate 9 illustrates these census tracts for North Plainfield. Although the Borough's population has remained stable over the past forty years, the chart below shows that the population in census tracts 517 and 518 (vicinity of central business area) increased by 1,485 persons, or 19 percent, while the outlying areas of the Borough (census tracts 519, 520.01 and 520,02) decreased by 1,345 persons, or -9.6 percent.

Exhibit 7
Population by Census Tract, 1970 vs. 2010
Borough of North Plainfield



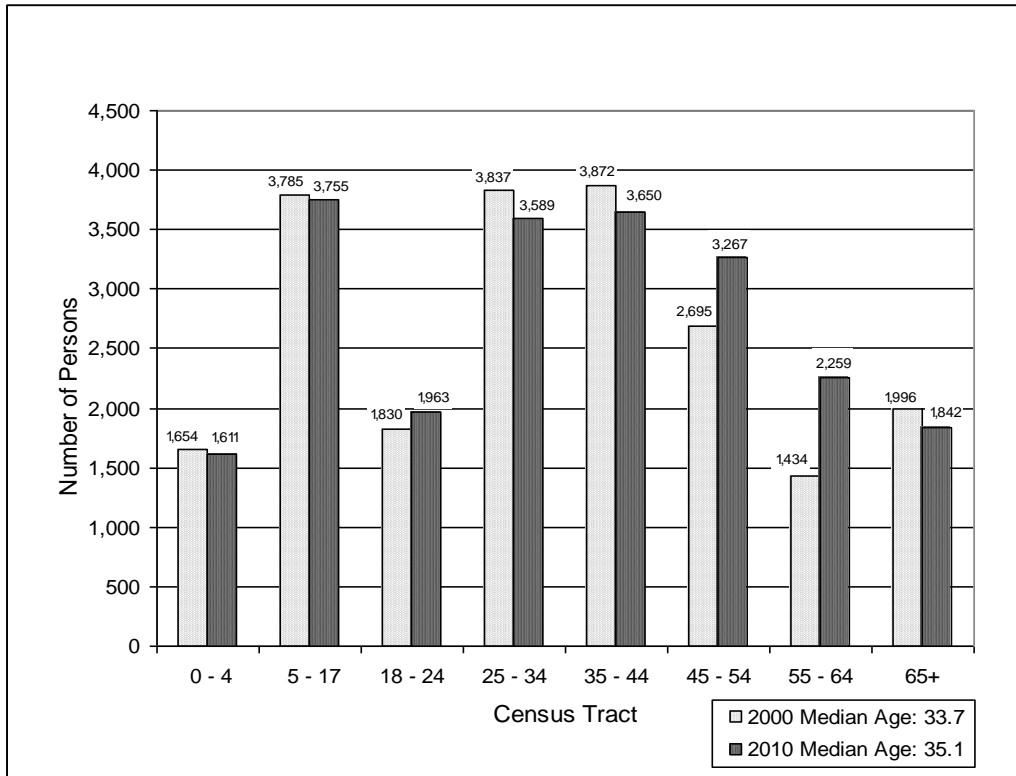
Source: US Census.

Age distribution reported by the Census for 2000 and 2010 is provided on Exhibit 8. Overall, the data indicates that the Borough's population is aging at a similar rate to that of Somerset County and the state of New Jersey. As shown, the individual age cohorts for North Plainfield residents age 24 years of age and younger have fluctuated slightly since the 2000 Census, while the age cohorts for persons age 25 to 34 years of age and 35 to 44 years show a marked decrease between 2000 and 2010 (collectively, 36.5% vs. 33.0%). Meanwhile, the age cohorts for persons 45 to 54 years of age and 55 to 64 years show a significant increase (collectively, 19.6 % vs. 25.2).

A detailed analysis of Exhibit 8 shows that the resident population age 45 to 65 increased by a total of 1,397 persons, or 33.8 percent, while the combined age groups for residents age 44 years of age or less decreased by 410 person, or -2.7 percent. Overall, the median age

for North Plainfield increased from 33.7 years of age in 2000, to 35.1 years of age in 2010, while for Somerset County and New Jersey from 2000 to 2010, the median age increased from 37.2 to 40.2 years of age for the county, and 36.7 to 39.0 years of age for the state, respectively.

Exhibit 8
Age Distribution
Borough of North Plainfield
2000 vs. 2010



Source: US Census.

The Borough’s resident population is increasingly diverse according to the 2010 Census. In 2000, the Borough population reporting as “non-white” (including “more than one race other than white”) was approximately 7,796 persons, or 36.9 percent of the total population. In 2010, the Census reports that approximately 9,870 persons reported as non-white (45.0 percent). This reflects a 26.6 percent increase since 2000. With respect to persons of Hispanic or Latino origin, this population group has significantly increased over the past decade. In 2000, the Census reported 6,916 residents of Hispanic or Latino origin in North Plainfield, or 32.8 percent of the total resident population. In 2010, this segment of the Borough population increased by over forty percent to 9,699 persons, accounting for over 44 percent (44.2%) of the total resident population.

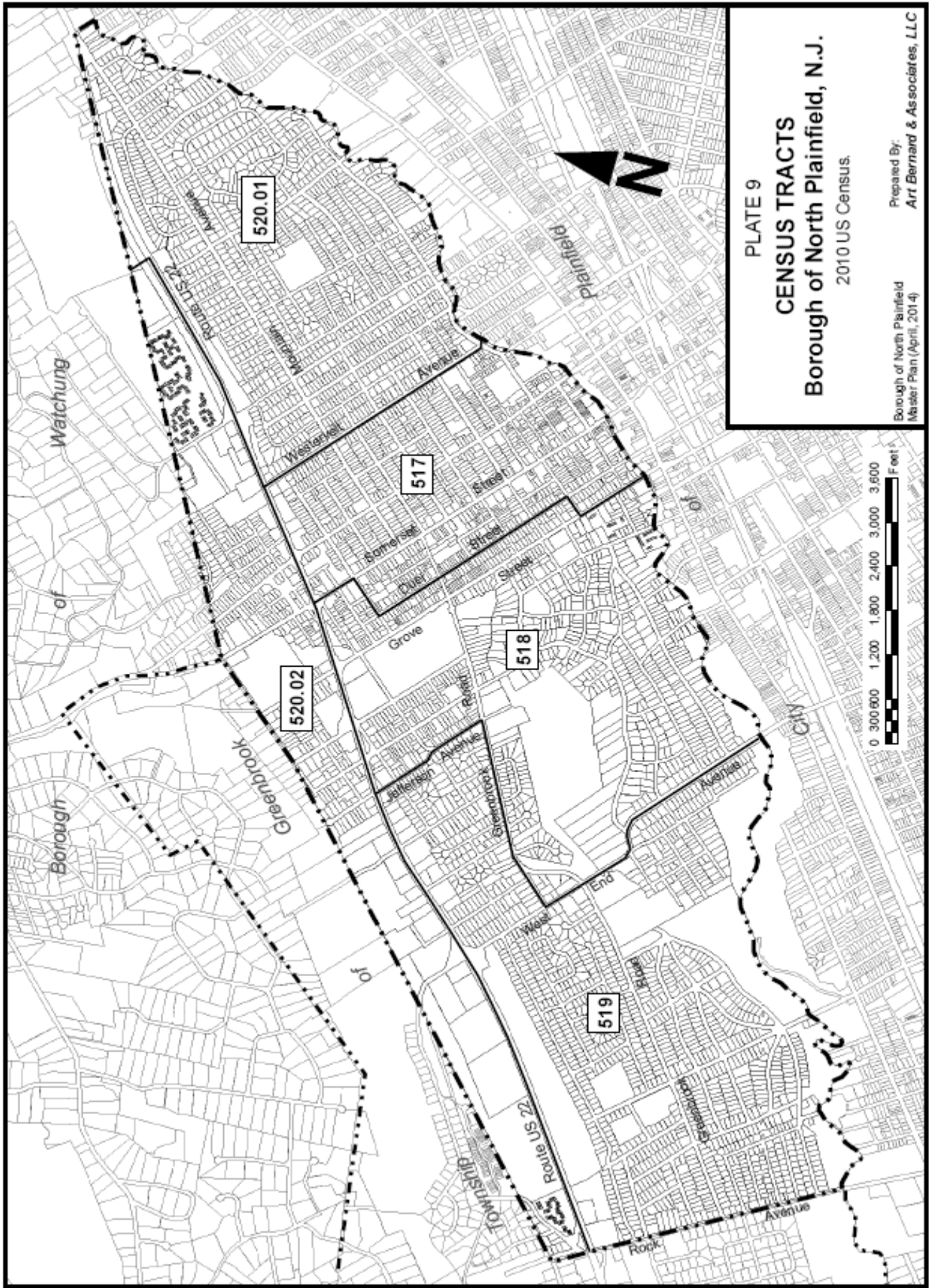


PLATE 9
CENSUS TRACTS
Borough of North Plainfield, N.J.
 2010 US Census

Prepared By:
 Art Bernard & Associates, LLC



A review of census tract-level data for the Borough indicates that of the 9,699 persons of Hispanic or Latino origin residing in North Plainfield, 62.4 percent reside with the central area of the Borough (census tracts 517 and 518). In fact, of the total population residing in these census tract areas, 3,766 persons (73.1 percent) residing in census tract 517 are of Hispanic or Latino origin. In census tract 518, 55.1 percent (2,286 persons) of the resident population is of Hispanic or Latino origin. The next largest accounting for this population group is in census tract 520.02, where 1,743 persons (37.0 percent) reside in largely multi-family development complexes.

Given this increase in persons of Hispanic or Latino origin, it is imperative that the Borough continue to expand bilingual communication in all aspects of governmental affairs. This will promote the general welfare of the community through increased awareness and involvement of all citizens in government services and programs.

Population Projections

Population projections were prepared in 2009, by the North Jersey Transportation Planning Association (NJTPA), a regional metropolitan planning organization authorized by the Federal Highway Administration for the administration and planning of future transportation improvements throughout north New Jersey. According to the NJTPA projections, the population for North Plainfield in the year 2035 is projected to be 22,540 persons, representing a modest growth of only 2.8 percent over the 2010 population reported by the Census. For Somerset County, the NJTPA projects a total population of 371,000 persons in 2035, for an increase of 14.7 percent from 2010.

It is important to note that the NJTPA projections were prepared prior to the 2010 Census. Only recently, has the U.S. Census Bureau begun dissemination of detailed data and information upon which projections of population or other demographic information will likely be updated. While it is expected that Somerset County will continue to see new development, with a corresponding increase in population and employment, etc. in the future, based upon the population data presented above, and the near-full development of North Plainfield, it is apparent that absent any major redevelopment in the Borough or major shift in residential development patterns, the Boroughs population will remain stable into the future.

EMPLOYMENT & INCOME

With the beginning of the “Great Recession” in the latter half of 2008, the overall economy of the Northeast – New York Metropolitan area, and the nation as a whole has experienced a significant decrease in economic growth and activity. This downturn in the economy has negatively impacted income levels, employment opportunities, and the overall labor market. Contributing to the economic slowdown, a downturn in the housing market in New Jersey and throughout certain areas of the country has also occurred, resulting in declining housing values and a rise in mortgage loan foreclosures.

As of the preparation of the Master Plan basic studies update, detailed economic data collected in the April, 2010 U.S. Census is yet to be released. The North Plainfield Master Plan Reexamination Report, adopted in January, 2010, included economic data for the borough published in the 2000 Census. In order to provide a local and regional overview of economic conditions for the Borough and the surrounding region, this section of the basic studies update will provide a brief summary of the 2000 economic data, with updated data as available.

Labor Force & Employment

The 2000 Census reported that the resident population 16 years old and older comprised 16,180 persons, of which 11,554 persons were in the labor force. The number of employed persons in the labor force in 2000 was 10,967 persons, resulting in an unemployment rate of 5.1 percent (587 unemployed persons). According to the New Jersey Labor and Workforce Department, the estimated labor force for North Plainfield in 2011 was 12,920 persons. With the recent downturn in the local and regional economy, the Labor and Workforce Department estimates that of the total annual average labor force in North Plainfield in 2011 (12,920 persons), 1,245 persons, or 9.6% were unemployed. By comparison, the estimated average annual unemployment rate for Somerset County in 2011 was 7.1 percent, while for New Jersey the unemployment was 9.3 percent.

The highest percentage of the Borough’s workers reported in the 2000 Census that they worked in the manufacturing sector (19.0 percent). Other sectors attracting a large segment of the Borough’s work force in 2000 included: educational, health and social services (16.2 percent); professional, management and administration (12.8 percent); retail trade (11.1 percent); finance, insurance and real estate (7.1 percent); and, construction (6.3 percent). Exhibit 9 presents a proportional breakdown of civilian employment for North Plainfield residents by industry type as reported in the 2000 Census, compared with estimates of the proportion of employed persons by industry type in 2010 (US Census American Community Survey 2006-2010).

Exhibit 9

Employed Civilian Population by Industry Type

Industry Type	North Plainfield		Somerset Cty.	New Jersey
	2000 ^a	2010 ^b	2010 ^b	2010 ^b
Manufacturing	19.0%	16.3%	13.7%	9.4%
Educational, Health, Social Servs.	16.2%	18.9%	21.3%	22.3%
Professional, Management, Adm.	12.8%	8.9%	14.5%	12.2%
Retail Trade	11.1%	12.4%	9.4%	11.1%
Finance, Insurance, Real Estate	7.1%	8.0%	11.6%	9.1%
Construction	6.3%	6.6%	5.4%	6.1%
Transportation, Warehouse, Utils.	6.1%	8.1%	3.9%	5.7%
Information	5.0%	3.3%	4.6%	3.2%
Arts, Entertainment, Food Services	4.9%	7.4%	5.5%	7.7%
Wholesale Trade	4.3%	2.9%	3.4%	3.8%
Public Administration	3.2%	1.8%	2.8%	4.6%
Other Services	3.5%	5.1%	3.6%	4.4%
Agriculture, Mining, Fishing, For	0.4%	0.2%	0.3%	0.3%

^aUS Census, 2000

^bAmerican Community Survey, 5-Year Estimates, 2006-2010 (US Census)

Exhibit 10 presents the 2000 Census journey to work data for North Plainfield. For comparison purposes, the exhibit also presents the 1970 data for the borough. As shown, although the commuting patterns are somewhat similar, there is a marked increase in the number of persons travelling to work by auto, as compared to the commuting patterns reported in 1970. Overall, the number of persons travelling to work by auto increased from 84.8 percent in 1970, to 89.6 percent in 2000. Commensurate with this increase in journey to work by auto, the use of public transit has declined from 7.0 percent in 1970, to 4.4 only percent in 2000. Likewise, the portion of workers walking to work decreased from 4.8 percent in 1970 to only 1.8 percent in 2000. The number of persons in the labor force utilizing 'other' means to travel to work remained relatively unchanged between 1970 and 2000 (1.9% vs. 2.1%), while persons working at home increased to 2.0 percent in 2000, from 1.6 percent in 1970. The mean travel time to work for employed Borough residents in 2000 was 25.7 minutes.

Exhibit 10
Journey to Work (2000 US Census)
Borough of North Plainfield, 1970 v. 2000

<u>MODE</u>	<u>1970</u>		<u>2000</u>	
	#	%	#	%
Automobile	8,506	84.8%	9,611	89.6%
- Drive Alone	7,364	73.4%	8,240	76.9%
- Passenger (Carpooled)	1,142	11.4%	1,371	12.8%
Public Transit (bus, rail)	698	7.0%	471	4.4%
Walk	481	4.8%	197	1.8%
Work at Home	164	1.6%	213	2.0%
Other (bicycle, motorcycle, other)	<u>187</u>	<u>1.9%</u>	<u>230</u>	<u>2.1%</u>
Total	10,036	100.0%	10,722	100.0%

Income Conditions

The 2000 Census reported that the 1999 median household income for North Plainfield was \$55,322. By comparison, the 1999 median household income for Somerset County and New Jersey was \$76,933 and \$55,146, respectively. Data published by the US Census Bureau (see Exhibit 11) indicates that in 2010, the median household income in the borough was \$67,815, while for Somerset County and New Jersey, the median income was \$97,440 and \$69,811, respectively. Although the median household income for the Borough in 2010 is comparable to the median income reported at the state level (\$67,815 vs. \$69,811), due to the Borough's larger household size, the per capita income for North Plainfield is substantially lower than New Jersey (\$27,529 vs. \$34,858).

As shown on Exhibit 11 below, 14.0 percent of North Plainfield households had incomes of less than \$25,000 in 2010, and 22.0 percent had incomes of between \$25,000 and \$50,000. Thirty-five percent reported incomes of between \$50,000 and \$100,000, while 16.6 percent reported income of between \$100,000 and \$150,000. Households reporting income greater than \$150,000 accounted for 12.6 percent of the borough.

Exhibit 11

**Household Income, Median Income, Per Capita Income (2010)*
North Plainfield, Somerset County, New Jersey**

	North Plainfield		Somerset County		New Jersey	
	#	%	#	%	#	%
Less than \$10,000	150	2.1%	2,501	2.2%	167,356	5.3%
\$10,000 to \$14,999	230	3.2%	2,205	1.9%	126,043	4.0%
\$15,000 to \$19,999	309	4.3%	2,659	2.3%	125,327	3.9%
\$20,000 to \$24,999	315	4.4%	2,745	2.4%	126,269	4.0%
\$25,000 to \$29,999	213	3.0%	2,874	2.5%	125,691	4.0%
\$30,000 to \$34,999	239	3.3%	3,420	3.0%	125,205	3.9%
\$35,000 to \$39,999	344	4.8%	3,209	2.8%	117,146	3.7%
\$40,000 to \$44,999	397	5.5%	3,366	2.9%	124,662	3.9%
\$45,000 to \$49,999	387	5.4%	3,168	2.8%	112,358	3.5%
\$50,000 to \$59,999	374	5.2%	6,266	5.5%	233,173	7.3%
\$60,000 to \$74,999	1,125	15.6%	10,339	9.0%	304,514	9.6%
\$75,000 to \$99,999	1,027	14.2%	15,971	14.0%	428,486	13.5%
\$100,000 to \$24,999	773	10.7%	13,956	12.2%	332,631	10.5%
\$125,000 to \$149,999	429	5.9%	10,041	8.8%	216,339	6.8%
\$150,000 to \$199,999	597	8.3%	13,357	11.7%	248,860	7.8%
\$200,000 +	<u>311</u>	4.3%	<u>18,354</u>	16.0%	<u>262,009</u>	8.2%
Est. No. Households	7,220	100.0%	114,431	100.0%	3,176,069	100.0%
Median Income:	\$67,815		\$97,440		\$69,811	
Per Capita Income:	\$27,529		\$47,067		\$34,858	

*Source: American Community Survey, 5-Year Estimates, 2006-2010 (US Census)

Exhibit 12 presents poverty status for North Plainfield, Somerset County and New Jersey for 2010, as estimated in the US Census American Community Survey. As shown, poverty status for the total population of North Plainfield is 7.3 percent, with 5.9 percent of the population age 18 and over in poverty status, and 11.8 percent of children (age 0 to 17) in poverty status. The poverty rates in North Plainfield are somewhat similar to the State of New Jersey as a whole, while compared to Somerset County, the borough's total population in poverty status is more than double that of the county's (7.3% vs. 3.6%). In North Plainfield, the portion of population, age 0 to 17 in poverty (11.8%), is twice that of the poverty status for persons age 18 and over. This condition likely reflects a somewhat larger household size for lower income families and households, and the likelihood that a larger portion of lower income households comprise single-parent households.

Exhibit 12

**Poverty Status, by Age Group (2010)*
North Plainfield, Somerset County, New Jersey**

	<u>Poverty Status Total Population</u>	<u>Poverty Status Population Age 0-17</u>	<u>Poverty Status Population Age 18 & Over</u>
New Jersey	9.1%	12.7%	8.0%
Somerset County	3.6%	4.0%	3.4%
North Plainfield	7.3%	11.8%	5.9%

*Source: American Community Survey, 2006-2010 (US Census)

HOUSEHOLDS & FAMILIES

Exhibit 13 presents the number of households and average household size at the local, county and state level for 2000 and 2010, as reported by the US Census. As shown, the average household size for North Plainfield remains higher than either the county or state, rising slightly from 2.90 in 2000, to 2.94 in 2010. During the same period, the household size for Somerset County rose similarly, from 2.69 in 2000, to 2.71 in 2010, and more closely reflected the average household size at the state level, which remained at 2.68 persons per household.

Exhibit 13

**Households & Household Size (2000 vs. 2010)
North Plainfield Borough, Somerset County, and State of New Jersey**

	2000		2010	
	No. of Households	Household Size (persons per unit)	No. of Households	Household Size (persons per unit)
North Plainfield	7,202	2.90	7,448	2.94
Somerset County	108,884	2.69	117,759	2.71
State of New Jersey	3,064,645	2.68	3,214,360	2.68

Source: US Census

Exhibit 14 provides the average household size for the Borough, county and state, based upon tenure. As would be expected, the average household size for North Plainfield is higher than either Somerset County or New Jersey regardless of owner-occupied or renter-occupied status. In each instance, whether at the local, county or state level, the average household size for owner-occupied units was higher than units which were renter-occupied.

Exhibit 14

**Household Size by Tenure (2000 vs. 2010)
North Plainfield Borough, Somerset County, and State of New Jersey**

	2000		2010	
	Owner-Occupied Household Size	Renter-Occupied Household Size	Owner-Occupied Household Size	Renter-Occupied Household Size
North Plainfield	2.99	2.78	3.01	2.85
Somerset County	2.78	2.36	2.80	2.43
State of New Jersey	2.81	2.43	2.79	2.47

Source: US Census

With respect to the number of family-occupied units and average family size, Exhibit 15 presents the data at the Borough, county and state level for 2000 and 2010. As shown, although the average family size for North Plainfield is also higher than the county or the state level, the average family size remained very stable for all levels since 2000.

Exhibit 15

**Family Households & Family Size (2000 vs. 2010)
North Plainfield Borough, Somerset County, and State of New Jersey**

	2000		2010	
	No. of Families	Family Size (persons per family)	No. of Families	Family Size (persons per family)
North Plainfield	5,086	3.40	5,265	3.40
Somerset County	78,409	3.19	84,616	3.22
State of New Jersey	2,154,839	3.21	2,226,606	3.22

Source: US Census

At the census tract level for North Plainfield (see Exhibit 16), the average household size increased in all areas of the Borough, except for census tract 520.02, which exhibits a large number of multi-family rental apartments and condominiums. Average family sizes fluctuated slightly in various parts of the Borough as shown, with the westerly and easterly portions of the Borough (predominantly single-family detached housing) exhibiting modest increases.

Exhibit 16
Households & Families by Census Tract
North Plainfield Borough
2000 - 2010

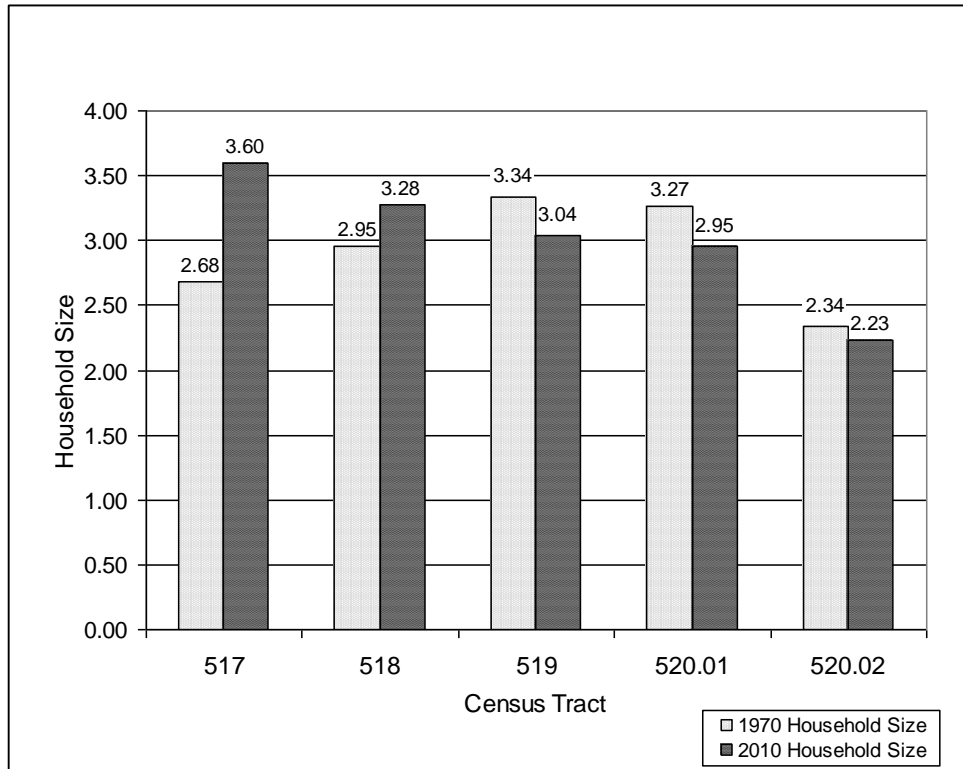
Census Tract	2000					2010				
	Persons	Total Households		Family Households		Persons	Total Households		Family Households	
	(#)	(#)	Size	(#)	Size	(#)	(#)	Size	(#)	Size
517	4,952	1,434	3.45	1,071	3.78	5,152	1,425	3.60	1,081	3.77
518	4,299	1,322	3.21	964	3.63	4,150	1,266	3.28	960	3.57
519	3,914	1,376	2.84	1,081	3.25	4,122	1,355	3.04	1,086	3.39
520.01	3,624	1,252	2.89	991	3.23	3,797	1,287	2.95	1,005	3.31
520.02	4,314	1,818	2.31	979	3.11	4,715	2,115	2.23	1,133	3.00
Total	21,103	7,202	2.90	5,086	3.40	21,936	7,448	2.94	5,265	3.40

Source: US Census

For a historical perspective, Exhibit 17 presents the average household size in North Plainfield in each census tract, for 1970 and 2010. As shown, the central portion of the Borough (census tracts 517 & 518) experienced a significant increase in average household size, increasing by approximately 22 percent over the past 40 years. The largest increase occurred in census tract 5.17 (vicinity of town between Duer Street and Westervelt Avenue, where the average household size increased 34 percent, from 2.68 to 3.60 persons per household. Meanwhile, household size in the remainder of the Borough decreased by approximately eight percent since 1970, with the westerly and easterly portions of the Borough experiencing the largest decrease (approximately -10%).

Exhibit 17

**Average Household Size by Census Tract
Borough of North Plainfield
1970 vs. 2010**



Source: US Census

HOUSING

Although detailed housing data from the 2010 US Census has yet to be released at the municipal level, general data is available to provide a 'picture' of housing characteristics for North Plainfield and the extent to which any significant changes to the borough's housing stock have occurred since last reported in the 2000 Census. This section of the basic studies will update housing characteristics in the Borough and surrounding region through 2010, with a brief overview of the 2000 Census housing data presented in the 2010 North Plainfield Master Plan Reexamination Report.

As of the 2010 Census, there were 7,848 total housing units in North Plainfield Borough. This marks a 6.2 percent increase in total housing units in the Borough since 2000. Exhibit 18 presents the total number of housing units for North Plainfield, Somerset County, and

New Jersey. In addition, this exhibit also provides the occupancy status and vacancy rates for housing units. The increase in the number of total units in the Borough was less than either the County or the State, which is to be expected given the relatively near-full development conditions in North Plainfield. With respect to vacancy rates in North Plainfield, while the vacancy for the Borough is somewhat lower than the county's and substantially lower than the state's, overall the vacancy rate at all three levels has climbed significantly since 2000. This is a clear indication of the recent downturn in the local and regional economy and associated downturn in the housing market. In the case of North Plainfield, the vacancy rate has essentially doubled since 2000, with Somerset County and New Jersey experiencing a 63 percent increase and a 28 percent increase since 2000, respectively.

Exhibit 19 presents the occupancy status for occupied housing units in North Plainfield, as well as for Somerset County and New Jersey. The exhibit shows that the rental occupancy rate in North Plainfield is substantially higher than either Somerset County or New Jersey. As shown, the proportion of renter occupied housing in the Borough is slightly higher for 2010 as compared to the occupancy data reported in the 2000 Census (41.2% vs. 43.4%). The larger proportion of renter-occupied units in North Plainfield reflects the number of multi-family apartments and residences in the Borough, as compared to either Somerset County or the State.

For a historical perspective, Exhibit 20 presents the number of housing units in North Plainfield by census tract for 1970 and 2010, as reported by the Census. As shown, the overall increase in units between 1970 and 2010, is fairly well distributed throughout the Borough, with the highest concentration of units located in the northerly portion of the Borough in vicinity of the various multi-family residential developments along westbound Route 22.

The 2010 North Plainfield Master Plan Reexamination Report provided detailed Census data concerning housing structures in North Plainfield, New Jersey, and for the tri-county housing region (Somerset County, Hunterdon County, Middlesex County) as defined by the New Jersey Council On Affordable Housing (COAH). As noted in the Reexamination Report, the 2000 Census reported that the housing stock of North Plainfield was more diverse than either the State or the housing region. As of the 2000 Census, less than half of the Borough's housing stock (49 percent) consisted of single-family detached dwellings. In fact, aside from single family attached housing (i.e. condominiums), 47 percent of the Borough's housing stock comprised multi-family structures (two or more units per structure). At the State level, only 36.2 percent of the housing stock comprised multi-family structures, while for the three-county housing region, only 29.8 percent of the housing stock comprised multi-family structures.

Exhibit 18

Housing Units by Occupancy Status
North Plainfield, Somerset County, and State of New Jersey
2000 - 2010

	HOUSING UNITS										Increase in Total Housing Units
	2000					2010					
	Total Housing Units	Occupied Units	Vacant Units	Vacancy Rate (%)	Total Housing Units	Occupied Units	Vacant Units	Vacancy Rate (%)			
North Plainfield	7,393	7,202	191	2.6%	7,848	7,448	400	5.1%	455	6.2%	
Somerset County	112,023	108,984	3,039	2.7%	123,127	117,759	5,368	4.4%	11,104	9.9%	
State of New Jersey	3,310,275	3,064,645	245,630	7.4%	3,553,562	3,214,360	339,202	9.5%	243,287	7.3%	

Source: US Census

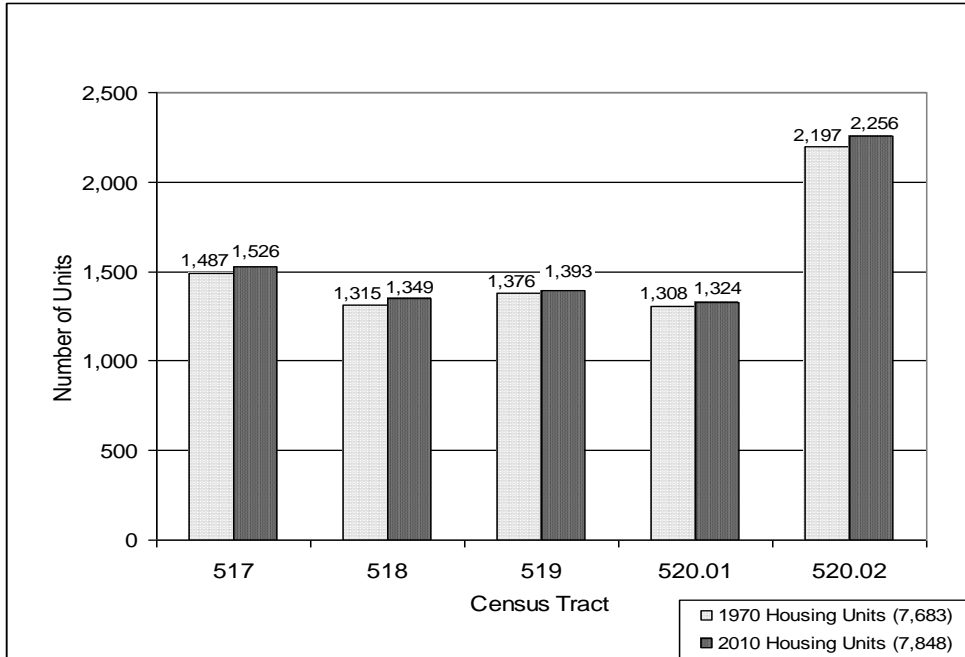
Exhibit 19
Occupied Housing Units by Tenure
North Plainfield, Somerset County, and State of New Jersey
2000 - 2010

	OCCUPIED HOUSING UNITS BY TENURE										Increase in Total Occupied Housing Units	
	2000					2010						
	Total Occupied Housing Units	Owner Occupied (#)	Owner Occupied (%)	Renter Occupied (#)	Renter Occupied (%)	Total Occupied Housing Units	Owner Occupied (#)	Owner Occupied (%)	Renter Occupied (#)	Renter Occupied (%)		
North Plainfield	7,202	4,238	58.8%	2,964	41.2%	7,448	4,212	56.6%	3,236	43.4%	246	3.4%
Somerset County	108,984	84,167	77.2%	24,817	22.8%	117,759	90,430	76.8%	27,329	23.2%	8,775	8.1%
State of New Jersey	3,064,645	2,011,473	65.6%	1,053,172	34.4%	3,214,360	2,102,465	65.4%	1,111,895	34.6%	149,715	4.9%

Source: US Census

Exhibit 20

**Total Housing Units by Census Tract
Borough of North Plainfield
1970 vs. 2010**



The 2010 North Plainfield Master Plan Reexamination Report provided detailed Census data concerning housing structures in North Plainfield, New Jersey, and for the tri-county housing region (Somerset County, Hunterdon County, Middlesex County) as defined by the New Jersey Council On Affordable Housing (COAH). As noted in the Reexamination Report, the 2000 Census reported that the housing stock of North Plainfield was more diverse than either the State or the housing region. As of the 2000 Census, less than half of the Borough’s housing stock (49 percent) consisted of single-family detached dwellings. In fact, aside from single family attached housing (i.e. condominiums), 47 percent of the Borough’s housing stock comprised multi-family structures (two or more units per structure). At the State level, only 36.2 percent of the housing stock comprised multi-family structures, while for the three-county housing region, only 29.8 percent of the housing stock comprised multi-family structures.

The continued aging of the Borough’s housing stock is an important concern, in terms of maintaining property values and the quality of life for Borough residents, while providing safe, affordable housing to meet the needs of all Borough residents. As noted in the 2010 Reexamination Report, the 2000 Census reported that 45.8 percent of the housing stock was constructed prior to 1950 (over 60 years ago). In fact, 28.9 percent of the Borough’s

housing stock was built prior to 1940 (over 70 years ago). The vast majority (84.4%) of the Borough's housing stock was built prior to 1970. By comparison, the 2000 Census reported that in Somerset County, only 19.0 percent of the Somerset County housing stock was constructed prior to 1950, and 47.1 percent was constructed prior to 1970. Given the age of the Borough's overall housing stock, it is imperative that the Borough seek to encourage all residents to properly maintain residential properties through stringent enforcement of the property maintenance code.

Overcrowding of residential units has been an ongoing concern of the Borough's code enforcement department for many years. Overcrowding conditions generally result in overuse of residential structures and often results in unsafe living conditions or fire hazard. In addition, illegal boarding conditions has also resulted in a continued decline to a portion of the Borough's housing stock, affecting the quality of life for residents and the surrounding neighborhood, as well as depreciating property values in some sections of the Borough. The 2010 Reexamination Report provided occupancy data (number of persons per room) for the Borough and Somerset County as reported in the 2000 Census. An overcrowded unit is often defined as housing more than one person per room. Based on this definition, in North Plainfield 5.3 percent of the owner-occupied housing units and 18 percent of the renter-occupied housing units were overcrowded in 2000, as reported by the Census. This compares to 1.3 percent of overcrowded owner-occupied housing and 11.1 percent of overcrowded renter-occupied housing at the county level.

As noted in the above discussion and as noted in the Borough's 2008 Housing Element, the Borough's housing stock is relatively old and a relatively large portion of the Borough's rental housing stock (18.0%) is overcrowded. COAH's formula for estimating substandard housing units occupied by low and moderate income households considers the age of the housing stock and overcrowding as two (2) prime indicators of substandard housing. Based upon these factors and other housing characteristics, COAH determined that part of the Borough's Third Round affordable housing obligation included a Rehab Share of 282 units. Regardless of any future obligation imposed by the State on the part of North Plainfield to provide affordable housing, it is vitally important that the Borough continue existing measures (i.e. Friends of the Carpenter), and also seek additional funding for new programs to improve substandard housing.

TRANSPORTATION & CIRCULATION

Circulation throughout a community is integral to local and regional land use development patterns and activities, not only for commuters, residents and the business sector, but also for access to community facilities and services and for effective police, emergency and fire protection. It is important therefore, to regularly maintain transportation facilities, while at the same time develop a comprehensive program at all levels of government to evaluate and coordinate the need for future transportation improvements in a timely manner.

Regional Transportation Planning

While municipal-level transportation planning concerns local roadways and transportation infrastructure, many aspects of the Borough's transportation network also involve county, regional and state-level transportation agencies. These agencies include the New Jersey Department of Transportation (NJDOT); North Jersey Transportation Planning Authority (NJTPA); New Jersey Transit; and Somerset County. Short-term and long-range plans are prepared by these agencies to establish a maintenance plan for existing transportation systems, and to plan for future improvements throughout the area. This regional approach to transportation system's maintenance and planning recognizes that local infrastructure is greatly impacted by regional and inter-municipal traffic. Addressing traffic conditions on the regional level serves to minimize these local impacts, while addressing the broader need to efficiently accommodate regional transportation and circulation patterns. A brief discussion of the various regional transportation plans affecting North Plainfield and the surrounding region, including the underlying premise(s) upon which these documents were prepared is provided as follows:

The "2011 – 2021 Statewide Transportation Improvement Program" (STIP), dated October 2, 2011, and the "New Jersey Long Range Transportation Plan" (a.k.a. "Transportation Choices 2030"), dated January 2010, were prepared by NJDOT, in collaboration with NJ Transit and the NJTPA. These documents plan for and establish a working time frame for the implementation of necessary transportation infrastructure improvements and to achieve a sustainable transportation system throughout the state.

The New Jersey Transportation Planning Authority (NJTPA) adopted the "Plan 2035 Regional Transportation Plan for North New Jersey", in August, 2009, which was utilized by NJDOT in the preparation of the State Transportation Improvement Plan. The NJTPA is a federally authorized 13-county metropolitan planning authority (MPO) in north New Jersey, which provides local guidance for the expenditure of federal highway transportation funds. The NJTPA ensures that federal funds are used in a cost effective manner to improve mobility, support economic progress, and protect the environment.

The foundation for the above noted statewide transportation plans includes the need to invest in infrastructure improvements; reduce traffic congestion; increase roadway efficiency and capacities where necessary; incorporate smart-growth strategies through redevelopment and investment in 'mature' metropolitan areas; promote energy efficient transportation systems and patterns; and, reduce adverse environmental impacts typically associated with frequent motor vehicle use. Overall, these plans establish the need to promote the use of alternative transportation systems (i.e. public transit, carpooling, bicycle, pedestrian), thereby reducing the number and length of single-occupant vehicle trips.

The Somerset County Planning Board adopted an updated circulation element in November, 2011, entitled "Making Connections: Somerset County's Circulation Plan Update". The plan was prepared as part of the North Jersey Transportation Planning Authority's Sub-regional Studies Program, and addresses the need to improve mobility and safety, and to identify county priorities for transportation-related projects. The County Circulation Plan focuses on regional and local transportation priorities by blending land use and highway/transit solutions, infrastructure improvements, and climate change mitigation and adaptation efforts to attain the following goals and objectives:

- Creation of a robust multi-modal transportation network
- Maintenance and improvement of existing highway systems
- Expansion of the regional transit system
- Enhancement of traffic safety for all travelers and modes
- Promotion of sustainability efforts

Since many major thoroughfares in the Borough are under jurisdiction of Somerset County, it is important for North Plainfield to follow the strategies and recommendations set forth in Making Connections, so that development and redevelopment in the Borough, coupled with necessary transportation infrastructure, provides sustainable, alternative choices in transportation for Borough residents and surrounding communities.

In September, 2010, Somerset County issued the Somerset County Capital Improvement Program, 2010-2016, Project List for Roads, Intersections & Bridges (September, 2010), which identifies county-wide transportation improvements, including a number of infrastructure improvements in North Plainfield. A description of these improvements for county roads in the Borough is provided in the basic studies section entitled: "Roadways Functions, Conditions and Traffic Volumes" (p. 45).

Local Transportation Planning & Initiatives

North Plainfield Borough's transportation system and circulation patterns are largely established due to the Borough's near-full development and static land use patterns since

the late 1960's; proximity of the Borough to concentrated areas of development in central New Jersey; and, established regional transportation network, including among others Route U.S 22, Interstate Route 78, and the NJ Transit Raritan Valley rail line. Transportation systems in the Borough and surrounding area are generally operating at or near capacity during peak travel periods, and are routinely maintained and upgraded as necessary to provide safe, efficient travel for residents, commuters, business patrons, and for commercial/industrial commerce. Improvements to the Borough's transportation network, including roads and infrastructure, are typically implemented through capital improvement programs at the local, county and state level, based upon the an assessment of conditions, and an evaluation of necessary improvements to meet future needs.

There are several transportation improvements proposed in North Plainfield pursuant to the regional transportation planning initiatives and programs noted previously. These improvements are proposed to increase capacities of existing systems and to improve traffic flow throughout the region. Ongoing and future transportation systems and infrastructure improvements include the following:

- Somerset Street Streetscape Improvement Program – To date, streetscape improvements have been completed for the segment of Somerset Street between Mountain Avenue and Green Brook (Borough boundary with Plainfield). Improvements include brick paver sidewalks and crosswalks along Somerset Street, including lighting, street tree plantings and pedestrian handicap curbing treatments. The completion of streetscape improvements for the remaining section north of Mountain Avenue has been funded in the New Jersey STIP, and is expected to begin in 2012.
- Safe Routes To Schools – This program is federally-funded and administered by NJDOT to improve the ability of elementary and middle school students (grades K-8) to safely walk and bicycle to school. A study of the elementary schools (East End School, West End School and Stony Brook School) and intermediate school (Somerset School) and surrounding neighborhoods was recently completed to determine the need for improvements to pedestrian facilities for students travelling to and from school on foot, or bicycle. To implement these improvements, North Plainfield has submitted a grant application for funding for pedestrian-oriented improvements in vicinity of the elementary and intermediate school buildings.
- Route 22 Intelligent Traffic System/Corridor Improvement – The NJDOT 2012-2021 Statewide Transportation Improvement Program has slated a 13-mile segment of Route 22 for traffic signal timing and coordination improvements to improve traffic circulation flow along this commuter/land service highway. The entire 3.4 mile length of Route 22 in North Plainfield is included within this highway segment. Overall, the project will include time-based coordination of 18 traffic signals, with intersection geometry and signal timing improvements

at 13 locations. Construction is scheduled to be initiated in the fall, 2012, and take approximately 1-1/2 years to complete.

- Somerset County 2010-2016 Capital Improvement Program - Various ongoing and future transportation infrastructure improvements are planned in North Plainfield, including intersection geometry improvements, traffic signal installations and/or modifications, and roadway bridge and culvert improvements. These improvements are based upon a ranking system established by the county to prioritize and fund necessary infrastructure improvements. Details concerning these various county improvements are provided in the next section addressing the various major roadways in the Borough. Drainage improvements involving roadway, bridge or culvert reconstruction or renovation are provided in the basic studies section concerning public utilities and infrastructure (p. 80).
- North Plainfield Capital Roadway Improvement Program – The Borough conducts ongoing roadway reconstruction/resurfacing projects throughout the community, as necessary. These improvements are funded and implemented on an annual basis by the Borough. Road reconstruction/resurfacing program is coordinated with needed utility infrastructure improvements.

Transportation system improvements and ongoing initiatives for the Borough’s public roadways and transportation infrastructure are discussed in further detail in the following section.

Roadway Functions, Conditions & Traffic Volumes

Primary travel in the Borough occurs on several major thoroughfares including Route U.S. 22, Somerset Street, Watchung Avenue, Greenbrook Road, Mountain Avenue, West End Avenue, Rock Avenue, and several other local roadways. Route U.S. 22 is a state highway facility under the jurisdiction of the New Jersey Department of Transportation (NJDOT), while the remaining major roads are under the jurisdiction of Somerset County or North Plainfield Borough. These roadways serve regional, inter-municipal, and local travel through North Plainfield, as well as provide direct access to adjacent residential and non-residential uses. This conflict between inter-municipal/regional traffic and local traffic often results in traffic congestion during peak flow periods.

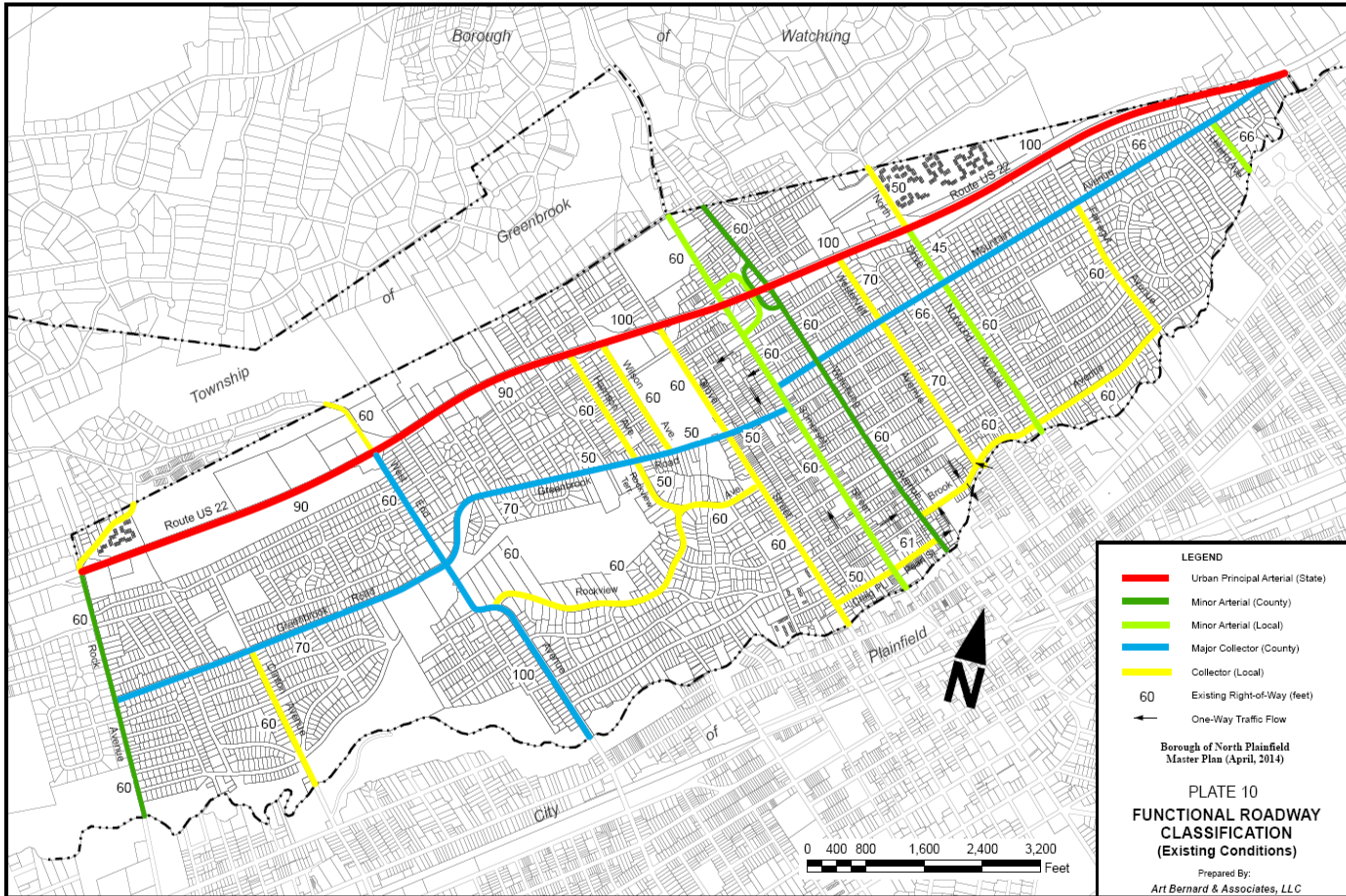
Plate 10 illustrates the Borough road system and functional classifications of all roadways. Exhibit 21 provides details for each major roadway in town, including existing functional classification, existing right-of-way, roadway length, pavement width, existence of curbs and sidewalks, and assessment of overall road condition. The functional classification of roadways in North Plainfield generally reflects the character of the traffic served. Major and minor arterial roadways accommodate regional and inter-municipal/county traffic, while major / minor collector roads provide access to these arterial roads. Local roads

Exhibit 21

Major Street Inventory
Borough of North Plainfield
August, 2012

<u>ROADWAY</u>	<u>Classification</u>	<u>Length (miles)</u>	<u>Right-of-way Width</u>	<u>Pavement Width (approx.)</u>	<u>Curbs / Sidewalks</u>	<u>Overall Condition</u>
STATE ROADS:						
- Route U.S. 22	Urban Principal Arterial	3.4	90 - 100 Feet	76 - 80 Feet	Yes / Minimal	Good
SOMERSET COUNTY ROADS:						
- Greenbrook Road (County Route 636)	Major Collector	2.0	50 - 70 Feet	34 - 40 Feet	Yes / Yes (Majority)	Good
- Mountain Avenue (County Route 642)	Major Collector	1.6	66 Feet	40 Feet	Yes / Yes	Good
- Rock Avenue (County Route 645)	Minor Arterial	0.9	60 Feet	40 - 45 Feet	Yes / Partial	Fair
- Watchung Avenue (County Route 531)	Minor Arterial	1.1	60 Feet	36 Feet	Yes / Yes	Good
- West End Avenue (County Route 649)	Major Collector	1.2	60 - 100 Feet	40 - 48 Feet	Yes / Yes (Majority)	Good
NORTH PLAINFIELD ROADS:						
- Somerset Street (County Route 531Z) ¹	Minor Arterial	1.2	60 Feet	40 Feet	Yes / Yes	Fair
- Brook Avenue	Collector	0.8	50 - 60 Feet	30 - 40 Feet	Yes / Partial	Good
- Clinton Avenue	Collector	0.4	60 Feet	40 Feet	Yes / Yes (Majority)	Fair
- Farragut Avenue	Collector	0.4	60 Feet	33 Feet	Yes / No	Fair
- Grove Street	Collector	0.9	60 Feet	35 Feet	Yes / Yes	Fair
- Leland Avenue	Collector	0.2	66 Feet	40 Feet	Yes / No	Fair
- North Drive	Collector	0.2	45 Feet	40 Feet	Partial / East Side Only	Fair
- Norwood Avenue	Collector	0.6	60 Feet	35 Feet	Minimal / Yes	Fair
- Westervelt Avenue	Collector	0.7	70 Feet	35 - 40 Feet	Partial / Partial	Good
- Wilson Avenue	Collector	0.5	60 Feet	40 Feet	Yes / South of Rte 22 Only	Fair

¹Includes portions of Somerset Street under jurisdiction of Somerset County (CR 631 & CR 636)
Source: Borough Tax Maps; Consultant Field Survey.



generally provide access to/from residential neighborhoods and provide direct access to adjacent land uses, both residential and non-residential.

A review of the Borough's comprehensive 1974 Master Plan and tax maps for the Borough indicates that with the exception of two 'new' local residential roadways, no major road construction or expansion of the roadway system has occurred in North Plainfield for nearly 40 years. New local roadways constructed during that period include a portion of the Redfield Avenue right-of-way, extending off Rock Avenue, and Challenger Court, located off Columbia Avenue. Overall, the length of existing roadways in the Borough remains at approximately 51 miles, with Route 22 accounting for +3.4 miles, county roadways comprising +6.5 miles of roadway, and the remaining +41.1 miles accounted for by local roads. Several existing local rights-of-way comprise 'paper streets', or are unimproved. These unimproved rights-of-way do not provide direct access to existing developed properties.

As shown on Plate 10, Route US 22 is classified as an "Urban Principal Arterial", serving as a regional commuter highway, while providing local access to adjacent commercial land use and local streets. Minor Arterial roadways in the Borough include Watchung Avenue (County Route 531), Somerset Street (County Route 531Z), Rock Avenue (County Route 645), and Leland Avenue. These roadways carry inter-municipal and local traffic, while providing primary access to the state highway system (Route 22, and Route 28 in Plainfield). Major county collector roads in the Borough include Greenbrook Road (County Route 636), West End Avenue (County Route 649), and Mountain Avenue (County Route 642). Numerous Local Collector roads are located throughout North Plainfield, connecting residential neighborhoods with major thoroughfares in the Borough, including among others, Grove Street, Westervelt Avenue, Norwood Avenue, Clinton Avenue, and Brook Avenue.

Average Daily Traffic (ADT) volumes and/or peak hour traffic volumes are collected by NJDOT and Somerset County for most of the above noted roadways. These volumes are depicted on Plate 11. In addition, Exhibit 22 presents a comparison of current peak hour traffic volumes with data reported in the Borough's 1974 Master Plan. In general, recently collected traffic volume data indicates that while existing development patterns in the Borough are well established, increased daily and peak hour vehicular activity has occurred on the Borough's primary roadways as the result development in surrounding communities and associated inter-municipal traffic through North Plainfield along the Route U.S. 22 business/commuter corridor. In addition, increased vehicular activity is also associated with drop-off/pick-up of school-aged children, particularly in vicinity of roadways surrounding the Borough's public schools. These increased traffic volumes emphasize the continuing need to properly maintain existing traffic systems, including roads, traffic signals, signage, etc.

A general description of major roadways in the Borough is provided as follows, including an overview of roadway function and classification, road conditions, and traffic volumes.

Route U.S. 22: Route U.S. 22 extends through North Plainfield for a length of 3.4 miles, beginning at Rock Avenue (milepost 42.9) and ending at Mountain Avenue (milepost 46.3). This state highway extends east from beyond the western New Jersey border to the City of Newark. The highway generally parallels the Interstate Route 78 corridor in New Jersey, and serves local and regional traffic flow, as well as direct access to adjacent land uses. The section of Route 22 through North Plainfield is a multi-lane, divided land service highway with a posted speed limit of 50 MPH. The highway segment is classified as an “Urban Principal Arterial” roadway with a right-of-way that ranges between 90 – 100 feet.

Access to Route U.S. 22 is regulated by the NJDOT through the State Highway Access Management Code (NJAS 16:47-1, et. seq.), which sets forth design standards and criteria for access and improvements along state highways for all private property and public rights-of-way. The ‘Access Level’ for the highway segment within North Plainfield specifies that right-in/out access is permitted directly to/from the highway, with left-turn movements permitted only at signalized jug-handles or grade separated interchanges. The ‘Desirable Typical Section’ for the highway segment provides for a divided six-lane roadway with shoulders (3 travel-lanes in each direction), with a total right-of-way of 148 feet.

Highway access applications for development along state highways are based upon trip generation rates for the proposed use or street, with thresholds established for analysis of critical impact locations to determine the need for improvements along the state highway. Access to lots fronting along the highway are subject to meeting specific lot spacing criteria in the Access Code, which may limit trip activity and/or access to the highway. For highway segments with a posted speed limit of 50 MPH (as is the case for Route 22 in North Plainfield), the minimum lot spacing distance (measured between lot centerlines) is 275 feet. Lots with a spacing distance of less than the required minimum spacing distance are defined as ‘non-conforming lots’ in the Access Code. The Access Code specifies that lots fronting along a state highway may not be created or subdivided in a manner that would result in the creation of a ‘non-conforming lot’, as defined by the access code.

The portion of Route 22 between Rock Avenue and Wilson Avenue has four travel lanes (two in each direction) with shoulders, with an average cartway width of 76 feet (38 feet in each direction). The portion of Route 22 east of Wilson Avenue to the Borough’s easterly municipal boundary has six travel lanes (3 lanes in each direction – no shoulder) with an average total cartway width of approximately 80 feet.

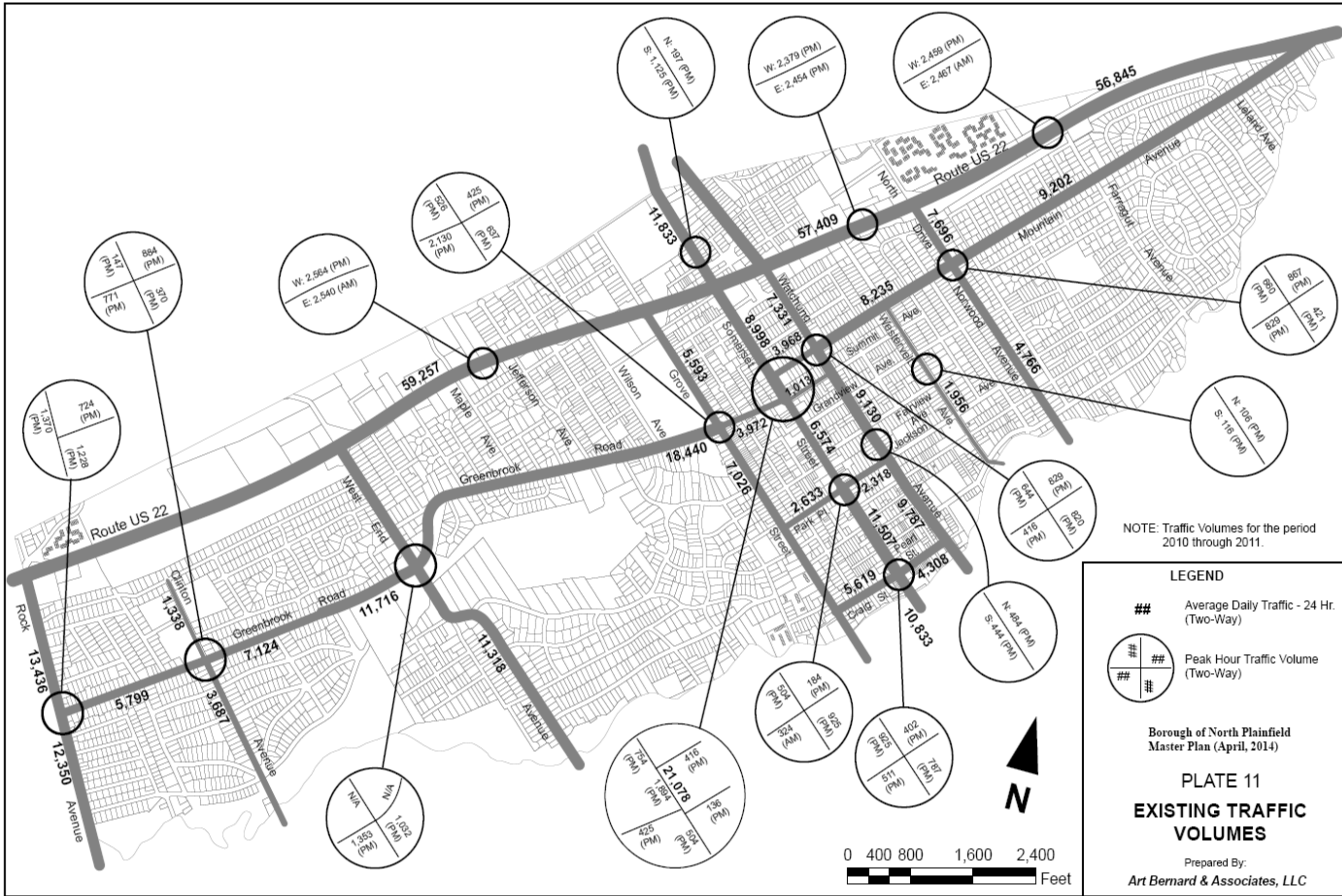
Since the last detailed inventory of traffic conditions in the Borough’s 1974 Master Plan, two additional traffic signals have been installed along the highway corridor, adjacent to the Borough boundary with Watchung Borough (Watchung Square Mall driveway and Gray

Exhibit 22
Peak Hour Traffic Volume Comparison
Selected Roadways - North Plainfield
1974 Vs. 2010

<u>Roadway</u>	<u>Peak Hour Traffic Volume (two-way)</u>		<u>Difference</u>	
	<u>1974^a</u>	<u>2010^b</u>	<u>#</u>	<u>%</u>
Route U.S. 22:				
- @ Vicinity of Jefferson Avenue	4,472	5,008	536	12.0%
- @ West of North Drive	4,234	4,830	596	14.1%
- @ East of North Drive	4,077	4,837	760	18.6%
Greenbrook Road:				
- @ Rock Avenue	535	734	199	37.2%
- @ Clinton Avenue	678	884	206	30.4%
- @ West End Avenue	940	1,353	413	43.9%
- @ Grove Street	892	2,130	1,238	138.8%
Mountain Avenue:				
- @ Norwood Avenue /North Drive	695	867	172	24.7%
- @ Watchung Avenue	616	829	213	34.6%
- @ Somerset Street	328	416	88	26.8%
Somerset Street:				
- @ South of Pearl Street	908	787	-121	-13.3%
- @ South of Jackson Avenue	966	925	-41	-4.2%
- @ North of Mountain Avenue	1,129	754	-375	-33.2%
Watchung Avenue:				
- @ Mountain Avenue	760	820	60	7.9%
West End Avenue:				
- @ Greenbrook Road	631	1,032	401	63.5%
Rock Avenue:				
- @ Greenbrook Road	957	1,370	413	43.2%
Clinton Avenue:				
- @ Greenbrook Road	393	370	-23	-5.9%
Grove Street:				
- @ Greenbrook Road	617	637	20	3.2%
North Drive:				
- @ Mountain Avenue	337	660	323	95.8%
Pearl Street:				
- @ East of Somerset Street	339	402	63	18.6%
- @ West of Somerset Street	413	511	98	23.7%

a) Data provided in 1974 Master Plan.

b) Data collected by Somerset County or NJDOT.



NOTE: Traffic Volumes for the period 2010 through 2011.

LEGEND

Average Daily Traffic - 24 Hr. (Two-Way)

Peak Hour Traffic Volume (Two-Way)

Borough of North Plainfield
Master Plan (April, 2014)

PLATE 11
EXISTING TRAFFIC VOLUMES

Prepared By:
Art Bernard & Associates, LLC



Street). These newer installations control traffic in/out of commercial development in Watchung Borough, and do not affect local roadways in North Plainfield. Aside from these two signals, five traffic signal installations remain along the corridor, serving two Urban Minor Arterial Roads (Rock Avenue and Mountain Avenue) and three Urban Collector roads (West End Avenue, Wilson Avenue, and Norwood Avenue/North Drive).

Traffic volumes along the section of Route 22 in North Plainfield have increased since last noted in the 1974 Master Plan, which reported an average annual daily traffic (AADT) volume of 48,930 (two-way) vehicles in 1970. Recent data collected along Route 22 by NJDOT in 2010-2011 indicates an AADT of 56,845 vehicles east of Norwood Avenue/North Drive, and 59,257 vehicles in vicinity of Jefferson Avenue (see Plate 11). These data are consistent with other recent NJDOT data, which recorded two-way volumes ranging from 55,565 vehicles in vicinity of the former Pathmark Shopping Center in 2004, 61,044 vehicles in vicinity of Somerset Street in 2007, and 63,471 vehicles in vicinity of Mountain Boulevard (2007).

The 2012 – 2021 Statewide Transportation Improvement Program calls for improvements to the Route U.S. 22 highway corridor, from Interstate Route 287 (milepost 36.45) east to Mountainside Borough (milepost 50.25). This project is slated to begin in the fall of 2012, and scheduled for completion in the spring of 2014. The purpose of the project is to relieve traffic congestion and to improve mobility along the Route 22 corridor through a series of traffic signal and Intelligent Transportation System (ITS) improvements. The project will include intersection traffic signal geometry/jug-handle improvements; traffic signal system replacement and/or timing modifications; interconnection of all traffic signals along the highway section; installation of Travel Time Systems (TTS), Dynamic Message Signs (DMS), and a Camera Surveillance System (CSS); and, provision for wireless/fiber optic communication of the integrated highway segment with the Traffic Management Center in Woodbridge, New Jersey. These improvements to Route 22 will reduce traffic congestion along the highway during weekday AM and PM PEAK periods, thereby providing more efficient traffic flow and improved travel time through the corridor.

With respect to the Route 22 highway segment within North Plainfield, intersection improvements will be constructed at Rock Avenue, West End Avenue, and Wilson Avenue, including lane geometry improvements; traffic signal upgrades; and, improved pedestrian access and crosswalk configuration. At the Rock Avenue intersection, three lanes will be provided on each Rock Avenue approach, including elimination of the northbound right-turn ramp to eastbound Route 22. At West End Avenue, the northbound approach to Route 22 will include a three-lane approach geometry, and elimination of the northbound right-turn slip ramp. The Wilson Avenue intersection will be modified with revised crosswalks and elimination of the eastbound U-turn lane. Additional improvements along the portion of Route 22 in North Plainfield include the installation of eastbound and westbound Traffic

Time System (travel time) message boards (TTS) on the existing West End Avenue pedestrian bridge, and installation of an eastbound camera and eastbound Digital Message Board in vicinity of the Norwood Avenue/North Drive intersection.

As part of the New Jersey Statewide Transportation Improvement Program, maintenance along the Route 22 corridor occurs on an ongoing basis, including roadway repairs, utility maintenance, and routine highway systems repairs (i.e. traffic signals, etc.). Additional near-term improvements slated for the portion of Route US 22 in North Plainfield include resurfacing of the mainline roadway through the West End Avenue, and “community based” multi-modal improvements to enhance travel options, including the provision of continuous sidewalks along eastbound and westbound Route 22 between Rock Avenue and Somerset Street.

Greenbrook Road (County Route 636): Greenbrook Road is an existing east-west major collector road which extends east from Rock Avenue to Somerset Street. The posted speed limit is 35 MPH, and a single travel lane is provided in each direction. Between Rock Avenue and Grove Street, Greenbrook Road has striped shoulders along each side of the road. On-street parking is permitted on both sides of Greenbrook Road, except on the north side of the road between West End Avenue and Grove Street, and along the south side of the road, between Stony Brook and Somerset Street. The pavement width varies along the roadway from approximately 40 feet between Rock Avenue and West End Avenue, to approximately 34 feet between West End Avenue and Somerset Street. The existing right-of-way for the roadway is seventy (70) feet between Rock Avenue and West End Avenue, and 50 feet between West End Avenue and Somerset Street. Somerset County proposes that the entire roadway have a minimum right-of-way of 60 feet.

Average daily traffic volume data collected by Somerset County along Greenbrook Road varies greatly, with 5,506 vehicles (two-way) recorded east of Rock Avenue; 7,124 vehicles recorded at Clinton Avenue; 11,716 vehicles recorded at West End Avenue; 18,440 vehicles recorded west of Grove Street; and 3,972 vehicles recorded west of Somerset Street. These volumes indicate the increasing levels of traffic activity along Greenbrook Avenue, particularly in vicinity of the Middle/High School and Stony Brook School facilities, and the function of Greenbrook Avenue as a major collector roadway, serving inter-municipal traffic and access to the local and regional arterial roadway system.

As shown on Exhibit 22, peak hour volumes along Greenbrook Avenue have increased a minimum of 30.4 percent, with peak hour volumes at Grove Street increasing more than double (+138.8%). With the exception of the Grove Street intersection, the remaining signalized intersections along Greenbrook Avenue have been upgraded by Somerset County, including lane geometry and traffic signal improvements, and are adequate to meet the existing traffic demand. At Grove Street, significant delays result on school-days as a

result of student drop-off/pick-up activities and high student pedestrian activity, as well as during PM peak hour periods. These delays appear to be the result of inadequate lane capacity at the intersection and school crossing-guard activity. While these conditions occur regularly on school days, congestion on local roadways results in significant delays and rerouting of traffic through alternate residential streets. No improvements are proposed at this intersection at this time. It is recommended that the Grove Street intersection at Greenbrook Avenue be evaluated to determine the feasibility of improving traffic operations at this location.

West End Avenue (County Route 649): West End Avenue is an existing major collector roadway, which extends between New Jersey Route 28 in Plainfield, through North Plainfield to Route U.S. 22. The posted speed limit in each direction is 35 MPH. The County Circulation Plan Element proposes that the entire roadway have a minimum right-of-way width of 60 feet. The northern portion of the roadway between Rockview Avenue and Route 22 has an existing right-of-way width of 60 feet, and is provided with a single travel lane in each direction. No shoulders are provided along this portion of the roadway, except along the northbound side, between Rockview Avenue and Greenbrook Road. The southerly portion of West End Avenue between the Borough boundary with Plainfield and Rockview Avenue has an existing right-of-way of 100 feet, with one travel lane and shoulders in each direction, separated by a curbed, grass median. No improvements are proposed to West End Avenue by Somerset County at this time.

The cartway width for West End Avenue is twenty feet in each direction between the Borough boundary with Plainfield and Rockview Avenue and approximately 36 feet for the entire roadway section north of Greenbrook Road. Between Rockview Avenue and Greenbrook Road, the cartway width varies between 40 feet and 48 feet. Average daily traffic volume data reported by Somerset County in 2010, indicates 11,318 vehicles in vicinity of Greenbrook Road. Peak hour activity on West End Avenue at the Greenbrook Avenue intersection (Exhibit 22) has increased 63.5 percent, from 631 to 1,032 northbound/southbound peak hour movements from 1974 to the present. This increase reflects the use of West End Avenue for intra-municipal traffic to/from Route 22. With the recent intersection lane geometry and traffic signal improvements, the intersection is adequate to meet the present traffic demand.

Mountain Avenue (County Route 642): Mountain Avenue is a major collector roadway which extends east from Somerset Street to the Borough's easterly boundary with Watchung Borough, in vicinity of Route 22 and Raymond Road. This roadway has an existing right-of-way width of 66 feet, and a posted speed limit of 35 MPH. The County proposes that Mountain Avenue have a minimum right-of-way of 60 feet. The cartway width for the entire roadway segment is approximately 40 feet, with one travel lane and on-street parking provided in both directions.

The Somerset County Capital Improvement Program proposes intersection improvements at three locations along Mountain Avenue. These include traffic signal upgrades/improvements at the existing signalized intersections at Watchung Avenue and Norwood Avenue, respectively, and installation of a new traffic signal at the Leland Avenue intersection. According to the Capital Improvement Program, the intersection/signal improvements at Watchung Avenue and Norwood Avenue are slated for the year 2016, while the installation of a new traffic signal at Leland Avenue is scheduled for 2012.

Average daily traffic volume data (2010) collected by Somerset County along Mountain Avenue indicates a range of between 3,968 vehicles in vicinity of Somerset Street and 9,202 vehicles to the east of Norwood Avenue. Between Watchung Avenue and Norwood Avenue, average daily traffic was reported at 8,235 vehicles. The peak hour traffic volume comparison to 1974 data (Exhibit 22) indicates that the peak volumes at Norwood Avenue/North Drive, Watchung Avenue, and Somerset Street have all increased by at least 24.7 percent. This is evident of the increased use of Mountain Boulevard for access to Route 22 by local and inter-municipal traffic.

Rock Avenue (County Route 645): Rock Avenue is an existing minor arterial roadway that straddles the Border of North Plainfield with Green Brook Township. This roadway serves northbound and southbound traffic flow between Route 22 and Route 28 in Plainfield. Rock Avenue has an existing right-of-way of 60 feet, and has a posted speed limit of 35 MPH. The Somerset County Circulation Plan Element proposes a right-of-way width of 66 feet. A total of four travel lanes (two lanes in each direction) are provided between Redfield Avenue and Route 22, with an overall cartway width of 45 feet. South of Redfield Avenue, Rock Avenue has a cartway width of approximately 40 feet, and is provided with one travel, with shoulders, in each direction.

Average daily traffic volume data collected in 2010, by Somerset County, indicates a total two-way traffic volume of 13,436 vehicles north of Greenbrook Road, with slightly less ADT (12,350 vehicles) south of the intersection (see Plate 11). Peak hour activity on Rock Avenue at the Greenbrook Avenue intersection indicates that since 1974, northbound/southbound volumes have increased 43.6 percent, from 937 vehicles to 1,370 vehicles. This increase reflects the use of Rock Avenue by inter-municipal traffic to access Route 22. The Rock Avenue intersection with Greenbrook Avenue has been recently improved by Somerset County, and appears adequate to meet the present traffic demand.

Watchung Avenue (County Route 531): Watchung Avenue is an existing minor arterial roadway which runs through the central portion of the Borough, parallel to the Somerset Street business corridor. The roadway extends from the business district in the City of Plainfield, through North Plainfield to Route U.S. 22, providing access further north to Interstate Route 78. The Watchung Avenue intersection with Route 22 is provided in the

form of an interconnected grade separated interchange with Somerset Street. The posted speed limit in each direction is 25 MPH. The County Circulation Plan Element proposes that the entire roadway have a minimum right-of-way width of 66 feet. The existing right-of-way for the entire roadway is 60 feet. Parking is generally permitted along both sides of the roadway, except in vicinity of street intersections. Watchung Avenue is provided with one travel lane in each direction with no shoulders. The cartway width for Watchung Avenue is approximately 36 feet for the entire length.

Somerset County and NJDOT have collected average daily traffic (ADT) volume data on various segments of Watchung Avenue. In 2010, Somerset County data indicates that ADT volumes south of Mountain Avenue were 9,130 vehicles. This is consistent with NJDOT data, which recorded ADT volumes south of Fairview Avenue at 9,787 vehicles. Additional NJDOT data collected at Fairview Avenue in 1999 recorded a total ADT volume of 9,588 vehicles, indicating that traffic volumes along the Watchung Avenue corridor are relatively stable. North of Mountain Avenue, a total ADT of 7,331 vehicles were tallied by Somerset County in 2010, while between the Route 22 overpass ramp and eastbound Route 22, a total ADT of 6,424 vehicles were recorded in 2009.

Peak hour activity on Watchung Avenue in vicinity of Mountain Boulevard increased moderately from 1974 to the present according to data collected by Somerset County. In 2010, two-way peak hour volumes on Watchung Avenue were 820 vehicles, while in 1974, the two-way volume was 760 vehicles. This represents an increase of only 7.9 percent. As noted previously, the signalized intersection at Mountain Avenue is proposed to be improved by Somerset County in 2016.

Somerset Street (County Routes 531Z, 631 & 636): Somerset Street forms the heart of North Plainfield's central business area, and a focal point for Borough residents. Numerous businesses and mixed uses are located throughout the corridor, which also serves as a primary travel route for surrounding communities. The roadway is designated as County Route 531Z, complementing Watchung Avenue (County Route 531). Somerset Street is classified as a local minor arterial roadway.

The only segments of Somerset Street under jurisdiction of the county include the portion between Greenbrook Road and Mountain Avenue (County Route 636) and the portion of Somerset Street between westbound Route 22 and the grade-separated overpass ramp (County Route 631). The existing right-of-way for the entire length of Somerset Street is 60 feet. On-street metered parking is provided along both sides of the roadway in the central business area. The cartway for the roadway is approximately 40 feet. On-street metered parking is provided along both sides of the roadway in the central business area.

The New Jersey State Transportation Improvement Program (STIP) has funded the final phase of streetscape improvements for the portion of Somerset Street between Mountain

Avenue and Route 22. This will complete the North Plainfield Downtown Streetscape and Pedestrian Improvement program, which includes the entire length of Somerset Street from Plainfield to Route 22. Streetscape improvements include brick paver sidewalks and crosswalks along Somerset Street, including lighting, street tree plantings and pedestrian handicap curbing treatments. These improvements have greatly enhanced pedestrian access along both sides of Somerset Street, including sidewalk and crosswalk delineation, handicap ramp access and signage.

In the central business area along Somerset Street (generally south of the Park Place/Jackson Avenue intersection), crosswalk pavement striping and pedestrian signage is significantly worn, reducing visibility to motorists. Although crosswalk features in this area include an enhanced brick-paver surface, visibility of the crosswalks is greatly diminished with worn pavement striping, which must be continuously reinstalled by the Borough. This condition contributes to a lack of awareness of pedestrian activity and therefore greatly reduces pedestrian safety in the central business area. It is additionally noted that numerous trees are missing along Somerset Street, which were initially planted as part of the Somerset Street Streetscape improvements in the past. These trees should be replaced.

Average daily traffic volumes on Somerset Street vary depending on the roadway segment, and proximity to adjoining major roadways and land uses. ADT data collected in 2010 by Somerset County along the portion of the roadway north of Mountain Avenue tallied 8,998 vehicles, while between Greenbrook Road and Park Place, 6,574 vehicles were recorded. South of Park Place, 13,086 vehicles (two-way) were tallied, and between Craig Place and the Borough boundary, 10,833 vehicles were recorded. The segment of Somerset Street north of Route 22 carried a two-way volume of 11,833 vehicles daily in 2010, with the majority of vehicles (11,084) travelling south from Watchung/Green Brook into North Plainfield.

Peak hour activity reported in 2010 by Somerset County indicates that a reduction in peak hour vehicle movements has occurred along the segment of Somerset Street between Route 22 and the City of Plainfield since last reported in the 1974 Master Plan. As shown on Exhibit 22, peak hour activity decreased by 13.3% south of Pearl Street, and 33.2% north of Mountain Avenue, respectively. This reduction may be attributed to the addition of added regional shopping opportunities along Route 22 in the past four decades, and the more recent perception of Somerset Street as a 'local' business thoroughfare, thereby serving to de-emphasize Somerset Street as a thoroughfare to/from Route 22.

Norwood Avenue/North Drive: Norwood Avenue and the southerly portion of North Drive are classified as local minor arterial roadways. Norwood Avenue has an existing right-of-way width of 60 feet, while North drive has an existing right-of-way of 45 feet between Mountain Avenue and Route 22. On-street parking is provided on Norwood Avenue, which

has one travel lane in each direction and a pavement width of approximately 35 feet. The southerly section of North Drive has a cartway width of only 30 feet, with one travel lane in each direction and no on-street parking permitted.

Leland Avenue: Leland Avenue has an existing right-of-way of 66 feet, and is classified as a local minor arterial roadway. The cartway width along Leland Avenue is approximately 40 feet, with one travel lane and on-street parking provided in both directions.

At the intersection of Mountain Avenue and Leland Avenue, the Somerset County Capital Improvement Program (2010 – 2016) proposes the installation of a new traffic signal with intersection geometry improvements. This improvement is slated to occur in 2012, and will improve traffic flow and safety at the intersection, which accommodates inter-municipal traffic between the City of Plainfield and Route 22.

Local Collector Roads: Numerous local collector roads serve North Plainfield, providing direct access to adjacent land uses while connecting with the local arterial and regional roadway system. These roadways are depicted on Plate 10, and also detailed on Exhibit 21. Due to their proximity to residential neighborhoods and the regional roadway system, collector roadways carry higher volumes than local streets, requiring frequent maintenance and traffic monitoring to ensure pedestrian safety and efficient traffic flow. At a very minimum, all collector roadways should be provided with positive pedestrian access, including sidewalks on both sides of the roadway (where feasible), depressed handicap ramps (curbed roadways), crosswalks in vicinity of high pedestrian areas (i.e. schools, commercial areas, etc.), and adequate advance pedestrian warning signs where warranted.

As shown on Plate 10, Grove Street, Westervelt Avenue, Harrison Avenue, Wilson Avenue, and the northerly portions of Rock Avenue, West End Avenue and North Drive are classified as local collector roadways. These roadways provide direct access to Route 22, as well as access to major collector county-owned roadways (Greenbrook Road or Mountain Avenue), and where feasible, should have a minimum right-of-way of 60 feet to allow for an adequate cartway width for traffic flow and for on-street parking/shoulders. Grove Street has an existing right-of-way of 60 feet, while Westervelt Avenue has an existing right-of-way of 70 feet.

Additional local collector roadways in the Borough which do not serve inter-municipal travel are also shown on Plate 10. These roads include Farragut Avenue, Brook Avenue, Wilson Avenue, Harrison Avenue, Rockview Avenue, Rockview Terrace, Pearl Street (between Somerset Street and Watchung Avenue), and Clinton Avenue. With the exception of Rockview Terrace, Pearl Street, and a small portion of Brook Avenue, the existing right-of-way for each roadway is 60 feet. The right-of-way for Rockview Terrace and the westerly portion of Brook Avenue is 50 feet, while Pearl Street has an existing right-of-way of approximately 61 feet. Each of these additional local collector roadways provide one travel

in each direction, with on-street parking regulated by ordinance. The portion of Pearl Street between Somerset Street and Watchung Avenue is under jurisdiction of North Plainfield, and is designated as County Route 531.

Local Roads: The remaining roadways in the Borough are local streets under the jurisdiction of North Plainfield, which provide direct access to residential and non-residential uses. The majority of these roads provide regulated on-street parking, which may restrict parking during particular time(s) of the day, or when snow removal is required. The rights-of-way for most local roads in the Borough vary between 50 feet and 66 feet in width, with a few roads under 50 feet. While it is problematic for certain roads to be brought up to a desirable minimum right-of-way due to existing development conditions, it is vitally important that cartway widths and pedestrian facilities are adequate to safely accommodate local traffic, emergency vehicle access and pedestrian activity. In most instances, roads with less than 50 feet of right-of-way provide only one-way traffic flow, and/or restricted on-street parking.

Road conditions vary by intensity of use and type of traffic, and are maintained by the Borough through an annual Capital Road Improvement Program to repair/resurface roadways, including drainage or other utility improvements (i.e., public water or sanitary sewer), as necessary. The majority of the roadway repairs and resurfacing projects are funded by local bond ordinance, with a small number funded through local state aid. The Borough coordinates the Capital Roadway Improvement Program with necessary infrastructure improvements by the New Jersey American Water Company (public water) and the Plainfield Area Regional Sewerage Authority (sanitary sewer).

Signalized Intersections & Unsignalized Intersections

Signalized intersections along Route U.S. 22 are maintained and operated by the New Jersey Department of Transportation. There are a total of seven signalized intersections along the highway segment in North Plainfield, of which three locations (Rock Avenue, West End Avenue & Wilson Avenue) are proposed for traffic signal and lane geometry improvements in the near future. These traffic signals and the remaining five installations will be interconnected as part of the Route 22 Transit Enhancement Plan to provide a variety of “community-based” multi-modal improvements for travel along the Route 22 corridor. Additional improvements will include installation of an Intelligent Traffic System; revised curb ramps, landings and sidewalk extension to pedestrian push buttons; crosswalk improvements; and, lane geometry improvements.

Somerset County maintains a total of seven traffic signal installations along Greenbrook Road, West End Avenue, Somerset Street, Watchung Avenue, and Mountain Avenue. All of the county signalized intersections are provided with positive pedestrian access, including

pedestrian signals, push buttons, depressed curbing and designated crosswalks. As part of the County's 2010-2016 Capital Improvement Program, traffic signal improvements are proposed along Mountain Avenue at intersections of Watchung Avenue and Norwood Avenue/North Drive. In addition, the intersection of Mountain Avenue and Leland Avenue is proposed to be signalized. The county regularly upgrades traffic signal equipment as needed, including updated controller assemblies and battery backup systems in case of power failure.

It was observed during field investigation that right-turn-on-red movements are permitted on both the eastbound and southbound approaches at the Greenbrook Road/West End Avenue signalized intersection. The intersection geometry and limited sight distance on these approaches do not appear adequate to safely permit these movements. The reduced safety of these movements is compounded by the proximity of the intersection to West End Elementary School, particularly during peak school day drop-off/pick-up time periods. The intersection should be evaluated by county officials to determine whether conditions warrant the prohibition of these particular movements at the intersection.

Two existing local signalized intersection are located on Somerset Street, at the intersections of Park Place/Jackson Avenue and Pearl Street/Craig Place, respectively. While these installations are owned by the Borough, the County Road Department maintains these two installations. The installation at Pearl Street/Craig Place is obsolete, and is not provided with positive pedestrian access (i.e. no pedestrian signals or push button actuation). The installation at Park Place/Jackson Avenue is provided with positive pedestrian access. It is recommended that North Plainfield officials request the county to evaluate these two signalized intersections to determine the need for any necessary improvements.

Unsignalized intersections are located throughout the Borough, and controlled with 'stop' signs or 'yield' signs, as warranted. For the most part, these intersections are adequately designed and maintained to provide safe, efficient circulation on the Borough's local streets. It is particularly important that traffic controls in the vicinity of the Borough's public and private schools be maintained and upgraded to ensure pedestrian safety for school children. Signage and pavement markings (i.e. crosswalks, stop bars, yield bars, turning arrows, etc.) should be properly maintained and installed as necessary, to ensure adequate visibility for motorists and pedestrians. Likewise, depressed curb ramps, landings and sidewalks must be maintained to provide safe pedestrian crossing at all intersections.

Traffic Accident Analysis

As a densely developed older community, traffic safety in North Plainfield is a primary concern for borough residents, the local business community and the traveling public.

Traffic safety is a particular concern for the borough's school-aged children who must travel to school by walking or by private auto. In order to provide an assessment of the overall safety of the borough's roadways, this section of the basic studies update will provide a brief analysis of traffic accident data for North Plainfield from 2007 to 2011.

Traffic accident data for North Plainfield was investigated for State Route U.S. 22, all Somerset County roadways, and for all borough roadways. This data was obtained from the New Jersey Department of Transportation and from the Somerset County Transportation Planning Division. Traffic accident data is presented on Exhibits 23, 24 and 25, and Plate 12. Exhibit 23 provides a comparison of traffic accident data for North Plainfield and for the State of New Jersey for the five-year period, while Exhibit 24 provides an annual summary of traffic accident data for North Plainfield only. Exhibit 25 provides a detailed summary of traffic accident data for North Plainfield during the five-year period for state and county roads, and for selected local roadways. Finally, Plate 12 illustrates traffic accident frequency at key intersections throughout the borough over the five-year period.

A total of 2,880 traffic accidents were reported on the public road system in North Plainfield from 2007 to 2011. A comparison of traffic accident data for North Plainfield and New Jersey (Exhibit 23) reveals that over the five-year period, a higher rate of traffic accidents occurred at intersections in the borough (38.4%) as opposed to the State (33.7%). Conversely, a lower rate of accidents occurred between intersections in North Plainfield (61.6%), as compared to New Jersey (66.3%). This is largely reflective of the densely developed 'urban' character of the borough and the corresponding increase in the concentration of conflict points at signalized and unsignalized intersections.

Exhibit 24 provides annual traffic accident data for North Plainfield from 2007 through 2011, including accidents involving injuries or fatalities, and accidents involving pedestrians or pedalcycles (i.e. bicycles). As demonstrated in the exhibit, a total of seven fatalities occurred in North Plainfield over the five-year period, four of which involved pedestrians, and one fatality involving a pedalcyclist.

Exhibit 25 presents a detailed borough-wide analysis of traffic accident data for all major thoroughfares in North Plainfield, including State Highway Route U.S. 22, the Somerset County roadway system, and select borough roadways. To supplement the data, Plate 12 illustrates the frequency of traffic accidents for the cumulative five-year period at key intersections throughout the Borough. As shown on Exhibit 25, traffic accidents along Route 22 accounted for 37.5 percent of all accidents in the borough. Collectively, the Somerset County roadway system accounted for 24.4 percent of traffic accidents. Borough roadways accounted for the balance of traffic accidents (38.1%), including the selected major local roadways shown, which accounted for more than two-thirds of local roadway accidents. Plate 12 illustrates the higher concentration of accidents at key intersections in the central portion of the Borough.

Exhibit 23

TRAFFIC ACCIDENT COMPARISON
Municipal, County and State Roadways
Borough of North Plainfield vs. State of New Jersey
 Five-Year Period (2007 - 2011)

	TOTAL NO. OF ACCIDENTS		AT INTERSECTIONS		BETWEEN INTERSECTIONS		INJURY		FATAL		PEDESTRIAN		PEDALCYCLE	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Borough of North Plainfield	2,880	100.0%	1,106	38.4%	1,774	61.6%	747	25.9%	7	0.24%	61	2.12%	33	1.15%
State of New Jersey ^a	1,123,935	100.0%	378,725	33.7%	744,843	66.3%	284,639	25.3%	2,328	0.21%	22,280	1.96%	10,517	0.94%

^aExcludes toll roads and Interstate Highways.

Data Source: NJDOT and Somerset County Division of Transportation Planning.

Exhibit 24

ANNUAL TRAFFIC ACCIDENT SUMMARY
Municipal, County and State Roadways
Borough of North Plainfield
 2007 to 2011

YEAR	TOTAL NO. of ACCIDENTS		ACCIDENTS AT INTERSECTIONS		ACCIDENTS BETWEEN INTERSECTIONS		ALCOHOL RELATED ACCIDENTS		ACCIDENTS INVOLVING INJURY ¹		FATAL ACCIDENTS ¹		ACCIDENTS INVOLVING PEDESTRIANS		ACCIDENTS INVOLVING PEDALCYCLES		
	#	% of Crashes	#	% of Crashes	#	% of Crashes	#	% of Crashes	#	% of Crashes	#	% of Crashes	#	% of Crashes	#	% of Crashes	
2007	600	100.0%	205	34.1%	395	65.7%	23	3.8%	170	28.3%	(229)	(1)	15	2.50%	(12/1)	9	1.50%
2008	593	100.0%	249	42.0%	344	58.0%	17	2.9%	161	27.2%	(223)	(5)	12	2.02%	(7/3)	11	1.85%
2009	568	100.0%	235	41.5%	331	58.5%	22	3.9%	145	25.6%	(187)	(0)	12	2.12%	(12/0)	5	0.88%
2010	530	100.0%	192	36.2%	338	63.8%	17	3.2%	129	24.3%	(166)	(1)	12	2.26%	(12/0)	5	0.94%
2011	591	100.0%	225	38.1%	366	61.9%	10	1.7%	142	24.0%	(181)	(0)	10	1.69%	(9/0)	3	0.51%
Total:	2,880		1,106		1,774		89		747		(896)	(7)	61		(62/4)	33	
Annual/Average	576	100.0%	221	38.4%	355	61.6%	18	3.1%	149	25.9%	(197)	(1.40)	12	2.12%	(10.4/0.8)	6.60	1.15%

¹Includes pedestrian and pedalcycle injuries or fatalities.

Data Source: NJDOT and Somerset County Division of Transportation Planning.

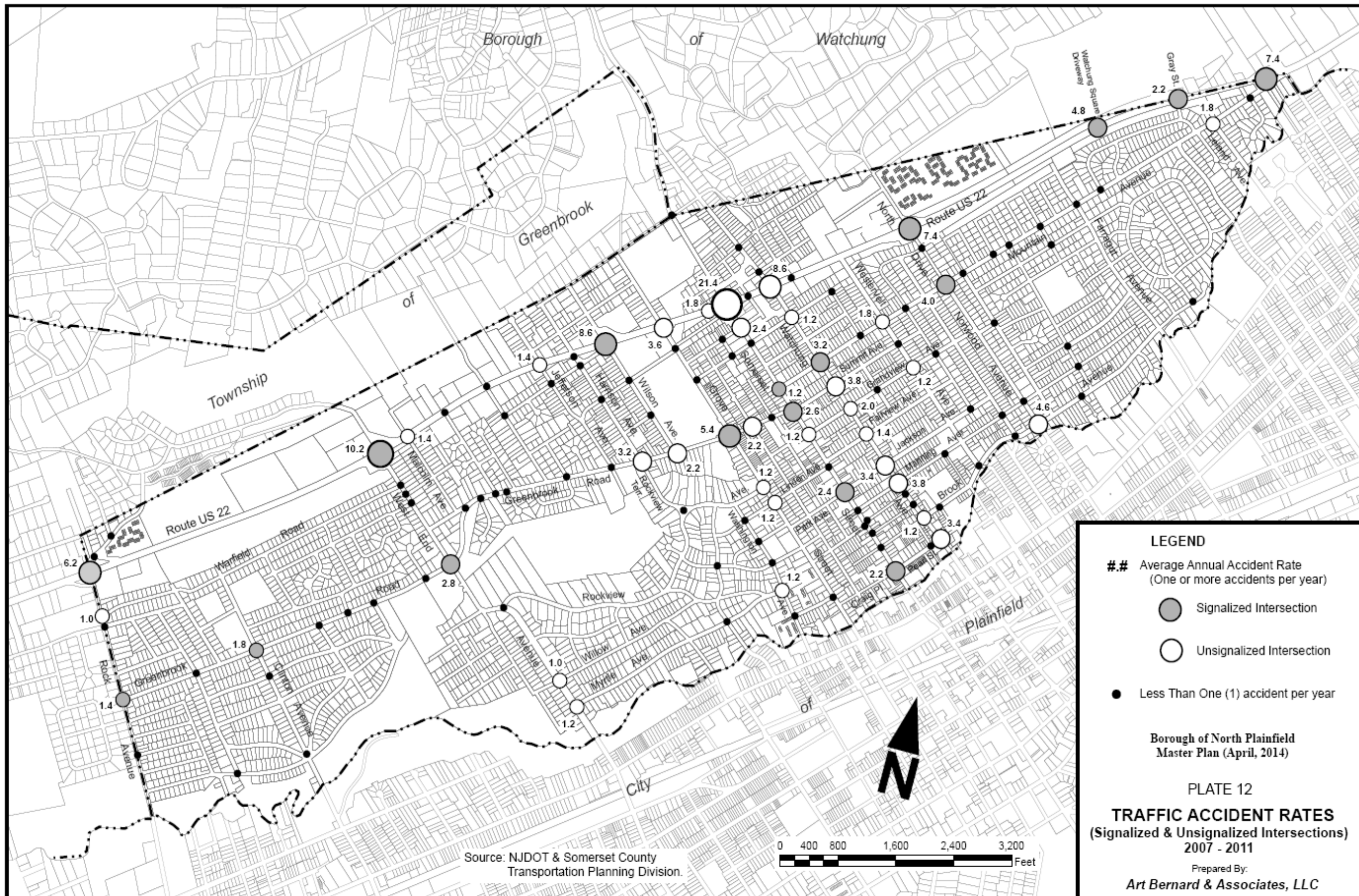
TRAFFIC ACCIDENT SUMMARY
Municipal, County and State Roadways
Borough of North Plainfield
 Five-Year Period (2007 - 2011)

	TOTAL NO. OF ACCIDENTS		AT INTERSECTIONS		BETWEEN INTERSECTIONS		INJURY		FATAL		PEDESTRIAN		PEDALCYCLE	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
STATE ROADS:														
- Route U.S. 22	1,080	37.5%	344	31.5%	736	68.1%	317	29.4%	4	0.37%	11	1.0%	9	0.8%
SOMERSET COUNTY ROADS:														
- Watchung Avenue (County Route 531)	235	8.2%	136	57.9%	99	42.1%	67	28.5%	1	0.43%	8	3.4%	3	1.3%
- Greenbrook Road (County Route 636)	193	6.7%	106	54.9%	87	45.1%	62	32.1%	0	0.00%	6	3.1%	9	4.7%
- Mountain Avenue (County Route 642)	128	4.4%	65	50.8%	63	49.2%	36	28.1%	0	0.00%	5	3.9%	3	2.3%
- West End Avenue (County Route 649)	96	3.3%	34	35.4%	62	64.6%	23	24.0%	0	0.00%	1	1.0%	0	0.0%
- Rock Avenue (County Route 645) ¹	50	1.7%	19	38.0%	31	62.0%	13	26.0%	0	0.00%	0	0.0%	1	2.0%
Sub-Total (All County Roads)	702	24.4%	360	51.3%	342	48.7%	201	28.6%	1	0.1%	20	2.8%	16	2.3%
NORTH PLAINFIELD ROADS:														
- Somerset Street (County Route 531Z) ²	262	9.8%	149	52.8%	133	47.2%	70	24.8%	0	0.00%	9	3.2%	2	0.7%
- Duer Street	179	6.2%	47	26.3%	132	73.7%	22	12.3%	0	0.00%	0	0.0%	0	0.0%
- Grove Street	86	3.0%	41	47.7%	45	52.3%	22	25.6%	1	1.16%	3	3.5%	1	1.2%
- Nonwood Avenue / North Drive	51	1.8%	21	41.2%	30	58.8%	10	19.6%	0	0.00%	0	0.0%	0	0.0%
- Brook Avenue	35	1.2%	13	37.1%	22	62.9%	9	25.7%	0	0.00%	2	5.7%	0	0.0%
- Myrtle Road	28	1.0%	6	21.4%	22	78.6%	7	25.0%	0	0.00%	0	0.0%	1	3.6%
- Wilson Avenue	28	1.0%	7	25.0%	21	75.0%	6	21.4%	0	0.00%	1	3.6%	0	0.0%
- Manning Avenue	25	0.9%	8	32.0%	17	68.0%	3	12.0%	0	0.00%	1	4.0%	0	0.0%
- Westwell Avenue	24	0.8%	4	16.7%	20	83.3%	0	0.0%	0	0.00%	1	4.2%	0	0.0%
- Rockview Avenue	14	0.5%	1	7.1%	13	92.9%	3	21.4%	1	7.14%	0	0.0%	0	0.0%
- Remaining Borough Roads	752	26.1%	297	39.5%	455	60.5%	152	20.2%	2	0.27%	17	2.3%	4	0.5%
Sub-Total (All Borough Roads)	346	12.0%	105	30.3%	241	69.7%	77	22.3%	0	0.00%	13	3.6%	4	1.2%
Sub-Total (All Roadways)	1,098	38.1%	462	36.6%	696	63.4%	229	20.9%	2	0.18%	30	2.7%	8	0.7%
North Plainfield (All Roads)	2,880	100.0%	1,106	38.4%	1,774	61.6%	747	25.9%	7	0.24%	61	2.1%	33	1.1%

¹Does not include accidents reported in Greenbrook Township.

²Includes portions of Somerset Street under jurisdiction of Somerset County (CR 631 & CR 636).

Data Source: NJDOT and Somerset County Division of Transportation Planning. Data analysis conducted by Consultant.



Borough of Watchung

Greenbrook

Township

Route US 22

Plainfield

City

Source: NJDOT & Somerset County
Transportation Planning Division.

0 400 800 1,600 2,400 3,200 Feet



LEGEND

- ## Average Annual Accident Rate (One or more accidents per year)
- Signalized Intersection
- Unsignalized Intersection
- Less Than One (1) accident per year

**Borough of North Plainfield
Master Plan (April, 2014)**

**PLATE 12
TRAFFIC ACCIDENT RATES
(Signalized & Unsignalized Intersections)
2007 - 2011**

Prepared By:
Art Bernard & Associates, LLC

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As presented in Exhibit 25, the county road system displayed a significantly higher rate of accidents reported at intersections (51.3%), which is reflective of the higher traffic volumes and numerous intersection locations along these major collector and minor arterial roadways. A higher rate of accidents at intersections is also displayed along two local roads: Somerset Street (52.8%) and Grove Street (47.7%), each of which carry a wide-range of inter-municipal and local traffic, including local commercial traffic, residential traffic and school-related traffic activity. An increase in the rate of accidents occurring *between* intersections occurs on county and local roadways located further away from the central business area. These roads typically exhibit less frequent intersections (conflict points), resulting in higher travel speeds and/or a decrease in driver attentiveness to travel conditions.

Accidents involving injury(s) was lower on all borough roadways (20.9%), as compared to Route 22 (29.4%) or the county roads (28.6%). An examination of the data reveals that the individual state, county and selected local major roadways listed on Exhibit 25 (exclusive of "Remaining Borough Roads"), accounted for 89.7 percent (670 accidents) of all injury-related accidents, with Route 22 accounting for 42.4 percent (317 accidents) of all injury-related accidents in North Plainfield.

Motor vehicle accidents along Route 22 accounted for the majority of fatalities (4 persons) in North Plainfield from 2007 to 2011, with the remaining three fatalities occurring on local roads (2 persons) and county roads (1 person). Fatal accidents along Route 22 involved three pedestrian fatalities and one pedalcyclist fatality. Of the three fatalities occurring on local or county roads in North Plainfield between 2007 and 2011, two accidents were alcohol-related, including one accident on County Route 531 (Watchung Avenue), which resulted in the death of one pedestrian, and one accident (fixed object) on Grove Street, resulting in one fatality (driver). The remaining fatal accident (fixed object) occurred on Rockview Avenue, resulting in one fatality (driver).

In summary, the data indicates that the densely developed residential and commercial character of North Plainfield, combined with the varied modes of personal transportation (i.e. motor vehicle, pedalcycle, pedestrian), may often lead to conflicts, particularly within the central portion of the borough and along the Route 22 commercial corridor. Although a more detailed analysis would be required to ascertain specific causal-effect patterns relating to traffic accidents in the borough, it is clear that based upon the summary analysis provided above, North Plainfield must take into consideration vehicular and pedestrian traffic safety as part of a comprehensive approach to transportation planning, particularly along the borough's major thoroughfares; in proximity of the borough's public school

facilities; and, within the more densely developed commercial/residential central portion of the borough.

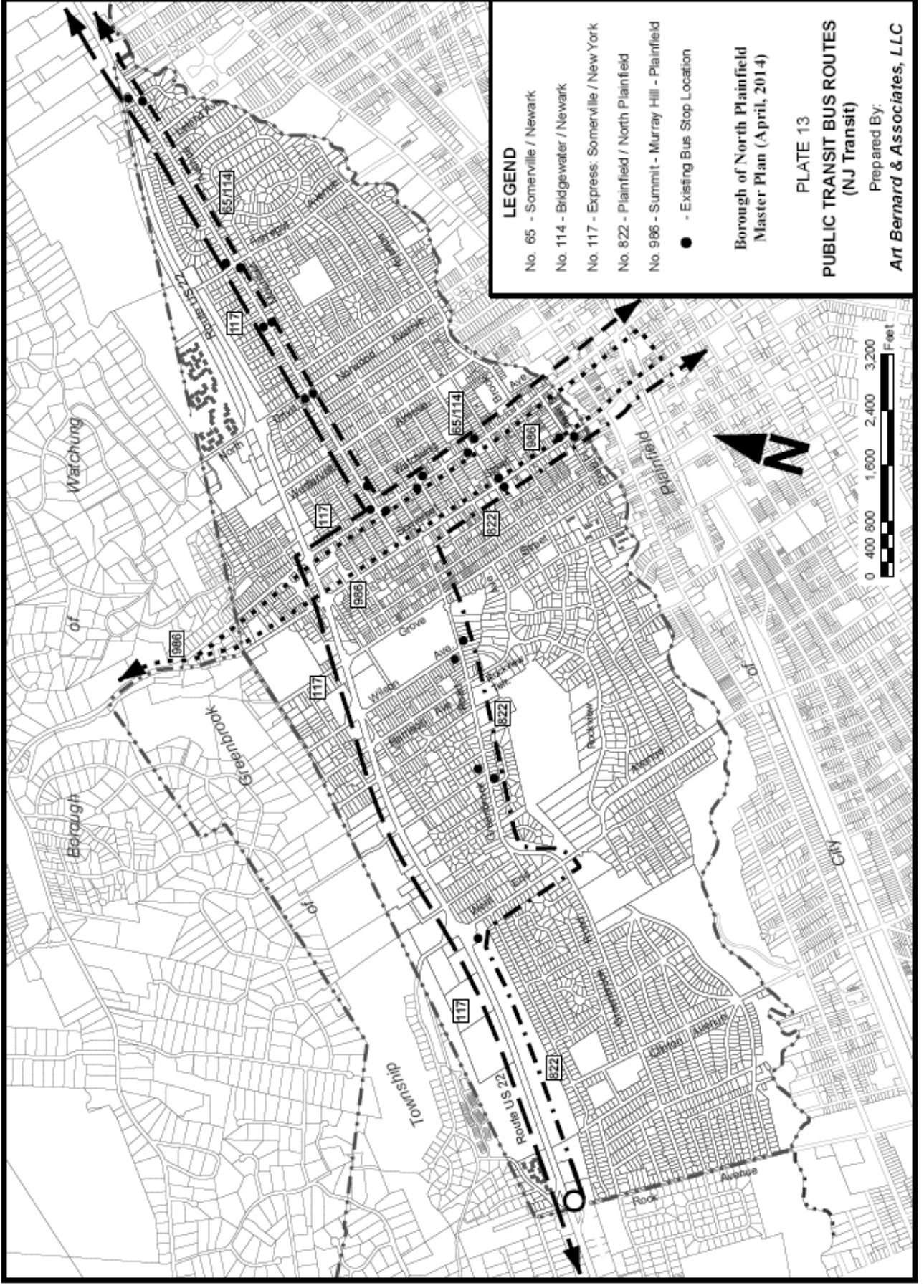
It is important to note that this initiative has already begun with the cooperative efforts of the North Plainfield Public School District and the Borough through the study and implementation of the Safe Routes To School program, to enhance pedestrian safety and awareness for the borough's public school attendees, staff and parents (see p. 61).

Public Transit Systems

Public transit service to North Plainfield and the surrounding area is mainly provided by New Jersey Transit (NJ Transit), which operates bus service along main thoroughfares in the Borough, and passenger rail service in the City of Plainfield. Public transit service in the Borough is illustrated on Plate 13. As shown, bus service is provided along the westerly portion of Route 22, Greenbrook Road, Somerset Street, Watchung Avenue, and Mountain Avenue, with several posted bus stops provided along each route. Passenger rail service along the NJ Transit Raritan Valley line is provided in the City of Plainfield at two locations: the Downtown Plainfield Station, located between Park Avenue (County Route 531/Somerset Street) and Watchung Avenue, about one-quarter mile from North Plainfield; and, the Netherwood Station, located between North Avenue and South Avenue (NJ Route 28), in vicinity of Leland Avenue (approximately one mile from North Plainfield).

The Raritan Valley passenger rail line extends from High Bridge Borough (Hunterdon County) to Newark Penn Station (Essex County). Connecting service is provided at Newark Penn Station with the Northeast Corridor line, which provides direct service to Penn Station New York. The Northeast Corridor is owned by Amtrak, and provides regional access to major northeast cities, including Boston, Philadelphia, and Washington, D.C. The Raritan Valley Line also provides connecting service with PATH service to Manhattan Borough (New York City). Full rail service is provided during the weekdays, with limited, hourly service provided during weekends and holidays.

Several NJ Transit bus lines serve North Plainfield on a daily basis, including commuter bus service to regional destinations and local service to nearby communities. Local daily commuter bus service between Bridgewater Township (Somerset County) and New York City (Port Authority Bus Terminal) is provided on Line 114, which operates weekdays, weekends and holidays, serving several nearby communities including Plainfield, Dunellen, Scotch Plains, and Mountainside. Additional local daily commuter bus service to North Plainfield and these nearby communities is provided by Line 65 on weekdays and Saturdays only, between Somerville and Newark. Connecting rail service to the Raritan Valley Line is provided by both bus lines to the Downtown Station in Plainfield.



LEGEND

- No. 65 - Somerville / Newark
- No. 114 - Bridgewater / Newark
- No. 117 - Express: Somerville / New York
- No. 822 - Plainfield / North Plainfield
- No. 986 - Summit - Murray Hill - Plainfield
- - Existing Bus Stop Location

**Borough of North Plainfield
Master Plan (April, 2014)**

**PLATE 13
PUBLIC TRANSIT BUS ROUTES
(NJ Transit)**

Prepared By:
Art Bernard & Associates, LLC



Express bus service during weekday AM and PM peak periods between Somerville and New York City is provided by Line 117, with limited service to communities located along the Route 22 corridor only, including service to Somerville, Bound Brook, North Plainfield, Scotch Plains, Mountainside, Union, and New York City. No connecting rail service is provided.

Local bus service between North Plainfield and Plainfield is provided by NJ Transit Bus Line 822, which operates weekdays and Saturdays, and on limited holidays. This line provides local residents with bus service between the former Pathmark shopping center (east of Rock Avenue) on Route 22 in North Plainfield and Terrill Road in Plainfield, including direct access to the JFK Medical Center – Muhlenberg Campus (Plainfield). The line provides connecting service to the Raritan Valley passenger rail line at both the Downtown Plainfield and Netherwood train stations.

Suburban Transit, a private bus company, provides daily (one round trip) service between South Plainfield and Atlantic City. This line serves several nearby communities including North Plainfield, Plainfield, Dunellen, and Piscataway Township.

Safe Routes To Schools

The Safe Routes To School (SRTS) program is a federally-funded initiative, administered by the states to improve the ability of elementary and middle school students (grades K-8) to safely walk and bicycle to school. In Somerset County, the New Jersey Department of Transportation has partnered with Ridewise, a non-profit Transportation Management Agency, to coordinate and assist local school districts and municipalities to conduct studies and develop ‘walking school buses’; conduct ‘walkability’ and ‘bikeability’ audits; organize public awareness and information workshops; and, create school travel plans. Ridewise also assists municipalities and school districts in applying for funding of infrastructure and non-infrastructure measures to achieve the following purposes of the program:

- To enable and encourage children, including those with disabilities, to walk and bicycle to school;
- To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and,
- To facilitate the planning, development and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption and air pollution in the vicinity (approximately two miles) of primary and middle schools (Grades K-8).

The program establishes two distinct types of funding opportunities: infrastructure projects (the planning, design and construction of physical improvements), and non-infrastructure related activities (i.e. education, enforcement and encouragement programs). Infrastructure projects include the installation of sidewalks, crosswalks, signals, signage, traffic-calming, and bicycle facilities within two miles of a designated elementary or middle school facility. Non-infrastructure projects include activities such as public awareness campaigns, walk and bike to school events and training, traffic education and enforcement, and student lessons on bicycle and pedestrian safety, health, and the environment. Federal regulations require that a minimum of ten percent of funding be applied to the non-infrastructure component of the program.

Ridewise recently completed a study of the elementary schools (East End School, West End School and Stony Brook School) intermediate school (Somerset School) and surrounding neighborhoods, to determine the need for improvements to pedestrian facilities (i.e. sidewalks, handicap ramps, crosswalks, signage, etc.) for students travelling to and from school on foot or bicycle on designated walking routes to school. The study identified “Safe Route Corridors” for each school, and provided an inventory of existing conditions and necessary improvements to improve pedestrian and bicycle access to school children. Plate 14 illustrates these Safe Route Corridors.

North Plainfield has submitted a grant application for funding pedestrian-oriented improvements in vicinity of the Borough’s elementary and intermediate school buildings. The North Plainfield public school district is responsible for infrastructure improvements directly adjacent to public school properties.

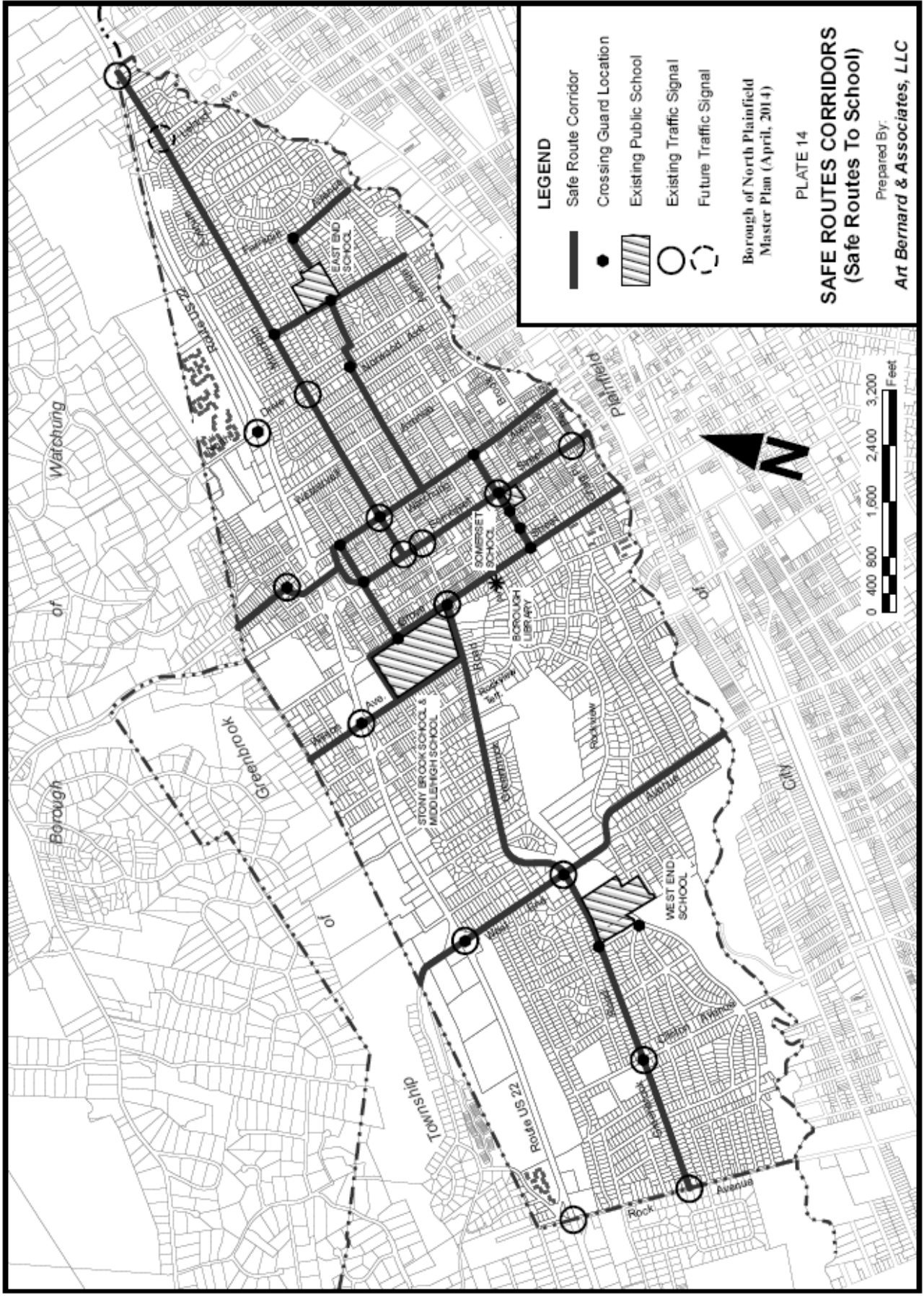
COMMUNITY FACILITIES & SERVICES

Municipal Facilities

Borough Hall (Administrative Offices)

The Borough municipal offices are located in the center of the town, at the corner of Somerset Street and Lincoln Place (Block 93, Lot 6.01). This location has served the community since the initial construction of the municipal building in 1937, which was built adjacent to the former firehouse building (constructed in 1903). Although the municipal building was expanded in 1958, the North Plainfield 1974 Master Plan acknowledged the obsolescence of the facility in terms of lack of space and efficient operation of municipal services.

To improve the municipal building facility and enhance the provision of municipal services to Borough residents and the local business community, the municipal building and administrative offices were recently renovated and expanded. Final renovations to the



LEGEND

- Safe Route Corridor
- Crossing Guard Location
- ▨ Existing Public School
- Existing Traffic Signal
- Future Traffic Signal

Borough of North Plainfield
Master Plan (April, 2014)

PLATE 14

**SAFE ROUTES CORRIDORS
(Safe Routes To School)**

Prepared By:
Art Bernard & Associates, LLC



municipal building are pending, including among others, exterior facade improvements, roof repairs, and interior renovations to the Municipal Court/Council Meeting Room.

With this recent renovation, the total gross floor area of the municipal building is approximately 29,978 square feet (SF), including general administrative offices (+5,476 SF), Police department (+13,795 SF) and Fire department (+8,056 SF). Administrative offices in the municipal building include the mayor and business administrator offices; the Borough Clerk's office; the Finance Department; the Tax Assessor's and Tax Collector's offices; Department of Public Works; Code Enforcement, Planning and Zoning Department, and Construction offices; and, the Health Department offices. In addition to these administrative offices, the Borough police department is located within the municipal building, including the Municipal Court; Violations Bureau; and, Parking Authority. With the expansion and modernization of the municipal building and offices, the administration and provision of public services to the community are greatly improved, and adequate to meet the future needs of North Plainfield.

The Borough recently purchased an additional property to the west of the existing Firehouse, on Lincoln Place (Block 93, Lot 7). The lot was formerly utilized for residential purposes and is currently developed with a two-story frame structure (former dwelling) and detached garage. The structures are in good condition and are currently utilized for storage use only. Although there are no definitive plans at for the future use of this property or structures, two options include the continued use of the structures for storage, or the demolition of the on-site structures and use of the lot area for expanded parking to serve the municipal building. Overall, the municipal complex site (Block 93, Lots 6.01 & 7) comprises a total land area of 42,222 square feet (0.97 acres), including the main municipal building, firehouse, parking lot areas, and the above noted storage buildings (former dwelling & garage).

As of march, 2012, North Plainfield had a total of 49 staff members (29 full-time & 20 part-time), exclusive of the Police department (82 full-time & part-time) and the Fire Department (31 full-time & part-time). Of the 49 staff members, 34 full-time and part-time staff members perform general administrative functions, while the remaining 15 employees include Public Works/Road Department staffing.

Off-street parking for town officials and police vehicles is provided to the rear of the municipal building and firehouse along Vine Street. One parking lot is paved, with access from Somerset Street and from Vine Street. A second, unpaved parking area has access from Vine Street only. The combined total off-street parking capacity for these two parking lots is approximately 30 vehicles. Additional parking for municipal employees (19 spaces) is also provided in a municipal parking lot, located across from the municipal building at the corner of Somerset Street and Race Street.

An additional Borough-owned building is located on Lot 13.03 of Block 131, along the south side of Greenbrook Road (adjacent to Stony Brook Park). Until recently, the building was utilized by the Borough Police Department as part of a community outreach program. The structure is currently vacant and in disrepair. The Borough recently approved a Bond Ordinance for the demolition of the entire structure and the construction of a new pre-fabricated office/storage building and concession stand for future use by the Borough Recreation department. The replacement pre-fabricated structure would be elevated to avoid adverse frequent flooding conditions on-site.

Vermeule Mansion & Vermeule Community Center

The Vermeule Mansion and Vermeule Community Center are located in the western portion of the Borough on the Vermeule Mansion property, at Greenbrook Road and Clifton Avenue (Block 199.01, Lot 1). The site is 4.27 acres and also contains the Recreation Department building (“The Brunson Garage”). The three-story Vermeule Mansion, constructed in the early 1800’s, has been renovated and restored for adaptive reuse by the Borough and local community organizations. The mansion was placed on the National and State Register of Historic Places in 2004. The first floor of the mansion includes the Matilda Fleetwood Camera Museum and public meeting room. The second and third floors of the museum are utilized for cultural activities and by local artists. The mansion is open for scheduled public tours.

The two-story Vermeule Community Center, was constructed in 1985, and has a main meeting/event room with a stage, general offices and meeting rooms, and a kitchen. The basement of the Community Center has additional meeting rooms and storage space. The Community Center is utilized by the Borough for Council meetings, as well as for other public advisory and board meetings. The Center and grounds are also open to Borough organizations for public events, including community celebrations and activities (Senior Picnic, flu shot clinic, etc.). The Center is also designated as an emergency shelter for Borough senior citizens displaced by local flooding. This facility provides excellent public space for community events and activities for the foreseeable future.

North Plainfield Branch Library

The North Plainfield Library is located in the central portion of the Borough on Grove Street, adjacent to the Rockview Avenue intersection. The North Plainfield Library was initially constructed by the Borough, and opened to the public in 1969. In the 1970’s, the library became a part of the Somerset County Library System, which at present, includes nine branch libraries throughout the county.

In accordance with an agreement with the Somerset County Library System, the Borough is responsible for the physical maintenance of the library building and grounds, including

utility costs, repairs and renovations, and public safety. The county is responsible for day-to-day operations of the library, including staffing, materials and equipment, and, salaries and benefits. The Somerset County Library System is presently preparing a Strategic Plan for the entire county library system.

The library building is approximately 14,000 square feet in floor area, comprising shelving for books and other media, fourteen computer stations, study desks/areas, meeting rooms (open to the public), administrative offices, and staff support areas. These facilities occupy the main floor level of the library, as well the basement level. Library facilities are open to all members of the public. Library patrons may borrow and return books, materials and media from any branch library in the system.

The total circulation in the county library system is approximately 978,500 items, including books, video, audio and other media. The library system also includes electronic media (ebooks, etc.) available for download by library patrons. The North Plainfield Branch Library has a total circulation of approximately 99,885 items. In an effort to increase desk/sitting space for studying and reading, the North Plainfield Branch Library is planning to archive older books and media in the near future. Archived materials would still be available to the public, but would be stored to facilitate increased floor area for the many programs offered by the library.

The North Plainfield Branch Library provides numerous programs for persons of all ages, particularly school-aged children. These programs include a variety of reading, music and movie programs, and craft activities. In addition, out-reach programs to the community include school visits at the library facility as well as at local schools, including local day camps and daycare facilities. Books and other materials available from the library are also distributed to homebound seniors in the Borough by volunteers.

Since 1969, various improvements have been made to the library facility, including roofing, flooring, basement improvements (meeting room and storage base), energy efficient lighting systems, and various upgrades to mechanical elements serving the facility. These improvements and upgrades tend to occur on an 'as needed' basis, and have allowed the library branch to maintain adequate service to the community. Future improvements to the library include installation of solar panels as part of energy efficiency program funded by Somerset County. At present, the library parking lot provides a total of twenty-one (21) spaces, including one handicap stall.

Two issues which the County branch library and the Borough currently face include the high volume of school-age children travelling to and visiting the library after school hours, and handicap access to the lower level of the library building. With respect to the high volume of school-aged children, the County provides a security guard to help maintain safety within the building.

Public safety is an issue outside the building because children often play on the library grounds, the sidewalks or on Rockview Avenue. Pedestrian safety is also a concern along Grove Street. The North Plainfield police assist in maintaining safety outside the library building when personnel are available. It is recommended that this issue be investigated further to ascertain what measures may be taken to ameliorate these conditions.

The second issue for the library facility concerns public handicap access to the basement level of the building. No interior wheel chair access (i.e., elevator) to the basement level is provided. Handicap, wheelchair-bound persons may only access the basement level through an existing exterior fire door located at the rear of the parking lot. The fire door is insufficient in width (24 inches) to accommodate most wheel-chairs, particularly non-foldable motorized wheelchairs. While a temporary solution to this deficiency might include modification of the existing exterior rear entry point to the buildings lower level, the desired and obvious solution is the installation of a handicap accessible interior elevator to facilitate access to the lower level. Since the library building and grounds are the responsibility of North Plainfield, it is therefore recommended that the building be modified to provide an interior-access elevator for handicap access to the building's lower level and to facilitate improved circulation inside for library for daily programs and operations.

Police Department

The North Plainfield Police Department is located within the recently renovated municipal building on Somerset Street. The Department occupies a portion of the first and second floors of the building, comprising an approximate floor area of 3,306 square feet. While renovations are not yet fully complete, the upgraded facility provides a significant improvement to police operations.

The recently renovated floor area in the municipal building for use by the North Plainfield Police Department is provided as follows:

- 1,056 SF Office, Administrative & Criminal Investigation Division (CID)
 - 1,446 SF Dispatch, Records Report Room, Traffic Division
 - 407 SF Detention & Cell Block
 - 397 SF Locker Rooms
- 3,306 SF Total**

The North Plainfield Police Department is an accredited department, having met the standards established by the New Jersey State Association of Chiefs of Police Accreditation Commission. The Department received a Certification of Re-Accreditation from the Commission in November, 2009.

The North Plainfield Police Department has a total staff of 82 persons, including law enforcement officers, administrative personnel, and school crossing-guards. The Department has a total of 45 sworn police officers, 29 School Crossing Guards, and eight full-time and part-time staff (parking enforcement, dispatch, records, administrative & police aid). The Department is comprised of two divisions: Patrol Division; and, Criminal Investigation Division (CID). The CID has a total of eight officers, including the division Lieutenant; six detectives (adult investigations, youth services, crime prevention, school resource); and, one special detail officer. The Patrol division has 70 personnel, including the Division Lieutenant; two Patrol Platoons (each comprised of three Sergeants and twelve Patrol Officers); 29 Crossing Guards; three parking enforcement staff; three Records Unit staff; two Traffic Unit personnel; and, civilian dispatchers (Communications Unit).

At present, the Department personnel and facilities are adequate to meet the needs of the community. Other than the need to replace and/or upgrade equipment serving the Department, as necessary, there are no current plans to upgrade the portion of the municipal building utilized by the Police Department.

The North Plainfield Police Department conducts several programs and community outreach projects as part of its routine activities. These programs include Drug Abuse Resistance and Education (D.A.R.E); Gang Resistance Education and Training (G.R.E.A.T.); Summer Teen Evening Program (STEP); School Resource Officer (SRO); and, The Crime Prevention Unit. In addition to these community outreach programs, the Department has recently initiated the Pedestrian Safety Education and Enforcement Program, designed to raise awareness of pedestrian safety in the Borough, particularly at high-incident locations, as well as to increase enforcement of pedestrian related violations.

The Crime Prevention Unit conducts educational seminars and presentations in the community as well as coordinating the Borough's Neighborhood Watch Program. The D.A.R.E., G.R.E.A.T., STEP, and SRO programs provide educational instruction to the Borough's school age children concerning public safety and drug abuse awareness. These outreach programs provide an excellent opportunity for the Police Department to educate the Borough's school-aged children and residents concerning issues confronting the community, thereby reducing crime, and enhancing public safety and police protection.

The Borough has a total of 25 active vehicles in the Police Department. These vehicles serve routine police tours, emergency response situations traffic operations, criminal investigations, police training, and community outreach programs. The Department owns a variety of vehicles including, police cruisers (marked and unmarked), sport utility vehicles (SUV's), and special operations vehicles. The vehicle pool includes twelve patrol unit vehicles (10 marked unit, one patrol supervisor unit & one marked pickup); seven CID vehicles (five unmarked units, one CID supervisor unit & one marked-CID D.A.R.E.

motorcycle unit); and, seven special use vehicles (Chief's unit, Captain's unit, D.A.R.E. unit, one training/patrol unit, one undercover unit & one marked traffic trailer unit).

Many units in the police vehicle pool include older, high mileage vehicles, and vehicles which are not as fuel efficient as newer models. While proper routine maintenance may extend the service life of these units, it is important that the Department regularly assess the practicality of maintaining older vehicles in the fleet in lieu of purchasing new vehicles, which incorporate the latest features available for law enforcement, including fuel efficiency. As part of a routine program to replace emergency vehicles and equipment, the Borough recently approved a Bond Ordinance to replace two emergency vehicles (traffic safety/inclement weather vehicle & training vehicle/inclement weather vehicle) and firearms.

Fire Department

The North Plainfield firehouse is located on Lincoln Place, adjacent to town hall. The firehouse facility was originally constructed in 1937, and was recently upgraded as part of the overall renovations to the municipal building site. While the 1974 Master Plan initially recommended the relocation of the firehouse to another centralized location along Somerset Street, the recent renovations to the existing firehouse facility effectuate the intent of the 1974 Plan to enlarge and upgrade the facility while maintaining centralized access to all portions of the Borough.

The firehouse has a total of four (4) truck bays, two of which were included as part of the renovations to the firehouse. Additional features of the firehouse include administrative offices, dormitory space for the platoon shifts, lounge and kitchen area. Renovations to the station are not yet completed, including installation of new windows, roof repairs, and repair/replacement of the heating ventilation/air condition system. These remaining improvements are anticipated to be completed in the near future.

While the provision of four truck bays is adequate to meet the needs of the Department into the future, a lack of formal storage space for fire and emergency equipment remains. At present, the only large space sufficient in size for storage of fire-fighting and other emergency equipment is in the rear area of the individual truck bays. Use of this space is not suitable for equipment storage, as it is not contained or secured.

The Fire Department for North Plainfield continues to operate as the only full-time, paid fire company in Somerset County. The operation and capital improvements of the Department are funded through the municipal budget and through funding drives. The Department consists of four platoons for fire-fighting, and a separate contingency for Emergency Medical Services (EMS) and fire prevention. The Department has a total of 31 full-time, paid staff plus approximately nine volunteer fire-fighters, and approximately ten volunteer

emergency medical technicians (EMT's). The four fire-fighting platoons operate on 24-hour shifts. The EMS division of the Department also operates on a 24-hour basis, with 12-hour split shifts beginning at 6:00 am and 6:00 pm, daily, respectively. Dispatch for all emergency calls to the department is provided by the Somerset County Communications Center through the 911 network.

Full-time staffing for the department includes one Fire Chief (Director) and one Deputy Fire Chief (Operations); five Captains; four fire-fighting platoons, each consisting of one Acting Officer/Fire-Fighter, one Shift Fire Inspector/Fire-Fighter, and three Fire-Fighters; one EMS/Fire Prevention division, consisting of one Fire Inspector/EMT, and two civilian EMT's; and, one civilian administrative assistant.

The National Fire Prevention Association (NFPA) recommends that for 'career' fire departments, a minimum of four (4) firefighters should be available for first-alarm calls. On rare occasions the Department responds initially to first alarm calls with three fire-fighters. This is the result of occasional scheduling difficulties, absence due to illness, or temporary unavailability of the Shift Fire Inspector or Acting Officer during the initial call. To offset this occasional shortfall, the Department has applied for federal funding to cover the hiring of three additional fire-fighters. In addition, North Plainfield has a long-standing agreement with the neighboring City of Plainfield for assistance from the Plainfield Fire Department on all calls.

The Department presently has five emergency vehicles for fire and emergency medical calls, plus a wide array of emergency fire and rescue equipment. The vehicles include three fire trucks and two ambulances. The fire trucks consist of one 750 gallon pumper (year built: 1999); one 500 gallon pumper (1992); and, one 300 gallon/75-Foot ladder truck (2002). The 500 gallon pumper is twenty years old and is due for replacement. Each ambulance is a standard "Type 3" ambulance truck (2000, 2005).

Replacement of emergency vehicles and apparatus occurs on an 'as needed' basis, or when such vehicles or equipment are determined to be obsolete for effective use in protecting public safety. The Borough recently approved a bond ordinance for the purchase of a new replacement ambulance and new fire-pumper apparatus to upgrade the existing 20-year old 500-gallon pumper. Other than these recent authorized expenditures to replace/upgrade existing emergency apparatus, and the eventual need to replace the above noted 500 gallon pumper truck, the Department is adequately equipped to meet the emergency fire and rescue needs of the community. To aid rescue operations during adverse flooding conditions, the Department is planning to purchase an inflatable boat in the near future.

Aside from fire-fighting, one of the primary duties of the Department is routine fire inspection of all commercial and industrial buildings, apartment buildings (3 or more units

per building), and public buildings in the Borough. These inspections are conducted throughout the year, and help to minimize the loss of life or property resulting from fires due to electric code violations, improper use or condition of electric wiring or apparatus (i.e. space heating mechanism), or other fire safety deficiencies. The inspections are conducted on a daily basis during each platoon shift.

The Fire Department conducts several community outreach and fire-safety awareness programs, including fire safety/prevention instruction in the Borough's schools, and at monthly meetings for senior citizen residents. As a public service to senior residents, the Department conducts a 'Knock On Door' outreach program to ensure that smoke alarm batteries are replaced routinely. Additional programs for senior citizens includes monthly blood pressure screenings at the Senior Citizen Center by the Department's EMS division, and the 'File of Life' program, which provides magnetic red plastic holders to seniors for the listing of medical conditions and medicines in their homes to aid emergency personnel during emergency call.

Based upon post-incident investigations, the Department has determined that many fires in the Borough result from overcrowding conditions, which typically exhibit code and/or safety violations. While the issue of overcrowding is best addressed through continued monitoring and enforcement of existing local ordinances and state statutes, the Borough should also seek to increase public awareness of fire safety conditions and the dangers associated with the creation of illegal apartments or illegal boarding-rooms.

The 1974 Master Plan for North Plainfield noted concerns for traffic congestion on Somerset Street. Congestion on Somerset Street and other major thoroughfares in the Borough increase emergency call response times due to the need to by-pass congested areas and utilize less-direct side streets. This situation remains a critical concern for the Department, and should be investigated to determine measures which may be taken by the Borough to improve traffic circulation and reduce call response times.

Department of Public Works

The Department of Public Works administrative offices are located in the municipal building. The Borough Garage is located in the central portion of the town in the vicinity of Steiner Place and Dupont Street, adjacent to an existing Somerset County Road Department facility. The Department has a total of 13 full-time employees, including the Director of Public Works, Foreman, Working Foreman, nine laborers, and one housekeeper. The Department has three part-time staff members for administrative and additional housekeeping services (general cleaning, trash removal, etc.).

The Public Works Department provides for the management and maintenance of all Borough-owned facilities, including buildings and grounds; municipal vehicles and

equipment (except police & fire vehicles); and, Borough-owned roads and parks. Additional responsibilities include snow and ice removal of all local streets (except county roads); local street cleaning; and, the collection of large metal trash items (TV's, refrigerators, etc.) and bulk trash items (too large for regular trash carrier collection), by appointment only.

To prevent against adverse flooding conditions, the Department performs stream cleaning as necessary, as well as maintenance of storm drainage facilities along the Borough's roads. The Department also responds to flood emergencies throughout the town, coordinating directly with the Borough Police for local road closures and traffic detours. The removal of trees located within public rights-of-way or on Borough-owned property (including fallen/damaged trees resulting from storms) is contracted out by North Plainfield. In addition, sanitary sewer maintenance and/or emergency response is contracted by the Borough.

The Department has a variety of maintenance vehicles and equipment to provide necessary municipal services, including trucks (4 dump trucks, 4 pick-up trucks, 4 special use trucks), excavation equipment (2 front-end loaders and one back hoe), specialty vehicles (cherry picker, street cleaner, compactors, etc.), trailers, and specialty equipment. Many maintenance vehicles are more than ten years old and require continued maintenance and repair for efficient use and safe operation. The physical condition of the vehicles and equipment is further degraded by continued outdoor storage by the Borough Municipal Garage site. The Borough recently proceeded with plans to fund the purchase of three new maintenance dump trucks. The Borough should continue to replace older vehicles and equipment utilized by the Department in order to provide adequate services to the Borough residents. Replacement of older vehicles and motorized equipment with newer models will also benefit the town by the use of more modern, fuel-efficient vehicles.

Municipal Garage & Maintenance Yard

The Borough municipal garage site is located in the central portion of the Borough, in vicinity of Steiner Place and Dupont Street (Block 103, Lot 9). The site is located in a transitional area comprised of residential uses, commercial establishments and parking lots, and the Somerset County Road Department facility (Lot 42), which is located directly adjacent to the municipal garage site. The municipal garage site has an area of 15,253 square feet (0.35 acres), and is developed with two garage buildings and a road salt/sand storage building. The main garage building is approximately 3,266 square feet in area and has five bays. The auxiliary garage is 1,040 square feet, and has one bay. In addition to these structures, the municipal garage site has two fuel pumps (diesel & gasoline) for public works vehicles and other municipal vehicles.

The site is fenced and paved, and is utilized for the outdoor storage of most public works trucks, and specialty use vehicles and equipment. While the existing building facilities on-site are in fair condition, they continue to age and are too small for indoor storage of most department vehicles and equipment. This has resulted in continued overuse of the municipal garage site with adverse impacts to the surrounding development, as well as continued outdoor exposure of maintenance vehicles and equipment.

The 1974 Master Plan recommended the acquisition of the adjacent Somerset County Road Department site to expand and improve the Borough's maintenance yard facility. The County site has a lot area of 26,428 SF, and has an existing 9-bay 5,600 SF garage building. Somerset County anticipates constructing a new road maintenance facility in Bridgewater Township in the near future, which will result in the eventual closure of the county facility in North Plainfield. Upon closure of the existing county facility, the Borough expects to enter into an agreement with Somerset County, allowing North Plainfield to utilize the adjacent county maintenance garage site and incorporate the property with the existing municipal garage site.

It is recommended that efforts continue by the Borough to assure that this long-standing goal to expand and improve the Borough maintenance garage site is achieved. It is further recommended that North Plainfield explore the need to redesign/modernize an overall expanded maintenance yard site in order to provide efficient operations and adequate indoor storage of trucks and specialty equipment. The redesign of the site should also take into consideration the need for adequate buffers and screening of adjacent residential uses and neighborhoods from on-site maintenance activities and heavy truck/vehicle movements.

Solid Waste & Recycling

Solid waste collection in the Borough is the responsibility of all residential and non-residential property owners. Residential property owners are required to contract with private haulers for the removal of all solid waste, except for the collection of large metal and bulk trash items, which is provided by the Borough. The seasonal collection of grass clippings, brush and leaves is also collected by private hauler, under contract with the Borough. Non-residential property owners must contract with private haulers for the removal of all waste items. The Borough does not collect recyclable materials, which is the responsibility of Somerset County.

The Somerset County Recycling Program collects all recyclable materials generated by residential uses in the Borough. Typical recycled items include glass and plastic jars and bottles (#1-#7); steel, bi-metal and aluminum; newspapers (including inserts); junk mail and other papers; and, corrugated cardboard and chipboard materials. The County program

provides for the pickup of these recyclable materials bi-weekly, throughout the calendar year. In addition, the Somerset County Recycling Center (Bridgewater Township) accepts recyclable materials monthly on pre-scheduled days.

Additional recyclable materials accepted by Somerset County at the Recycling Center include motor oil; rechargeable batteries; electronic appliances (microwave ovens, TV's, radios, CD/DVD players, etc.); textiles; and, empty paint cans. Hazardous household products and materials are collected by the County at various drop-off locations throughout the County. Hazardous substances accepted by the County include automobile fluids; pesticides; fluorescent tubes and lights; fire extinguishers; pool chemicals; propane tanks; etc. In addition to the collection of recyclable materials by Somerset County, public workshops are offered by the County concerning methods of residential composting of kitchen waste and grass clippings to further reduce the waste stream.

Municipal Public Parking Lots & On-Street Parking Program

The Borough maintains two public parking lots to serve local patrons in the business community. These lots are located in the central business area of the town, including one lot on Craig Place (Block 92, Lot 15), between Somerset Street and Duer Street, and the second lot located on Somerset Street, opposite Borough Hall (Block 82, Lot 2). Off-street parking in both lots includes a combination of hourly, metered parking for the public, and permit parking. In addition to these parking lots, the Borough also maintains an on-street metered parking program, which includes portions of the central business area along Somerset Street and along a portion of Watchung Avenue. The Borough's off-street parking and on-street parking program is enforced by the Borough Police Department, and ensures the availability of parking spaces for patrons to local businesses in the central business area.

The Craig Place municipal parking lot has a total of 52 spaces, including thirty (30) metered spaces and twenty-two (22) permit parking spaces available for purchase to the general public on a first-come, first-served basis. The Somerset Street parking facility has a total of 33 parking spaces, with nineteen (19) permit spaces for Borough employees and fourteen (14) metered spaces for use by the general public. A total of 233 on-street metered parking spaces are provided on various Borough streets in vicinity of Somerset Street and Watchung Avenue, including designated on-street spaces for handicap use.

Metered on-street parking spaces are located within the central business area of North Plainfield, along Somerset Street, between Grandview Avenue and the Borough boundary with the City of Plainfield, and along Watchung Avenue, south of Manning Avenue and the Plainfield border. Additional on-street metered spaces are located along Craig Place and Pearl St, as well as along small portions of Harmony Street, Somerset Place, and Linden Avenue.

United State Post Office

The Borough of North Plainfield United State Post Office facility is located in the central business area within an existing commercial building on the northeast corner of Somerset Street and Jackson Avenue (Block 80, Lot 24). The U.S. Postal service recently proposed the possible closure of the North Plainfield facility, as well as other postal facilities throughout the state and nation to consolidate post office operations.

Given the long-standing service provided by the existing post office in North Plainfield, and the unique identification provided to the community by this facility, the Borough Council officially requested, by Resolution on September, 2011, that the United States Postmaster General allow the North Plainfield postal facility to remain open to serve the Borough residents and 'downtown' business community. It is recommended that efforts continue to ensure that the Borough post office remains open to serve Borough residents and the general public.

Public Schools

The North Plainfield public school system consists of five active school buildings, one special purpose school building, three administration/operations buildings, and two athletic/recreation facilities. The school buildings have been expanded and/or renovated in the past to meet the evolving educational needs of the community. The various public school buildings and facilities are listed on Exhibit 26, which details the year of initial construction and/or addition(s) for each school building; land area; number of classrooms; grades instructed; current enrollments, and school building capacities.

The comprehensive 1974 Master Plan reported deficiencies in the Borough's public school system, largely due to aging school building facilities and the lack of space to accommodate large public school enrollments experienced at the time. Although enrollments were projected to decrease through the latter part of the 1970's, it was clear that the public schools in the Borough were in need of modernization and enlargement to meet the educational needs of the community for the foreseeable future. Toward that end, the District sought to meet those challenges, which resulted in the expansion and renovation of all active school buildings over the past three decades.

Today, all public school buildings and facilities are well maintained and are continually upgraded to provide a safe and suitable learning environment for the Borough's public school attendees. Although certain schools in the district currently operate near or above 'district practices capacity', the school district buildings have sufficient space to meet public school enrollments into the future, as projected. Aside from the continuing need to upgrade or renovate existing public school facilities as needed, the public school facilities are adequate to meet the present and future educational needs of the district.

Exhibit 26

Existing Public School Facilities
Borough of North Plainfield
(2012)

Facility	Initial Construction (Floor Area)	Additions (SF)	Existing Land Area	Number of Classrooms	Grades Instructed	Student Capacity (District Practices)	Enrollment (Oct. 2011)
East End Elementary School Total Floor Area: 54,900 SF	1936 (12,800 SF)	1948 (5,800 SF) 1953 (5,600 SF) 1964 (17,200 SF) 2003 (13,500 SF)	6.1 Acres	22	K - 4	486	462
Stony Brook Elementary School Total Floor Area: 29,300 SF	1951 (17,400 SF)	1966 (7,100 SF) 1987 (4,800 SF)	43.0 Acres	14	K - 4	257	255
West End Elementary School Total Floor Area: 60,020 SF	1935 (12,000 SF)	1948 (5,400 SF) 1953 (7,800 SF) 1965 (22,320 SF) 2003 (12,500 SF)	13.83 Acres	26	K - 4	518	564
Somerseset Intermediate School Total Floor Area: 87,589 SF	1904 (11,500 SF) 2004 (69,589 SF)	1914 (6,500 SF) 2004 (69,589 SF)	1.45 Acres	24	5, 6	482	495
North Plainfield Middle School - High School Total Floor Area: 230,788 SF	1924 (49,500 SF)	1958 (35,675 SF) 1965 (23,500 SF) 1980 (6,400 SF) 1988 (40,000 SF) 2000 (23,510 SF) 2006 (52,203 SF)	16.84 Acres	78	7 - 12	1,550 (Grades 7-12)	514 (7,8) 1001 (9-12)
Harrison School - Bridge Program H.S. Sp.Ed. (20,000 SF) & Administration Office Building *	1914 (11,600 SF)	2006 (8,400 SF)	1.21 Acres	3	-- --	61	-- --**
Watchung School (Main Administration Building) Total Floor Area: 4,700 SF	1897 (4,700 SF)	-- --	0.69 Acres	-- --	-- --	-- --	-- --
Administration Offices (Harrison Avenue)	2003*	-- --	0.2 Acres	-- --	-- --	-- --	-- --
BOE Aux. Offices - Operations (63 Greenbrook Road)	2010*	-- --	0.08 Acres	-- --	-- --	-- --	-- --
High School Athletic Fields (Walnut Street)	-- --	-- --	5.0 Acres	-- --	-- --	-- --	-- --
Fromm Field & School Vehicle Storage (Greenbrook Road)	-- --	-- --	3.5 Acres	-- --	-- --	-- --	-- --
			TOTAL: 51.70 Acres	167		3,314	3,291

* Purchased by Board of Education in 2003.

** Included in High School enrollment figure.

As shown on Exhibit 26, all of the active school buildings have undergone expansion or renovation/reconstruction projects since their respective initial construction. As of October, 2011, the total enrollment for the North Plainfield Public School District was 3,291 school-aged children. According to information provided by the school district, the 'district practices capacity' for the district based upon the current classroom structure and current programs offered in the various public schools is 3,314 students.

Three elementary schools (grades K-4) currently serve the public school district, including West End School, located in the western portion of the Borough on Greenbrook Road and Harrington Avenue; East End School, located on Oneida Avenue in the eastern portion of North Plainfield; and, Stony Brook School, located on Grove Street in the central portion of the Borough. West End School was initially constructed in 1936, and has been expanded several times to a current gross floor area of 60,020 square feet (SF). The school has 26 classrooms and a current student enrollment of 564 children. The school has a capacity of 518 students. East End School was constructed in 1936, and has a current floor area of 54,900 SF with 22 classrooms. East End School has a current enrollment of 462 students and a capacity of 436 children. Stony Brook School has a current enrollment of 255 children and an overall capacity of 255 students. The school was initially constructed in 1951 and currently has a total floor area of 29,300 SF with 14 classrooms.

Public school education for grades 5 and 6 is provided at Somerset Intermediate School, located in the central portion of the Borough on Somerset Street and Park Place. The school was initially constructed in 1904, and reconstructed in 2004. The school has a total floor area of 87,589 SF with 24 classrooms. The capacity of Somerset School is 492 students. The current enrollment is 495 children.

The Borough's public high school (grades 9-12) and middle school (grades 7 and 8) are also centrally located in North Plainfield between Wilson Street and Grove Street, north of Greenbrook Road. The Middle School has a current enrollment of 514 students, and the High School has an enrollment of 1,001 students. The overall capacity of the High School/Middle School complex is approximately 1,550 students. The building was initially built in 1924 with 49,500 SF. The current Middle School/High School building comprises a total floor area of 230,788 SF with 78 classrooms.

The North Plainfield Board of Education administrative main offices are located on Mountain Avenue and Watchung Avenue, in the former Watchung School building. Until recently, a small portion of this building served as classroom space for a small number of students; however, more recently, the entire building is utilized for administrative purposes.

In addition to the above noted active public school buildings and main administrative offices for the school district, special needs education to middle/high school-aged children (Bridge Program - Special Needs Academy, grades 7-12) is provided at the Harrison School building located on Harrison Avenue. Two additional school-district administrative office locations

include: the Harrison School 'Annex', located adjacent to the main Harrison School building on the corner of Harrison Avenue and Chestnut Street; and a recently purchased building at the corner of Greenbrook Road and Grove Street for use as an operations office for the district.

Two recreational facilities are owned and maintained by the North Plainfield Board of Education. These include the high school football and baseball fields (Upper Krausche Field), located along the north side of Walnut Street, and Fromm Field (Stony Brook Park), located on the south side of Greenbrook Road opposite the high school/middle school complex. The School district also utilizes the Fromm Field parking area for school bus storage. All public school sites also provide indoor and/or outdoor recreational area and facilities on-site. A full discussion of the district recreational facilities is provided in the section of the basic studies update concerning Parks, Recreation and Open Space (p. 86).

Exhibit 27 presents the public school enrollment trends for the North Plainfield public schools from the 2001-2002 academic year to the present. Overall, enrollments in the district have remained relatively stable from a low of 3,081 students in 2007-2008, to a high of 3,308 in the 2002-2003 academic year. Enrollments in the past four academic years have steadily increased to 3,291 students (October, 2011).

Public school enrollment projections for the North Plainfield Public School District are presented on Exhibit 28. As shown, the recent increase in district-wide enrollment is expected to continue through the 2014-2015 academic year, rising from an initial projection of 3,288 students for the 2011-2012 academic year to 3,422 students in the 2014-2015 academic year. This represents an average annual increase of approximately 45 students per year (1.0134% average annual increase). The district does not expect any students would be "un-housed" by this projected increase in enrollments, and that sufficient space and facilities are available to accommodate the increase. It is noteworthy that public school enrollments in the district reported in the 1974 Master Plan during the 1970's were substantially higher (over 4,000 students), although school buildings at the time were substantially smaller. Given the larger, modernized building facilities serving the district today, no adverse impacts to the district practices capacity are anticipated with the projected increase of enrollments.

Public Utilities & Infrastructure

Water Supply

Potable water supply to North Plainfield is provided by the New Jersey American Water Company (NJAWC) through the "Raritan System" Franchise (Public Water System I.D. No. NJ2004002). This system provides public water supply to more than 50 municipalities

Exhibit 27

North Plainfield Public School Enrollments
2001 to 2011

GRADE	<u>2001-2002</u>	<u>2002-2003</u>	<u>2003-2004</u>	<u>2004-2005</u>	<u>2005-2006</u>	<u>2006-2007</u>	<u>2007-2008</u>	<u>2008-2009</u>	<u>2009-2010</u>	<u>2010-2011</u>	<u>2011-2012</u>
Special Education:	62	51	50	38	23	49	63	43	46	47	28
Pre-Kindergarten:	12	15	14	10	10	10	5	23	26	26	40
<u>Elementary:</u>											
K	165	227	211	228	207	219	222	221	245	251	256
1st	275	244	260	245	254	220	230	245	239	244	258
2nd	249	284	222	254	237	251	219	239	242	242	240
3rd	257	275	281	217	251	218	248	227	255	237	238
4th	<u>248</u>	<u>266</u>	<u>268</u>	<u>280</u>	<u>219</u>	<u>248</u>	<u>235</u>	<u>245</u>	<u>229</u>	<u>247</u>	<u>221</u>
Sub-total	1194	1296	1242	1224	1168	1156	1154	1177	1210	1221	1213
<u>Intermediate:</u>											
5th	216	243	252	261	282	227	244	253	247	222	260
6th	<u>294</u>	<u>243</u>	<u>243</u>	<u>267</u>	<u>264</u>	<u>265</u>	<u>235</u>	<u>254</u>	<u>257</u>	<u>241</u>	<u>235</u>
Sub-total	510	486	495	528	546	492	479	507	504	463	495
<u>Middle:</u>											
7th	249	287	236	238	258	249	252	243	253	264	248
8th	<u>254</u>	<u>264</u>	<u>289</u>	<u>242</u>	<u>254</u>	<u>247</u>	<u>237</u>	<u>253</u>	<u>243</u>	<u>248</u>	<u>266</u>
Sub-total	503	551	525	480	512	496	489	496	496	512	514
<u>High School:</u>											
9th	258	289	301	285	240	257	267	249	278	245	251
10th	215	214	256	265	267	216	196	235	234	265	243
11th	210	218	206	223	246	240	207	187	214	245	261
12th	<u>174</u>	<u>188</u>	<u>199</u>	<u>193</u>	<u>204</u>	<u>214</u>	<u>221</u>	<u>189</u>	<u>190</u>	<u>224</u>	<u>246</u>
Sub-total	857	909	962	966	957	927	891	860	916	979	1001
TOTAL	3138	3308	3288	3246	3216	3130	3081	3106	3198	3248	3291

**Public School Enrollment Projections
2011/2012 to 2014/2015**

SCHOOL YEAR	Births	GRADE LEVEL										TOTAL K - 12				
		K	1	2	3	4	5	6	7	8	9		10	11	12	SP. ED.*
2011 - 2012	374	257	264	247	241	222	260	235	247	265	252	243	261	246	48	3,288
2012 - 2013	399	268	271	279	250	240	226	266	237	244	283	230	234	254	49	3,331
2013 - 2014	376	286	283	274	282	249	245	232	269	234	260	258	221	228	50	3,371
2014 - 2015	349	270	302	286	277	281	254	250	234	265	250	237	249	216	51	3,422

Births: 1999 - 2009, NJ Dept of Health (2011)

*Special Education
(3-year average of enrollment (2009-2011) - 1.5%.

DISTRICT SUMMARIES

	<u>K - 4</u>	<u>5 & 6</u>	<u>7 & 8</u>	<u>9 - 12</u>	<u>ECP</u>	<u>Total**</u>
2011 - 2012	1,231	495	512	1,002	106	3,394
2012 - 2013	1,308	492	481	1,001	122	3,453
2013 - 2014	1,374	477	503	967	115	3,486
2014 - 2015	1,416	504	499	952	107	3,529

ECP: Early Children Program (3-year average = 30.7% of 4yr olds (2014 est.)

** Includes Special Education

located in six counties within central New Jersey. The Raritan System includes a combination of ground water wells from aquifers within the Raritan Basin and surface water sources within the Raritan River and Millstone River watersheds, including the Raritan River, Millstone River, and the Delaware and Raritan Canal. The surface water supply is also augmented by the Spruce Run Reservoir and Round Valley Reservoir. To supplement the Raritan System during peak seasonal demand, water is also purchased from the East Windsor MUA and from Newark Water Company.

Support infrastructure in the Raritan System includes two surface water treatment plants; water pressure booster stations; and, potable water storage tanks. All combined, the system has 21 pressure gradients within the service area, and treated and transferred approximately 135 million gallons per day (mgd) in 2011.

According to the NJAWC, the Raritan System has a total capacity of 129.4 mgd (millions of gallons per day) under normal conditions. The system's firm capacity (defined as the pumping/treatment capacity to meet peak daily demand when the largest pump or treatment unit is off-line) is 109.4 mgd. The system has a surplus firm capacity of an additional 37.4 mgd, based upon peak monthly pressure gradient demands. Water supply to all municipalities in the service area is based upon service area demand for all development, and not allocated to individual municipalities by contract. The total consumption of potable water for North Plainfield in 2011 was 554,533,632 gallons, or an average of 1.519 mgd. Based upon the above system description, operation and capacities, the public water supply is adequate to meet current and anticipated future needs of the community.

The Borough of North Plainfield is entirely served by public water supply lines of varying sizes. A main trunk line for the system extends along Route U.S. 22, with smaller secondary and supply pipe lines extending into the Borough's residential and commercial neighborhoods. The current system is adequate to meet the requirements for emergency fire protection and potable water needs of the community in terms of quantity and water quality, with no anticipated problems to meet future water demands. New Jersey American Water Company coordinates the need for relocation or refurbishing of water supply lines as necessary, with local and county road improvement projects. A map of existing water supply lines for the Borough is maintained by NJAWC and the Borough Fire Department.

Water quality testing for the presence of contaminants in the public water supply, as required by the New Jersey Department of Environmental Protection, indicates that the Raritan System is in compliance for all regulated contaminants. Safe water standards are met for all naturally occurring or human-caused substances and pollutants, including microbiological contaminants (chloroform bacteria, etc.); disinfectants (water treatment by-products); organic and inorganic contaminants (industrial processing by-products, erosion

of natural deposits, industrial discharges, leaching septic tanks and sewage, etc.); and, radiological contaminants (alpha emitters & radium – erosion of natural deposits).

Water quality testing for secondary contaminants (aluminum, manganese and sodium) indicates that, while aluminum was found to be within accepted standards, manganese and sodium were both found to above recommended maximum levels. These contaminants result from erosion of natural deposits and are not generally toxic. The maximum limit established for manganese is based upon the limit at which laundry is typically stained under normal conditions. The threshold for sodium content is based upon normal dietary guidelines and is not considered harmful except for persons on a sodium restricted diet.

Random individual tap water sampling conducted by NJAWC for the presence of iron or copper in the potable water supply indicates that both of these minerals were found to be in compliance with NJDEP standards. These minerals typically result from the corrosion of plumbing systems or the erosion of natural deposits (copper only).

Sanitary Sewer Service

The Borough of North Plainfield is a member of the Plainfield Area Regional Sewer Authority (PARSA), which operates a 14 million-gallon-per-day (mgd) interceptor system. Overall, the system serves a total of eight municipalities including Dunellen, Fanwood, Green Brook, North Plainfield, Plainfield, Scotch Plains, and South Plainfield. PARSA was formed in 1995 as part of a Settlement Agreement which resulted in the dissolution of the former sanitary sewer system provider (Plainfield Joint Meeting). Sewage treatment for the system is provided by the Middlesex County Utilities Authority (MUCA). Although the overall system is controlled and monitored by PARSA, North Plainfield is responsible for the maintenance and overall operation of the sanitary sewer system.

Mapping of the entire sanitary sewer system in the Borough was provided in the 1974 Master Plan. As proposed at the time, a new 'interceptor' line was shown extending through the central portion of the Borough from the northerly portion of Somerset Street, adjacent to the Green Brook/Watchung boundary, southwest to an existing interceptor line along the Green Brook, in vicinity of Rock Avenue. This line was constructed in the late 1970's, and also included the elimination of two pump stations located in vicinity of Greenbrook Road (near West End Avenue) and Taft Avenue (near Harding Avenue). The Greenbrook Road pumping station was later reinstalled, and operates only when conditions warrant (severe weather conditions). Other than the need for emergency sanitary sewer line repair or reconstruction, or the extension/resizing of certain sewer lines to serve new development or redevelopment, no other improvements have been made to the system. As such, the sanitary sewer system serving the Borough has largely remained unchanged since the 1970's.

The sanitary sewer system has adequate capacity under ‘dry’ conditions to meet the present and future needs of North Plainfield, as well as for the entire PARSA system. However, as particularly noted in the 1974 Master Plan, infiltration during severe weather conditions continues to negatively impact the system, thus affecting the life of the system and resulting in wasteful use of sanitary sewer infrastructure. Under dry conditions, the overall system has a peak capacity of roughly 2.5 times the existing normal demand. The following Exhibit presents average annual daily flow data for the Borough of North Plainfield from 2009 to 2011. As shown, the annual average daily flows were consistent over the three year period, while minimum and maximum daily flow rates fluctuate greatly due to major weather events.

Exhibit 29

**Average Annual Daily Flow Data (mgd)
North Plainfield, New Jersey
2009 - 2011**

	<u>Minimum Daily Flow</u>	<u>Maximum Daily Flow</u>	<u>Average Annual Daily Flow</u>
2009	2.014	4.022	2.517
2010	1.475	8.340	2.384
2011	1.295	7.558	2.730

To reduce negative impacts associated with infiltration and sanitary sewer overflow, it is recommended that PARSA and the Borough continue to seek ways to rebuild appropriate portions of the sanitary sewer system. Such improvements would serve to extend the life of the overall system and reduce operating costs.

In 2011, the New Jersey Department of Environmental Protection (NJDEP) conducted a Compliance Evaluation and Assistance Inspection of the North Plainfield sanitary collection system. This inspection detailed various deficiencies of the Borough’s sanitary system and operations, and specified remedial measures to be taken by the Borough. Most notably, NJDEP recommended the need for up-to-date mapping of the system to ensure adequate routine maintenance of the system and to expedite the response to sanitary sewer overflows resulting from severe weather conditions or breakdowns in the system.

Additional violations cited by NJDEP included the need for adequate staffing by the Borough for system maintenance, and the implementation of an Operations and Maintenance Plan in accordance with NJDEP requirements. In response to the Notice Of Violation issued by NJDEP, the Borough contracted with a private engineering consultant to address the issues identified by the state, including the need to update the mapping of the Borough’s sewer

system. All violation issues raised by NJDEP have been addressed, including efforts to commence with survey and remapping the Borough's sanitary sewer system.

Storm Water Drainage & Management

Storm water drainage and the management of surface water runoff into surface water areas (rivers, streams, lakes, etc.) and into ground water aquifers is an integral aspect of urban design and the development review process. Aside from the need to control the quantity of surface water runoff during peak weather events (i.e. 25-year, 100-year storms, etc.), thereby reducing adverse flooding conditions, water quality control is also essential to maintaining the integrity of the ground water supply, including the protection of environmentally sensitive wetlands and areas within the watershed.

The Borough of North Plainfield is located within the Green Brook Sub-Basin, which is located within the Raritan River Basin. Surface water drainage is typically handled by surface drainage infrastructure and natural features (impervious surface inlets and pipes; culverts and bridges; streams and drainage swales; stormwater detention and retention basins; etc.), which serve to channel water runoff through an integrated collection system and eventually to local or regional surface water areas. While this has the benefit of controlling and reducing adverse flooding conditions and minimizing damage to life, property, transportation systems, land use activities, and environmentally sensitive landscape, it can have an adverse water quality impact upon the local ecosystem in terms of surface water runoff pollution and degradation to the surface water and ground water supply.

To alleviate these adverse water quality impacts, while still controlling runoff and reducing flooding, the Borough adopted a Stormwater Management Plan in December, 2006. This plan addresses the various measures undertaken by the Borough to minimize the adverse impact of stormwater runoff on water quality and water quantity, and to promote ground water recharge. The Plan was prepared in accordance with the Municipal Stormwater Regulations (NJAC 7:14A-25) and the Stormwater Management Rules (NJAC 7:8). Measures undertaken by the Borough to implement the Stormwater Management Plan included the recommendation to adopt a new Stormwater Control Ordinance, and the adoption of an updated Well Head Protection Ordinance.

The Stormwater Management Plan provides a comprehensive review and analysis of stormwater control and water quality issues in the Borough, and establishes numerous goals to improve stormwater runoff conditions. These goals include: the reduction of flooding and associated damage; minimizing any increase in runoff from new development; reduction of soil erosion and the reduction/elimination of non-point pollution; maintaining the integrity of stream channels for their biological functions; and assuring the adequacy of in-stream structures, including culverts and bridges.

Should a developer seek a variance or an exemption from the Borough's Stormwater Management Plan or the State's Stormwater Management Rules with respect to a particular proposed development, the Borough's Stormwater Management Plan specifies several "mitigation projects" within the same drainage area, or Hydrologic Unit (HUC-14), to alleviate adverse flooding conditions in the Borough. The various projects specified in the Plan include grading and/or drainage improvements, or the study of drainage conditions as warranted. Mitigation measures of equal value may be performed outside the affected drainage area (HUC-14) if a suitable site within the affected drainage area cannot be located. A final option for developers seeking exemption from the Regulations includes the creation of a new mitigation plan or provision of a cash contribution to North Plainfield for use on another drainage improvement project in the Borough.

There are three natural water courses in the Borough, including Green Brook, Stony Brook, and Crab Brook. The Green Brook extends along the southerly municipal boundary adjacent to the City of Plainfield. Stony Brook is a tributary of the Green Brook, extending northeast from the Green Brook into the central area of the Borough. Crab Brook extends from the Stony Brook in an easterly direction, and runs along the southerly side of Route US 22.

Due to extreme flooding conditions experienced in the Green Brook Drainage Basin, in 1997 the U.S. Army Corp of Engineers recommended various measures to be undertaken to mitigate adverse flooding conditions in the Green Brook Sub-Basin. In North Plainfield, recommended measures included channel modifications along portions of the Green Brook, and the provision of levees with limited floodwall sections along the northerly bank of the Green Brook in the vicinity of Rock Avenue and Clinton Avenue. To date, these measures have not been implemented.

Drainage improvements to Crab Brook are also proposed by the New Jersey Department of Transportation along the south side of Route U.S. 22 to alleviate flooding conditions between Watchung Avenue and the easterly municipal boundary. Proposed DOT improvements include the deepening and widening the Crab Brook channel between North Drive and Dupont Street. In addition, Crab Brook will be cleaned downstream of Dupont Street. Infrastructure improvements proposed by NJDOT include additional inlets and larger culverts across Route U.S. 22 at several locations to accommodate drainage to Crab Brook from the north side of the highway. Drainage improvements completed along Crab Brook by NJDOT include a new culvert at North Drive.

As part of the Somerset County Capital Improvement Program, reconstruction of the Crab Brook culvert structure at Watchung Avenue was recently completed. The county plans to perform drainage improvements along Crab Brook and reconstruct the culvert structure at Somerset Street in 2014.

Surface Water Infrastructure (Bridges and Culverts)

Numerous culverts and bridges are located in the Borough, including seventeen (17) road crossings over the Green Brook from the City of Plainfield, and several other road crossings over Stony Brook and Crab Brook. Eight bridges located along the northeasterly portion of the Green Brook are under the jurisdiction of Union County.

Along the Green Brook, thirteen bridges are nearly new, or have been replaced or have been upgraded by Somerset County or Union County in recent years. Four bridges are relatively old and may be in need of repair or replacement, including one stream crossing (Geraud Avenue) which is closed to vehicular traffic (partial pedestrian access only). The Geraud Avenue bridge is listed for replacement in the near future in the Somerset County 2010 – 2016 Capital Improvement Program for Road and Bridges. The existing bridges at Grove Street, Watchung Avenue and Netherwood Avenue appear to be in fair condition. The Borough should request the respective County Engineer's Office (Somerset or Union) to evaluate these structures for renovations or replacement, as necessary.

PARKS, RECREATION & OPEN SPACE

The provision of recreational opportunity for Borough residents, particularly school-aged children, continues to be an important element of the many community services offered by North Plainfield. As one of the most densely populated and developed communities in Somerset County, the need for both passive and active recreation space remains a unique challenge for the Borough.

The 2010 North Plainfield Master Plan Reexamination Report recommended the formulation of a Recreation, Open Space and Environmental Protection Plan element in the Borough's updated Master Plan. This recommendation concerned the adequate provision of recreational facilities to Borough residents and school-aged children, including passive and active recreational opportunity. To protect existing stream corridors and flood-prone areas in the Borough, the preservation of environmentally sensitive lands, particularly along the Green Brook, was also emphasized in the Reexamination Report.

At the time of the preparation of the Borough's 1974 Master Plan, the only park/recreation areas in the community included Green Acres land (Currently known as Green Acres Park) and Union County-owned lands located adjacent to the Green Brook (Green Brook Park). To address the need for added recreational space in the Borough, the 1974 Master Plan recommended the acquisition of several sites throughout the community to increase park land and recreational space. These included: acquisition and provision of additional park land/recreational space at the northwest corner of Clinton Avenue and Green Brook Road (Vermeule Mansion property); acquisition of three individual sites located on Columbia Avenue, Westervelt Avenue, and North Jackson Avenue; and, expansion of existing parkland

adjacent to Green Acres Park and Green Brook Park, respectively. With the exception of minor expansion to the Green Acres Park facility and the creation of the Vermeule Park facility, no additional recreational parks or areas have been created since 1974.

Exhibit 30 provides an inventory of existing parks and recreational area in North Plainfield, including existing recreational facilities provided at each location. As shown, the Borough presently has 83.76 acres of land available for passive or active recreational use, as follows: Vermeule Park (2.50 acres); Green Acres Park (59.97 acres); Stony Brook Field (4.49 acres – including land own by the Board of Education); and, Borough-owned recreational land located along the Green Brook, (16.80 acres – leased by the Union County Parks Commission). In addition to this recreational land, the North Plainfield Board of Education maintains recreation area at the various public school properties shown on Exhibit 30, which are available for use by the North Plainfield Recreation Department. In total, approximately 101 acres of recreational land are provided in North Plainfield.

Vermeule Park is located in the western portion of the Borough, near the Vermeule Community Center. The facility was purchased and developed for recreational use by the Borough as recommended in the 1974 Master Plan. The park consists of a small grass area for limited recreational activities; tot-lot/playground area; and, a shaded (pavilion) picnic shelter. In addition, the park includes the Vermeule Family Cemetery, which dates back to the original settlement in the area by the Vermeule family in the 18th century.

Green Acres Park is located in the central portion of the Borough, between West End Avenue and Rockview Terrace. This park was further improved for recreational use by North Plainfield as recommended in the 1974 Master Plan, and includes a playground area; tot-lot; two lighted, outdoor basketball courts; walking trail; barbeque areas and picnic tables; small fishing pond; pavilion; and, a small recreational field. The majority of Green Acres Park is undeveloped, comprising wooded flood plain area.

Stony Brook Field is partially owned by the Board of Education (a.k.a. Fromm Field). This recreational area is located south of Green Brook Road and west of Grove Street, consisting of a baseball/softball field and a recreational field (field hockey).

Green Brook Park is a Union County recreational facility located along both sides of the Green Brook in the City of Plainfield (Union County) and the Borough of North Plainfield. Two parcels of land within Green Brook Park in North Plainfield are owned by the Union County Park Commission, and a third parcel is owned by the Borough of North Plainfield. The Borough-owned parcel (Block 170.02, Lot 15) is leased for recreational use by Union County, and is 16.80 acres in area. This Borough-owned parcel is partially improved with a small parking area, one baseball field, and a soccer field. The remaining Union County-owned land (Block 147, Lot 1 & Block 171, Lot 1) includes 32.38 acres of land and is currently undeveloped. The lease agreement with North Plainfield for the use of Block 170.02, Lot 15 by the Union County Park Commission will end in approximately ten years.

The parks and recreational areas in the Borough are in relatively good condition. A safety inspection of all parkland was recently conducted by the Borough, and all facilities were found to be, or were brought up to acceptable standards. The outdoor basketball courts at Green Acres Park are currently in poor condition and require repaving and renovations to the court facilities.

As shown on Exhibit 30, the Borough's public schools also provide outdoor recreational space utilized by the school district and available for use by the Borough's various year-round recreational programs. At West End School and East End School, recreational facilities include a tot-lot/playground area; baseball fields, tennis courts (East End School); and a gymnasium. Recreational facilities at Stony Brook School include a tot-lot and recreational field, and a gymnasium. Somerset Intermediate School has an outdoor recreational courtyard and gymnasium only.

At the Middle/High School, recreational facilities at Lower Krausche Field include an outdoor athletic track and interior grass-turf field, and two gymnasiums. Upper Krausche Field, which also serves the Middle/High School athletic program was recently renovated and improved. This public school recreational facility contains one baseball/softball field, one official-sized baseball field and a football field with stadium risers. The fields at Upper Krausche Field are lighted for night time use and provided with artificial turf surfaces. The athletic track and inner recreational grass-turf field (Lower Krausche Field) are in poor condition and should be renovated. Ideally, this facility should be upgraded with artificial turf surfaces.

The Recreational Department offers a variety of programs for school-aged children and adults which are operated by the Borough and conducted at the various above noted Borough-owned recreational facilities and at the public school locations, as well. Children's programs include T-ball, softball, baseball, basketball, soccer, travel soccer, archery, and wrestling. Adult programs include archery, badminton, men's softball, and co-ed softball. Various summer full-day and half-day camp programs are offered to school-aged children, grades K-8. These summer programs offer field trips and numerous age-appropriate indoor/outdoor recreational activities. The year-round staff for the Recreation Department includes approximately 20 persons, including the Department Director; Assistant Director; one coordinator for each recreation program; and, one supervisor for each league within each program.

Major events offered by the Department include an annual fishing derby, held at Green Acres Park; holiday observances; community movie nights; track and field meets; and, outings to area entertainment venues and professional sporting events. In-town events require close involvement with Borough officials and Police Department, which provides public safety and security, as needed.

Exhibit 30
Existing Recreational Facilities
 Borough of North Plainfield
 August, 2012

<u>LOCATION / FACILITY</u>	<u>AREA (Acres)¹</u>	<u>AMENITIES</u>
BOROUGH OF NORTH PLAINFIELD:		
- Green Acres Park	59.97	2 Basketball Courts / Paved Recreation Area Playground Area / Tot-Lot (Play Structure) Water Pond / Walking Trail / Benches Picnic Areas and Tables / Barbeque Areas
- Vermuele Park	2.50	Tot-Lot / Playground and Play House Pavillion Picnic Area and Tables Bicycle rack
- Stony Brook Field / Fromm Field ²	4.49	1 Baseball/Softball Field (Youth) w/ Paired Riser 1 Field Hockey Field
- Greenbrook Park (Union County Facility)	16.80	One Baseball Field (Youth) Recreation Fields (Soccer)
NORTH PLAINFIELD BOARD OF EDUCATION:		
- East End School	±3.50	Tot-Lot / Playground Four Tennis Courts (fenced) Two Baseball Fields (Youth) Picnic Tables Bicycle Racks Gymnasium
- West End School	±4.00	Tot-Lot / Playground One Baseball Field (Youth) Two Ball Fields (<i>unimproved</i>) Recreation Fields (Soccer) with Risers Gymnasium
- Stony Brook School	±1.00	Tot-Lot / Playground Recreational Field Gymnasium
- Somerset School	±0.20	Fenced Courtyard Gymnasium
- High School / Middle School (Lower Krausche Field)	±3.50	Athletic Track and Recreational Field Two Gymnasiums
- Upper Krausche Field (High School)	5.00	One Turf Baseball Field (Official) One Turf Baseball/Softball Field (Youth) One Turf Football/Soccer Field
	<hr/> ±101 Acres	

¹Land Area for North Plainfield Board of Education recreational facilities reflects estimated outdoor recreational area.

²Fromm Field owned by North Plainfield Board of Education (3.5 acres).

The Recreation Department has prepared a 'policy procedure manual' to provide a procedural blueprint for the various department programs and activities. The manual sets forth a mission statement for the Recreation Department; incorporates procedures and guidelines to protect the safety of the participants of all programs, including first-aid procedures and program staff requirements; and, establishes a code of conduct for all program staff, participants and observers.

Exhibit 31 provides recommended standards for the provision of recreational facilities and recreational land/open space. The standards are established by the National Recreation and Park Association to provide a guide in the provision of recreational opportunity, depending the specific needs and desires of a given community. The recommended open space and recreational land criteria standards shown were established by the state as part of the adopted 2008 – 2012 NJ Statewide Comprehensive Outdoor Recreation Plan. As shown on the Exhibit, based upon existing/projected population, the Borough is lacking in the provision of official-sized baseball fields, tennis courts, a community pool, and an amphitheatre. Recreational facilities which meet or exceed the guidelines include softball/baseball fields; basketball courts; volleyball courts; football field(s); soccer fields; and, field hockey fields.

With respect to the provision of recreational park land and open space, the NJ Statewide Comprehensive Outdoor Recreation Plan recommends that the Borough and County provide three (3) percent and seven (7) percent of the total land area in the form of active and/or passive recreational area and open space, respectively. Based upon these standards, collectively the Borough should have a total of 132 acres of recreational land open space. As shown on Exhibit 31, including Borough and public school-owned recreational land, North Plainfield has a surplus of 61 acres of land, while Somerset County has a net shortfall of the required 92 acres (not including land located in North Plainfield owned by Union County).

It is important to note that compliance with the recommended guidelines is based upon the continued use of Borough-owned and public-school owned recreational facilities and space. It is therefore imperative that these two public entities continue their long-standing joint effort in providing adequate recreational facilities and space to the Boroughs residents and particularly, all school-aged children.

The development of artificial turf fields at appropriate locations would also complement recreational programs. Artificial turf recreational fields would save maintenance costs for the Borough over time, and could also be made available to local area recreational programs for a fee, thereby generating revenue to offset the cost of recreational programs for Borough residents, and to supplement funding for capital improvements for recreational facilities.

Exhibit 31
Recreation and Open Space Standards

<u>Recreational Facility</u>	<u>Recommended Standard^a</u>	<u>Required No. of Facilities</u>	<u>Existing No. of Facilities Provided</u>	<u>No. of Facilities Required to Meet Standard</u>
Baseball Fields (Official Sized)	1 per 5,000	4	1	3
Softball/Youth Baseball Fields	1 per 5,000	4	6	--
Basketball Courts	1 per 5,000	4	8 ¹	--
Tennis Courts	1 per 2,000	11	4	7
Community Swimming Pools	1 per 20,000	1	0	1
Recreational Community Center	1 per 25,000	1	0	1
Amphitheater	1 per 20,000	1	0	1
Volleyball Courts	1 per 5,000	4	6 ¹	--
Football Fields	1 per 20,000	1	1	--
Soccer Fields	1 per 10,000	2	3	--
Field Hockey Fields	1 per 20,000	1	1	--

Recommended Open Space & Recreational Land Standard^b

	<u>Standard</u>	<u>Requirement</u>	<u>Provided</u>	<u>Needed</u>
- Municipal (<i>Borough of North Plainfield</i>):	3% ²	40 Acres	+101 Acres ³	(+61 Acres)
- County (<i>Somerset County</i>):	7% ²	92 Acres	0 Acres	92 Acres
	10%	132 Acres	+101 Acres ³	31 Acres

^aSource: National Recreation and Park Association, Recreation, Park and Open Space Standards and Guidelines.

^bSource: 2008 - 2012 NJ Statewide Comprehensive Outdoor Recreation Plan.

¹Includes indoor recreational facilities in Borough public schools.

²Percentage of Borough Developed and Developable Land Area (+1,313 Acres)

³Includes Green Brook Park and estimated recreational area on public school property.

STATE LAND USE PLAN & SURROUNDING LAND USE ZONING

The Borough of North Plainfield is located in the eastern most portion of Somerset County, directly adjacent to the western boundary of Union County. Municipalities which are located directly adjacent to the borough include Watchung Borough and Green Brook Township, each located in Somerset County, and the City of Plainfield, located in Union County. Plate 15 illustrates municipal zoning for the communities surrounding North Plainfield.

New Jersey State Development and Redevelopment Plan (State Strategic Plan)

In 2001, the New Jersey Planning Commission prepared the State Development and Redevelopment Plan (SDRP), which established specific 'Planning Areas' to guide development and redevelopment throughout the state. These Planning Areas are identified in the 2001 State Plan Policy Map, which have been revised to date, through a state-wide 'cross-acceptance' process at the municipal and county level. In November, 2011, the Planning Commission released a revision to the SDRP, entitled the "State Strategic Plan", which sets forth a vision for the future of New Jersey and strategies to implement the SDRP. Utilizing the criteria set forth in the Plan, the State Strategic Plan seeks to identify "Priority Growth Investment Areas" for targeted growth. The goals of the Strategic Plan are as follows:

- **Targeted Economic Growth** – Enhance opportunities for attraction and growth of industries of statewide and regional importance;
- **Effective Planning for Vibrant Regions** – Guide and inform regional planning so that each region of the State can experience appropriate growth according to desires and assets of that region;
- **Preservation and Enhancement of Critical State Resources** – Ensure that strategies for growth include preservation of the State's critical natural, agricultural, scenic, recreation, and historic resources, recognizing the role they play in sustaining and improving the quality of life for New Jersey residents and attracting economic growth; and,
- **Tactical Alignment of Government** – Enable effective resource allocation, coordination, cooperation and communication among those who play a role in meeting the mission of this Plan.

The State Plan Policy Map, revised through October 17, 2013, identifies North Plainfield as a Town Center (DT - "Designated Town"), located within a "Metropolitan Planning Area". Metropolitan Planning Areas typically comprise older suburban and urban areas, and are intended to provide for most of the State's redevelopment through: revitalization of cities and

towns; promotion of compact development; stabilization of older suburbs; redesign areas of sprawl; and, protection of the character of existing stable communities.

With respect to the surrounding communities, the State Plan Policy Map designates the City of Plainfield, Scotch Plains Township, and Fanwood Borough within the Metropolitan Planning Area, along with the portion of Green Brook Township west of Rock Avenue, including lands along and south of the Route 22 corridor. The balance of Green Brook Township and all of Warren Township and Watchung Borough are identified as “Suburban Planning Area”. Suburban Planning Areas are intended to provide for most of the State’s new development, while protecting natural resources and protecting the character of existing communities.

Green Brook Township, Somerset County

Green Brook Township is located directly adjacent to North Plainfield along Rock Avenue and along the Borough’s northwesterly municipal boundary. The Township is a suburban community with a population of 7,203 persons, according to the 2010 Census, with a population density is 1,637 persons/square mile. Along the municipal boundary with North Plainfield, the Green Brook Township Land Use Plan and Zoning Plan generally reflect existing land use patterns, with a combination of low and medium density residential zoning and commercial zoning along Route U.S. 22, and along County Route 531.

As shown on Plate 15, zoning in Green Brook Township along Rock Avenue includes: Medium Density single family residential (MD: 15,000 SF lot area); Public Recreational (PR); and, Regional Highway Commercial (RHC: 40,000 SF lot area). These zones reflect existing development conditions in the area, including environmentally sensitive lands along the Green Brook drainage corridor. Along the borough’s northwesterly boundary, zoning in Green Brook Township reflects a variety of land use including: Special Mountain District (SMD: 40,500 SF lot area); Industrial (I: one acre lot area); Affordable Housing District (AHD: up to 6 units/acre); Mountain Preservation (MP); and, Public Recreation (PR). These zones reflect existing development in the area and allow for the preservation of environmentally sensitive steeply sloping terrain along the First Watchung Mountain Range.

A review of the above noted zoning and land use patterns in Green Brook Township in vicinity of the western and northwestern portions of North Plainfield indicates that the Borough’s existing zoning and land use patterns in North Plainfield are compatible with Green Brook Township.

Watchung Borough, Somerset County

As shown on Plate 15, Watchung Borough is located adjacent to the northerly municipal boundary of North Plainfield. Land use zoning in this vicinity of Watchung Borough includes several residential and commercial zoning categories, which generally reflect existing land use

patterns. Watchung Borough is a suburban community with a resident population 5,801 persons in 2010, and a population density of 951 persons/square mile.

Along the municipal boundary west of County Route 531 (Watchung Avenue), land use zoning in Watchung Borough includes: Neighborhood Business (B-A: 10,000 SF lot area); Single Family Residential (R-B: 15,000 SF lot area); Rural Residential (R-R: 60,000 SF lot area); Multi-Family Affordable Housing (R-M-LI: 14 units/acre); Highway Development (H-D: min. 100, 000 SF lot area); and, Highway Commercial (B-C: 30,000 SF lot area). All of the residential and commercial zones reflect existing land use patterns along the municipal boundary, including the existing Watchung Square Mall, located along the westbound side of Route U.S. 22.

While adjacent zoning in Watchung Borough is generally consistent with development patterns and zoning in North Plainfield, the H-D, Highway Development Zone and B-C, Highway Commercial Zone in Watchung Borough (located along the westbound side of Route 22 in vicinity of Mountain Avenue and Gray Street) are located across from existing single family residential development in North Plainfield (vicinity of Mountain Avenue). Adverse impacts from commercial land use activities in this area are mitigated by undeveloped wooded land owned by NJDOT along both sides of Route 22 in this area.

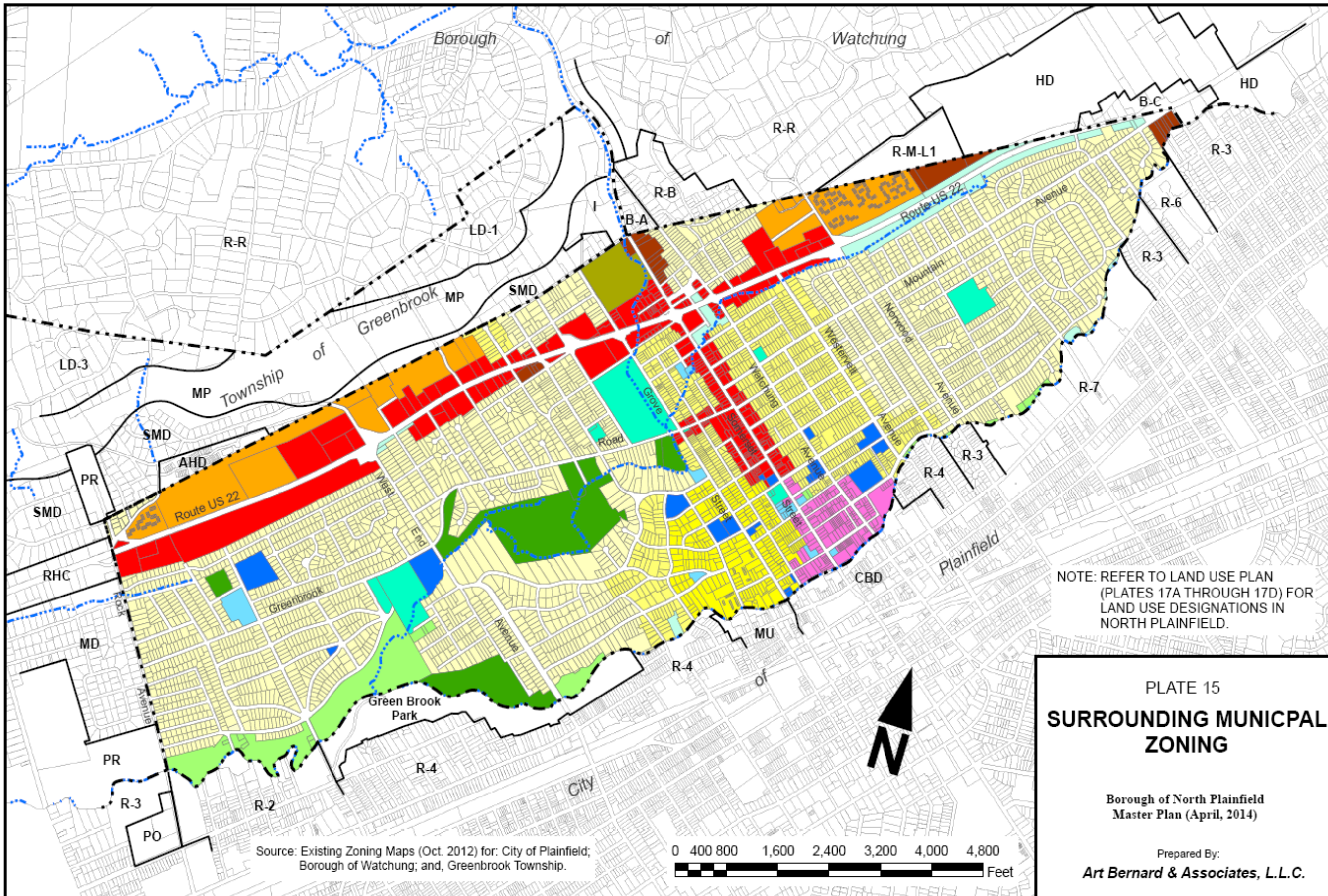
City of Plainfield, Union County

The City of Plainfield is a densely developed urban municipality located adjacent to the southeasterly municipal boundary of North Plainfield along the Green Brook. Plainfield has a population of 49,808 persons (2010 Census), and a population density of 8,442 persons/square mile. Along the municipal boundary with North Plainfield, land use development comprises a variety of residential and commercial land use activity, and is nearly entirely developed. Although North Plainfield and Plainfield are somewhat ‘interconnected’ in terms of historical development patterns and social-economic conditions, the Green Brook provides a distinct boundary between the two municipalities. The land use patterns and zoning discussed below for the City of Plainfield are generally compatible to zoning and land uses in North Plainfield.

As shown on Plate 15, land use development and zoning along the municipal boundary in Plainfield includes several residential zones of varying densities, and two commercial zones, located in vicinity of the Plainfield ‘downtown’ area. Residential zones include: Low Density Residential (R-2: 2 units/acre); Low/Moderate Density Residential (R-3: 3.5 units/acre); Moderate Density Residential (R-4: max. 8.7 units per acre); Medium/High Density Residential (R-6: max. 12 units/acre); and, High Density Residential (R-7: max. 18 units/acre). While the R-2 and R-3 zones permit single family dwellings only, the R-4 zone permits single-family and two-family dwellings. The R-6 and R-7 zones permit a variety of dwelling types including single-family, two-family, apartments and townhouses. Minimum lot areas and/or maximum permitted density vary for the R-6 and R-7 zones, depending upon type of dwelling.

In the downtown area of the City of Plainfield, two commercial zones include the Central Business District (CBD: 5,000 SF lot area), and the Mixed Use zone (MU: min. 5,000 SF lot area). The CBD zone permits a variety of retail and commercial land use activities, which typically serve the local community, including mixed-use development. As shown on Plate 15, this zone designation compliments the B-1 Business Zone area located in North Plainfield. Further west of the CBD zone, the MU zone in Plainfield permits a variety of commercial/ retail uses, mixed uses, apartments and townhouse development.

The Union County Green Brook Park facility (vicinity of Central Avenue/Clinton Avenue and West End Avenue) is designated in the Zoning Ordinance as “Historic Park, GB”. This reflects the existing environmentally sensitive nature of the parcels along the Green Brook, and an effort to have the park facility designated as an historic place. The Plainfield Zoning Ordinance does not specify any yard or area requirements for the Green Brook Park facility, and only permits the development of parks, open space and trails, community gardens, recreational areas, and storm water retention.



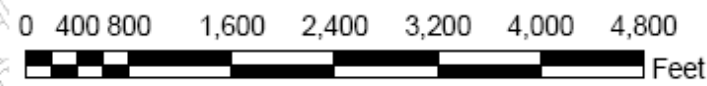
NOTE: REFER TO LAND USE PLAN (PLATES 17A THROUGH 17D) FOR LAND USE DESIGNATIONS IN NORTH PLAINFIELD.

PLATE 15
SURROUNDING MUNICIPAL ZONING

Borough of North Plainfield
Master Plan (April, 2014)

Prepared By:
Art Bernard & Associates, L.L.C.

Source: Existing Zoning Maps (Oct. 2012) for: City of Plainfield; Borough of Watchung; and, Greenbrook Township.



Master Plan Proposals

**Borough of North Plainfield,
Somerset County, New Jersey**

GOALS & OBJECTIVES

In the past, North Plainfield has endeavored to meet residential and commercial needs of the community and local area residents. These ongoing efforts are reflected in the stated goals and objectives of previously adopted Master Plans and/or Master Plan Reexaminations, as presented in the Introduction to this Master Plan update. To meet the current and future needs of all Borough residents and the local business community, this Master Plan update provides a comprehensive planning approach to meet these continuing challenges, while addressing new planning initiatives and conditions revealed during the Basic Studies update.

The individual plan elements of the North Plainfield Master Plan update have been formulated based upon the Basic Studies update, which provided a comprehensive review of existing development conditions in the Borough and an evaluation of existing public facilities and services. This assessment of current conditions in North Plainfield also included a review of previous Master Plan goals and objectives established for the Borough, including past Master Plan proposals and initiatives. Each component of the Borough Master Plan was evaluated to determine the extent to which past goals and objectives, including regional and State planning initiatives, have been effectuated.

Based upon the evaluation of the current conditions in North Plainfield, and with an eye toward the future, the following goals and objectives form the basis upon which North Plainfield seeks to address continuing concerns facing the Borough, in terms of land development, circulation and transportation, community facilities and services, recreation and open space conservation, and, utilities and infrastructure:

LAND USE:

- Promote a balanced variety of residential, commercial, recreational, public and conservation uses and all other land uses;
- Develop senior housing at appropriate locations to meet the needs of the Borough population;
- Relate the density of housing development to the carrying capacity of the land, roads and utility infrastructure capabilities;
- Maintain a proper balance between land uses so that the Borough's population is adequately served by a sound employment base and sufficient services;
- Protect residential neighborhoods from commercial, industrial, office and other non-residential encroachments;
- Continue to meet the Borough's affordable housing needs. Encourage adequate affordable housing opportunities, especially for young families and senior citizens;
- Encourage mixed-use development where appropriate, such as residential uses within selected commercial/retail zones;

- Ensure that new development on vacant or underutilized land is in keeping with existing neighborhood character;
- Encourage the revitalization of the downtown area of the Borough through partnerships between the public and private sectors, including rehabilitation of older structures and infrastructure; redevelopment of specific parcels; enhanced streetscape improvements in the downtown business area; expansion of public areas for congregation; expansion of parking areas; and, improving site distances and cross-walks for pedestrians.
- Encourage the redevelopment of brownfield sites in the Borough;
- Encourage the following land use concepts: adaptive reuse of buildings and infrastructure; protection of environmentally sensitive areas; promotion of alternate modal transportation through mixed-use development and interdependent land use relationships; and, encouragement of local services and goods establishments, and community gardens to meet the needs of local residents and local businesses;
- Encourage mixed-use development in the downtown business area to promote local businesses; and,
- Create an 'attractive' downtown environment through the implementation of streetscape improvements to enhance pedestrian safety and to provide additional public gathering (civic) space.

CIRCULATION & TRANSPORTATION:

- Provide for efficient and safe traffic circulation in the Borough. This should be achieved while the aesthetic quality is maintained, especially along residential streets;
- Optimize alternative modal choices within the Borough, in particular to enhance access to buses, jitneys, taxis, walking and bicycles, etc.;
- Establish 'linked' bikeway paths in the Borough to promote safe access to existing and proposed active and passive recreational areas, public schools, community facilities and the downtown business area;
- Promote traffic safety and pedestrian safety in the downtown area and throughout the Borough's residential neighborhoods through a comprehensive program to upgrade, modify and/or enhance existing traffic controls and intersection geometry at key locations, particularly on residential thoroughfares providing access to the downtown area;
- Provide for improved traffic flow and safety along Route US 22 by encouraging new development or redevelopment of commercial properties along the highway be designed in accordance with the access design criteria of the New Jersey Highway Access Management code; and,
- Promote pedestrian safety for school-aged children through the improvement and maintenance of existing pedestrian sidewalk areas and crosswalks providing access to public schools and residential neighborhoods, including appropriate traffic control and signage to enhance motorist awareness.

COMMUNITY FACILITIES & SERVICES:

- Provide adequate community facilities and services in order to maintain the quality of life for existing and future Borough residents;
- Encourage resource recovery and the recycling of recyclable materials;
- Provide adequate public facilities for the Borough's population, including schools, parks, libraries, recreation/open space, fire, police, and solid waste disposal; and,
- Ensure that all Borough-owned facilities meet the needs of all persons, particularly handicap persons, through the provision of adequate, safe access to all public facilities and services.

PARKS, RECREATION & OPEN SPACE CONSERVATION:

- Promote the preservation of natural systems and environmentally sensitive areas, particularly wetlands and flood hazard areas;
- Preserve and enhance existing stream corridors and tributaries by providing linkages among parks where possible;
- Preserve open space and protect natural, cultural and historic resources;
- Provide a systematic plan for the acquisition of brook front and upland parcels for additional open space and parkland;
- Develop passive recreational opportunity in the Borough through the improvement of borough-owned and (Union) county-owned land along the Green Brook, including the creation of a 'walking trail' along the Green Brook with linkage to Green Acres Park along the Stony Brook; and,
- Provide increased active and passive recreational opportunity for Borough residents and school-aged children through the continued partnership with the North Plainfield Board of Education, including the expansion of recreational space; enhancement of recreational facilities; and, continued upgrade and maintenance of support infrastructure.

UTILITIES:

- Continue to provide adequate infrastructure to meet the needs of the community, including continued maintenance and repairs of utilities and roadway infrastructure through the Borough's Capital Improvement Program, and investment to upgrade aging infrastructure and utilities to meet future demands; and,
- Protect lives and property from flood damage through storm water control and management.

LAND USE PLAN

The Land Use Plan for North Plainfield Borough is presented on Plates 17A through 17D. Each plate illustrates the proposed land uses for the Borough, including various residential designations, commercial and business areas, public facilities, parks and recreation, and open space/conservation areas. The Land Use Plan also addresses the need for rehabilitation and/or redevelopment of the central portion of North Plainfield, including the downtown business area (see Plate 16). A description of land use designations shown on the Plan will be provided in this section of the Master Plan update, including specific land use proposals and initiatives.

As a mature suburban community, the North Plainfield Land Use Plan largely reflects existing development patterns and residential densities, and existing zoning. A total of 22 land use designations are shown on the Plan, including nine residential categories; seven commercial/business categories; and, six additional categories, including public facilities, semi-public use, parks, and open space, etc. In addition to these *borough-wide* land use designations, the Land Use Plan sets forth the foundation for rehabilitation and/or redevelopment of older residential and non-residential property(s) in the central portion of North Plainfield, including revitalization of the downtown area along the Somerset Street corridor.

REHABILITATION & REDEVELOPMENT

In preparing the Master Plan, the Planning Board recognized the importance of the downtown area of North Plainfield, and its desire to facilitate improvements to the downtown area to make it a more vibrant destination. It is generally acknowledged that there is no major anchor or theme to the downtown to draw people to it. It is also apparent that the structures and the infrastructure within and surrounding downtown are aging and increasingly showing signs of wear.

The Local Redevelopment and Housing Law (“LRHL” *N.J.S.A. 40A:12A-1, et seq.*) provides a community with additional powers/tools to promote desirable community development activity. The Law empowers the Borough to designate “areas in need of redevelopment” and “areas in need of rehabilitation.” The greatest powers are associated with “an area in need of redevelopment” designation. In order to qualify as an area in need of redevelopment, the Planning Board must find that the area meets at least one of eight criteria related to the substandard condition of structures or underutilization of property. The designation of an area in need of redevelopment often carries with it the stigma of a “blighted area”. The designation also provides the municipality with sweeping powers, including the power of eminent domain.

North Plainfield has determined that it would like to promote the redevelopment of its downtown area without a “blight designation” and without using the power of eminent

domain. Accordingly, the Land Use Plan proposes to revitalize the downtown area and adjacent residential neighborhoods through the process set forth in the LRHL for the designation of an “area in need of rehabilitation. This process provides significant planning tools to the municipality without declaring an area(s) as “blighted” or underutilized, and without exercising the draconian power of eminent domain.

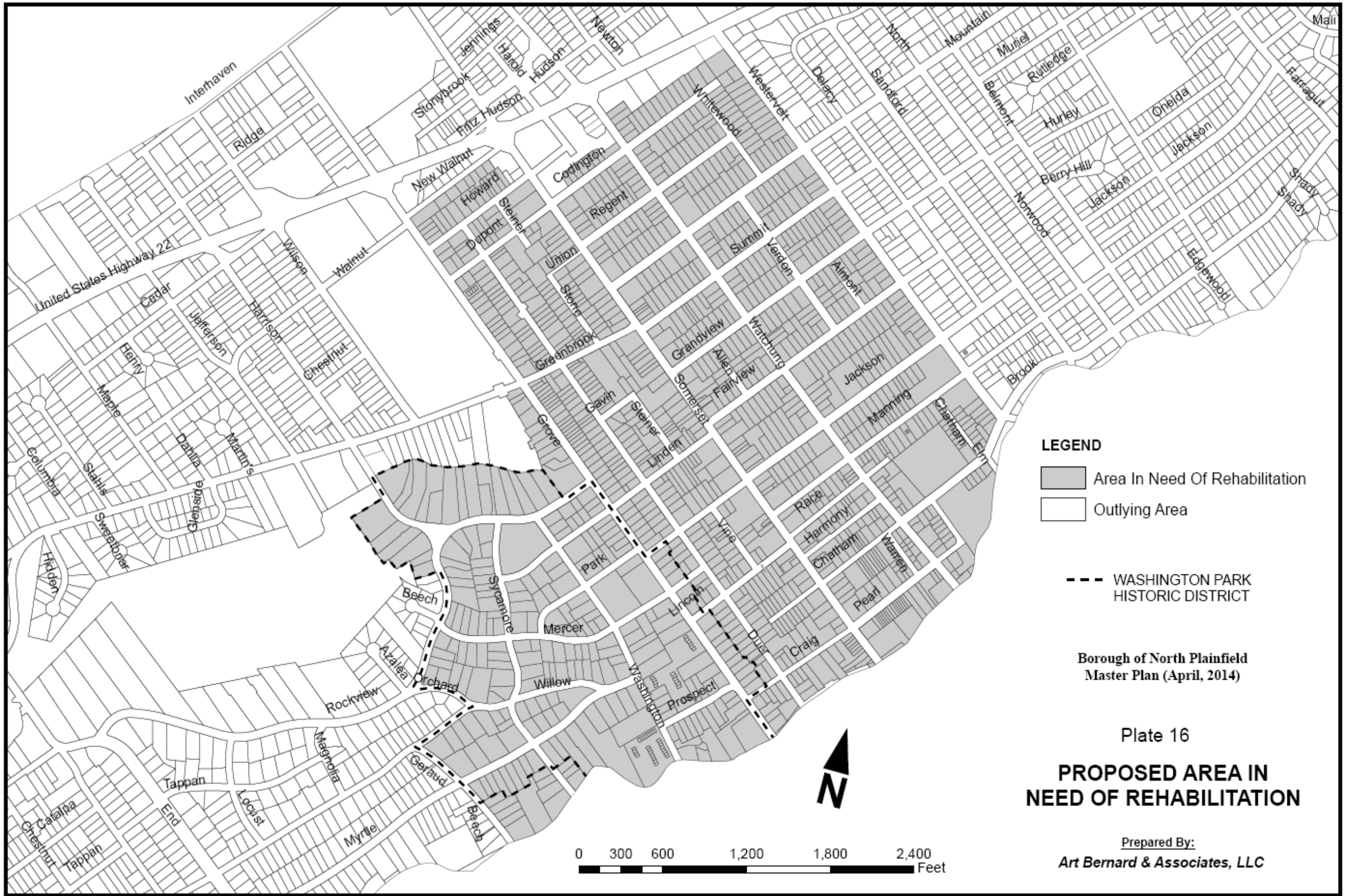
An area may qualify as an “area in need of rehabilitation” if the Governing Body determines, that: (1) a significant number of structures are in a deteriorated or substandard condition and there is a pattern of vacancies, abandonment or underutilization of properties in the area, with a persistent arrearage of property tax payments; or, (2) more than half the housing stock is more than 50 years old, or a majority of the water and sewer infrastructure is over 50 years old and is in need of repair or substantial rehabilitation; and, (3) a program of rehabilitation may be expected to prevent further deterioration and promote the overall development of the community. No formal study is required in order for the Governing Body to designate an area in need of rehabilitation, by formal Resolution.

The designation of an area in need of rehabilitation allows the municipality to conduct a rehabilitation program and provide five year tax abatements. Thus, the Borough may offer short-term tax abatements for property owners that improve their buildings and properties in the designated rehabilitation area. The municipality may also exercise other powers if it later completes a redevelopment plan for a specific parcel(s) within the area designated for rehabilitation. The adoption of a redevelopment plan allows the municipality to: issue bonds; purchase and clear land; enter into contracts; enter into agreements with redevelopers; and, lease or convey land without going out to public bid.

It should be emphasized that, even after the adoption of a redevelopment plan for a parcel(s) within the rehabilitation area, a municipality is not empowered to exercise the power of eminent domain. A municipality, wishing to utilize the eminent domain power must go through the process of designating property as an area in need of redevelopment in accordance with the criteria established in the Local Redevelopment and Housing Law. Thus, at the very least, the designation of an area in need of rehabilitation provides a municipality with an extra tool to provide incentives for the improvement of properties. It also allows a municipality to facilitate the private sector in redeveloping the area in a manner that promotes the Borough’s downtown area.

Based upon the desire to revitalize the downtown area of North Plainfield, including older, adjacent residential structures and neighborhoods, it is recommended that North Plainfield designate the central portion of the Borough as an “area in need of rehabilitation.” Plate 16 illustrates the Proposed Area In Need Of Rehabilitation for North Plainfield in accordance with the New Jersey Local Redevelopment and Housing Law (N.J.S.A. 40A: 12A-1, et Seq).

As shown on Plate 16, the area proposed for rehabilitation encompasses the central portion of the Borough, including the Somerset Street business corridor, downtown area, and adjacent



LEGEND

Area In Need Of Rehabilitation
 Outlying Area

--- WASHINGTON PARK HISTORIC DISTRICT

Borough of North Plainfield
Master Plan (April, 2014)

Plate 16
**PROPOSED AREA IN
NEED OF REHABILITATION**

Prepared By:
Art Bernard & Associates, LLC

0 300 600 1,200 1,800 2,400 Feet

older residential neighborhoods. The area exhibits a variety of commercial and residential structures and uses, including numerous mixed-use structures in the downtown area. In addition, and the Washington Park Historic District (west of Somerset Street) is also included in the proposed rehabilitation area.

The determination of the proposed area in need of rehabilitation is based upon an exterior field survey of existing residential and non-residential building conditions, and available census indicators for dwelling units (age of structure, overcrowding, etc.). This field investigation of the study area revealed a general decline in the physical appearance and maintenance of dwelling structures, and also revealed overuse of multi-family residences resulting from overcrowding and illegal boarding uses. Analysis of U.S. Census data (*2000 Census – latest available*) indicates that approximately eighty (80) percent of housing stock in the area is a minimum of 50 years old, including the Washington Park Historic District, which contains dwelling structures dating back to 1860's. Census data also indicate that approximately fifteen (15) percent of occupied housing is overcrowded (1.01 persons or more per room). In addition, the majority of public water and sewer infrastructure in the area is older than 50 years old.

The "old mill" property (Block 43, Lot 6) is a 2.5 acre parcel located adjacent to Green Brook, between Elm Place and Pearl Street. This parcel is presently developed with a two-story industrial building, and is currently occupied with several business uses. The grounds surrounding the building are in a state of disrepair, and the building structure is obsolete and underutilized. ***It is recommended that this parcel be redeveloped with multi-family residential use with an "affordable" housing component. Redevelopment of the parcel with multi-family use would facilitate rehabilitation efforts in the central portion of the Borough and would serve as a catalyst for revitalization of local businesses and commercial services in the downtown area.***

Upon determination of the area as an 'Area in Need of Rehabilitation' by the North Plainfield Governing Body, it is recommended that North Plainfield take the following measures in an effort to promote development within the central portion of the Borough and the overall community:

- ***Establish a Rehabilitation Program to repair and improve residential and non-residential structures and infrastructure in the designated Rehabilitation Area. It is recommended that the Rehabilitation Program include tax abatement and tax-exemption incentives, by municipal ordinance, for rehabilitation of individual private properties in accordance with the Five-Year Exemption and Abatement Law (NJSA 40A:21-1, et seq.). The Program should also include new construction and/or the expansion of existing buildings and structures in the rehabilitation area; and,***
- ***Investigate and determine the need for redevelopment of specific property(s) or combination of land parcels in accordance with the criteria established in the New Jersey State Redevelopment and Housing Law (N.J.S.A. 40A: 12A-1, et***

seq), including the 'old mill' site (Block 43, Lot 6), or other parcels within the downtown business area. Based upon such determination, formal Redevelopment Plans should be adopted by the Borough to facilitate new development in the Rehabilitation Area, which should include the provision of off-street parking, open space, positive pedestrian access, and 'gateway' streetscape improvements (lighting, street trees, surface treatments, landscaping, etc.).

LAND USE DESIGNATIONS

This portion of the Land Use Plan element will provide a discussion of the various land use designations *throughout* the Borough, which are illustrated on Plates 17A through 17D.

Residential Land Use

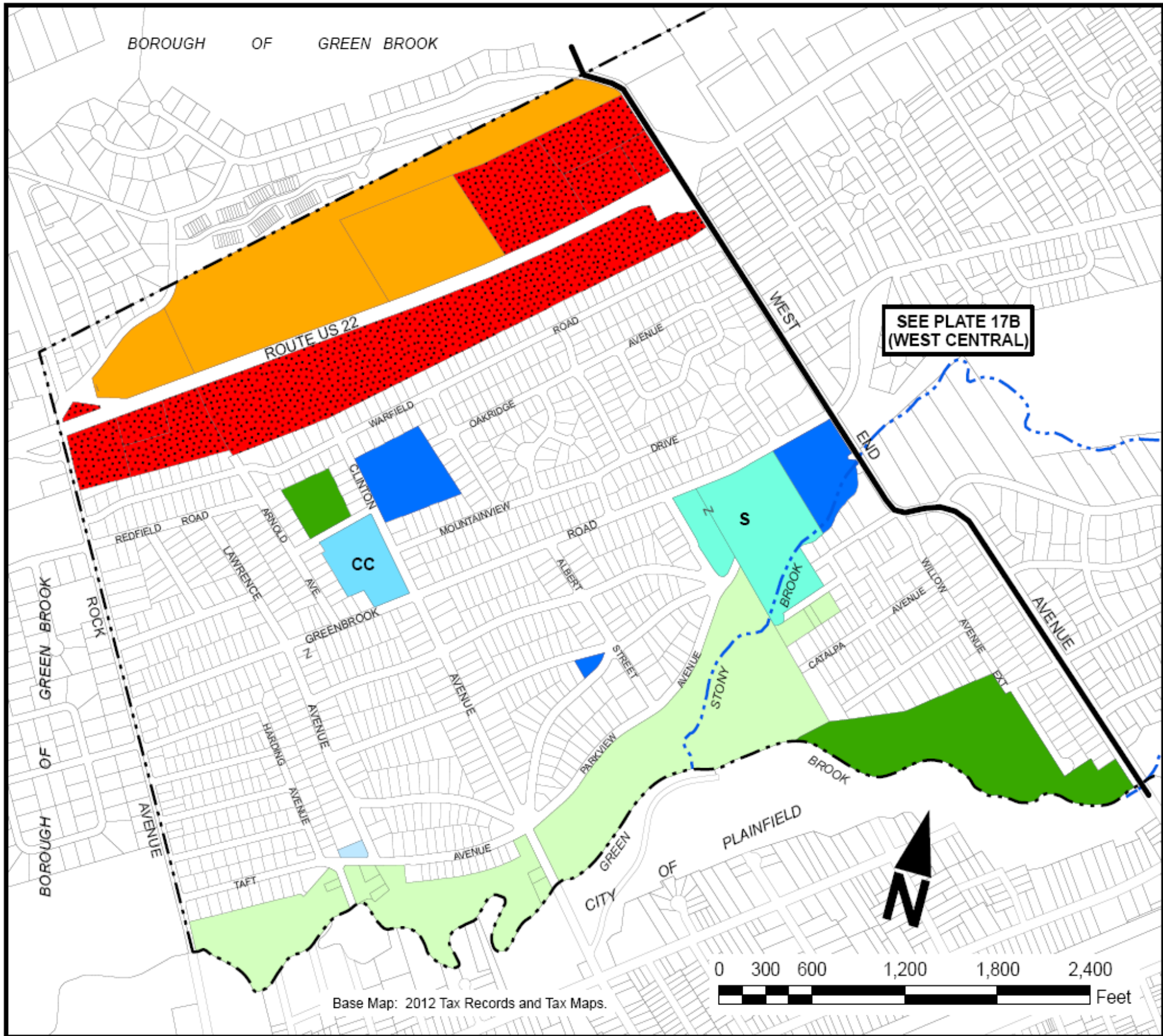
Residential land use designations include: Five single family detached categories with varying minimum lot areas, and four single family detached categories, which include two-family attached residence; townhomes; multi-family development; and, age-restricted housing. Residential categories include:

- Single Family Residence (7,500 SF lot area)
- Single Family Residence (6,000 SF lot area)
- Single Family Residence (10,000 SF lot area)
- Single Family Residence (20,000 SF lot area)
- Single Family Residence (1 acre lot area)
- Single Family & Two-Family Residence
- Single Family, Two-Family Residence & Townhomes
- Single Family & Age Restricted Housing
- Multi-Family Residential

The above noted land use designations in the Plan largely reflect existing zoning and development patterns in the Borough, including the Washington Park Historic District, which is located in the central portion of the Borough. A brief discussion of each residential land use category (including specific proposals) is provided as follows:

Single Family Residence (7,500 SF); and, Single Family Residence (6,000 SF)

These two residential land use categories account for the majority of single family detached development and zoning in the Borough. Single Family Residence (7,500 SF *minimum lot area*) is located in all four planning areas of the Borough, with the vast majority located in the westerly and easterly portions of the Borough. These areas are presently zoned R-1, Residence.



Legend

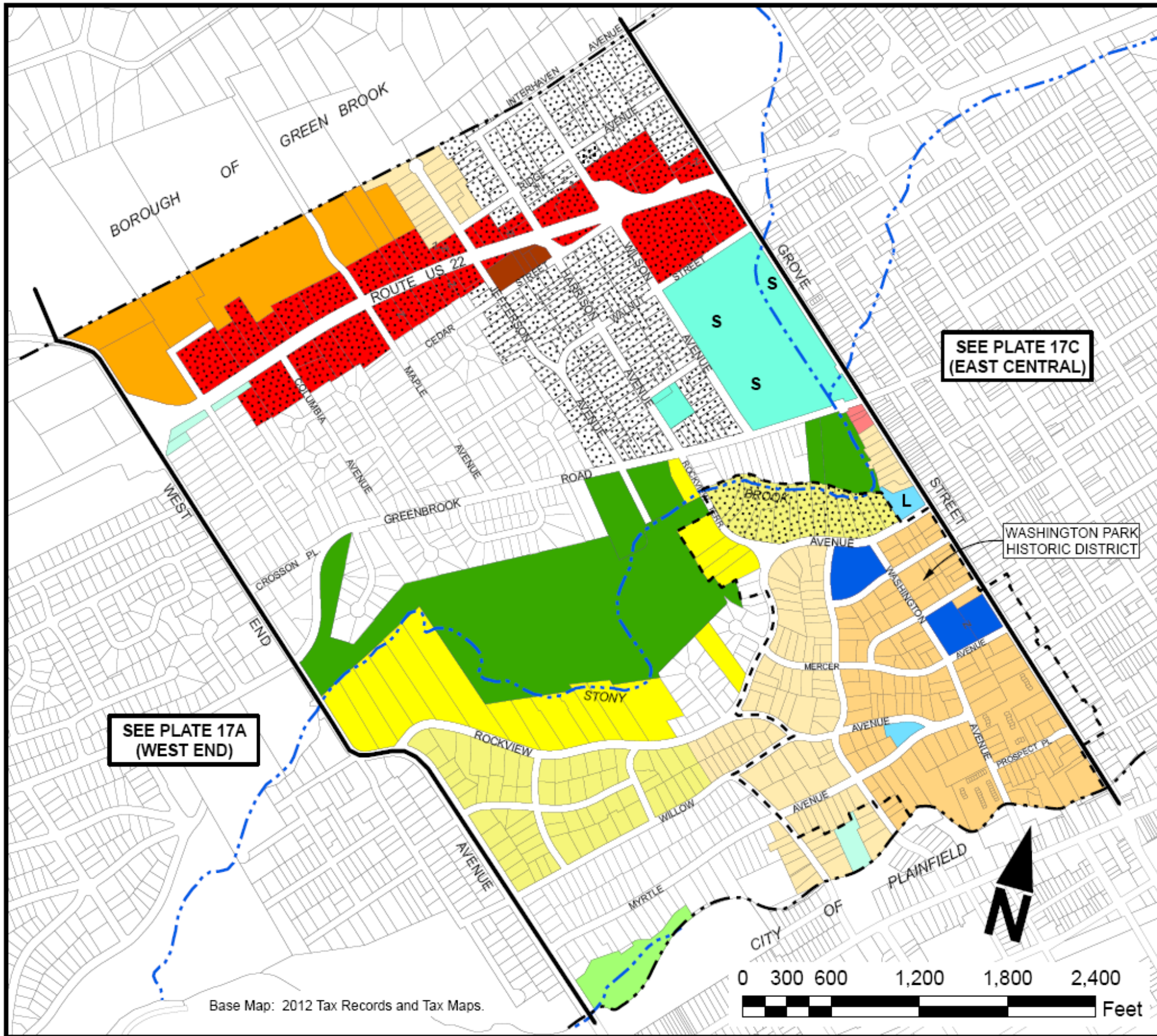
- Single Family Residential (7,500 SF)
- Multi-Family Residential
- Highway Commercial/Business
- Public Facility
- Public School Facility
- Semi-Public/Institutional
- Open Space/Conservation
- Park/Recreation
- Public Land

S - Public School
CC - Community Center

**Borough of North Plainfield
 Master Plan (April, 2014)**

**PLATE 17A
 LAND USE PLAN
 (WEST END)**

Prepared By:
Art Bernard & Associates, LLC



Legend

- Single Family Residential (7,500 SF)
- Single Family Residential (6,000 SF)
- Single Family Residential (10,000 SF)
- Single Family Residential (20,000 SF)
- Single Family Residential (1 Acre)
- Single Family & Two-Family Residential
- Single Family, Two-Family, Townhouse
- Multi-Family Residential
- Business, Office, Commercial
- Business, Office
- Highway Commercial
- Public Facility
- Public School Facility
- Semi-Public/Institutional
- Open Space/Conservation
- Park/Recreation
- Public Land

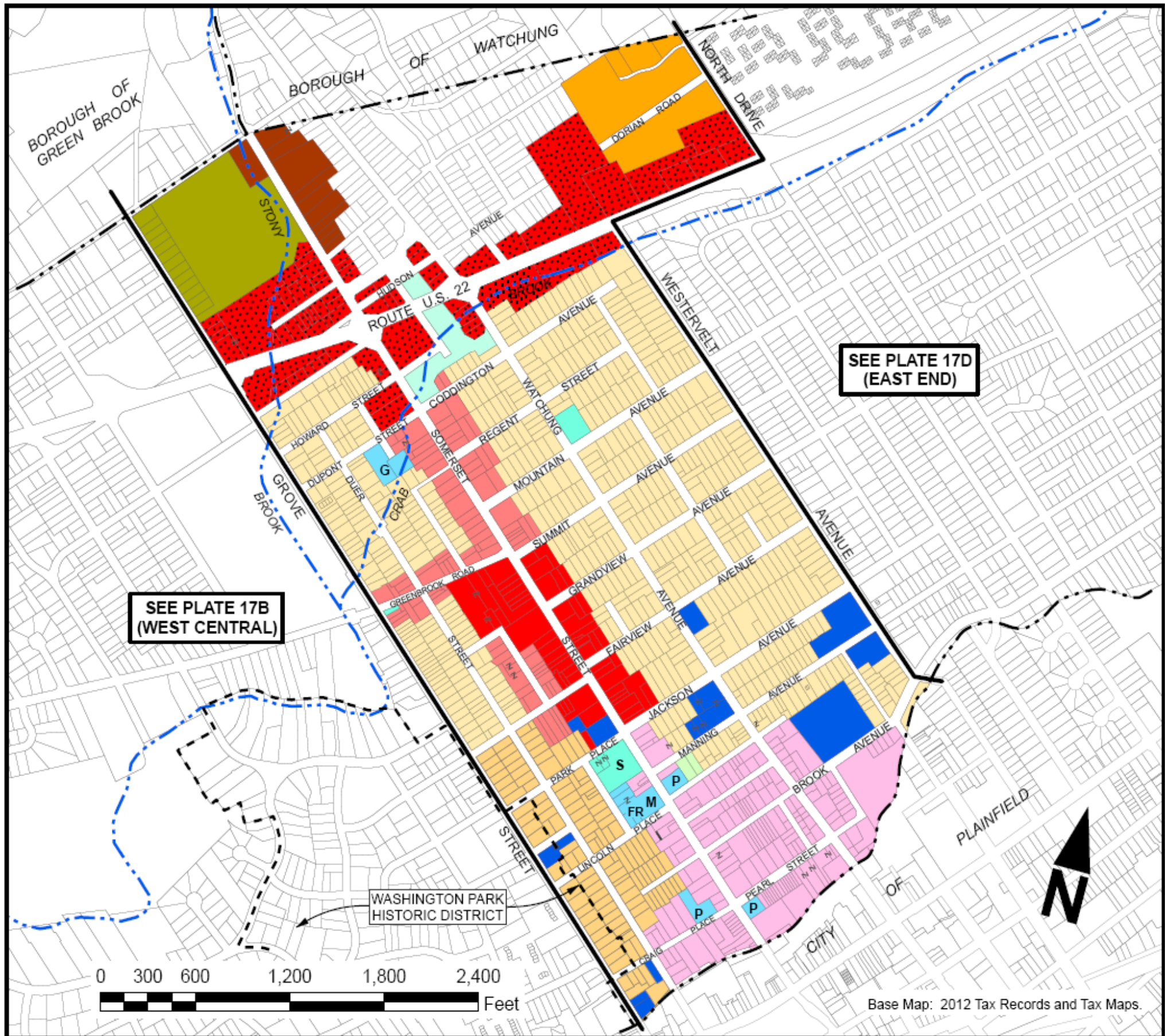
--- WASHINGTON PARK HISTORIC DISTRICT

L - North Plainfield Branch Library
S - Public School

**Borough of North Plainfield
Master Plan (April, 2014)**

**PLATE 17B
LAND USE PLAN
(WEST CENTRAL)**

Prepared By:
Art Bernard & Associates, LLC



Legend

- Single Family Residential (7,500 SF)
- Single Family & Two Family Residential
- Single Family, Two-Family, Townhouse
- Single Family & Age Restricted Housing
- Multi-Family Residential
- Downtown Business/Mixed Use
- Local Business & Services
- Business, Office, Commercial
- Business, Office
- Highway Commercial
- Public Facility
- Public School Facility
- Semi-Public/Institutional
- Open Space/Conservation
- Public Land

--- WASHINGTON PARK HISTORIC DISTRICT

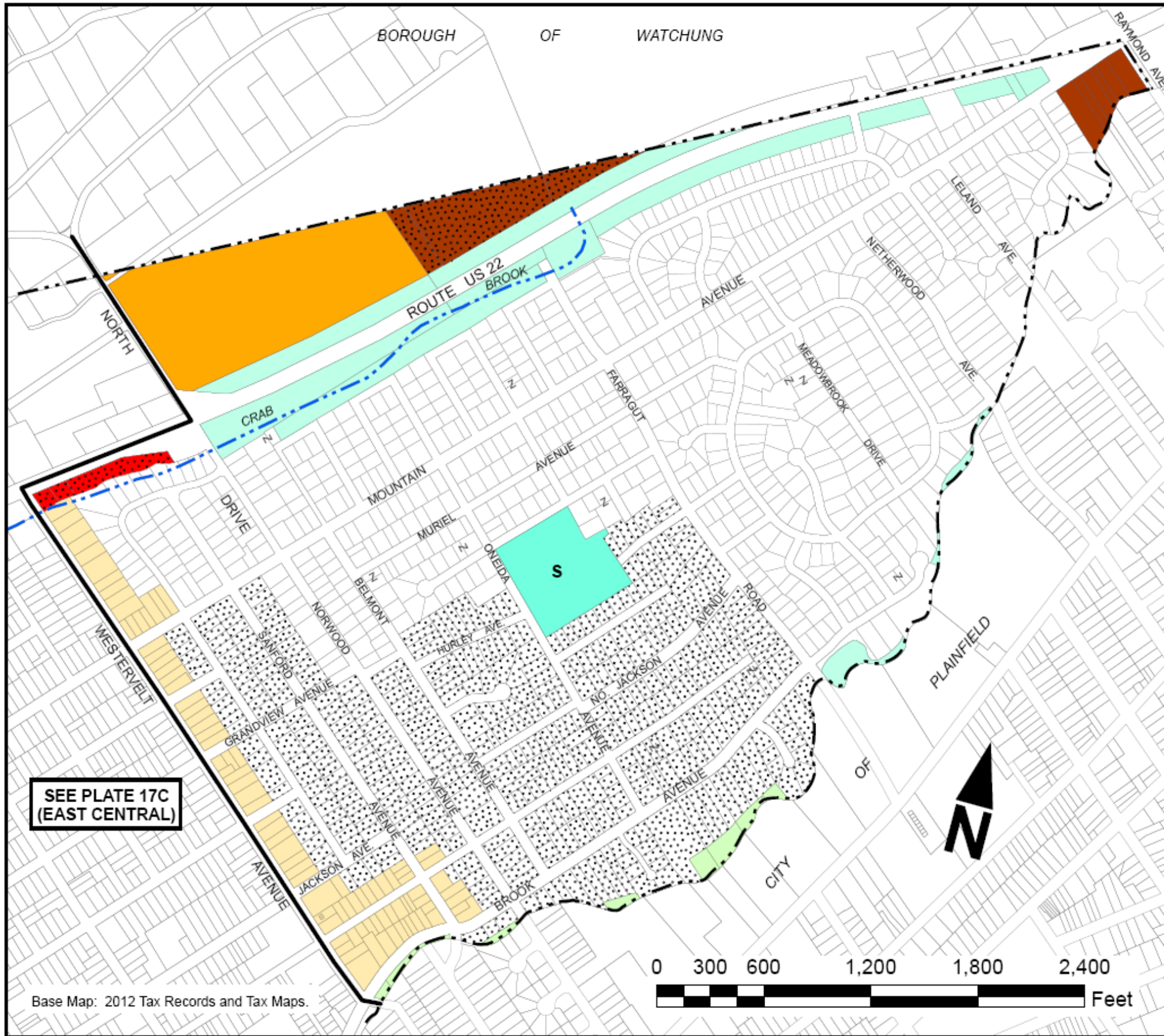
M - Municipal Building
 FR - Fire & Rescue
 G - Borough Garage
 P - Municipal Parking Lot
 S - Public School

**Borough of North Plainfield
 Master Plan (April, 2014)**

**PLATE 17C
 LAND USE PLAN
 (EAST CENTRAL)**

Prepared By:
Art Bernard & Associates, LLC

Base Map: 2012 Tax Records and Tax Maps.



Legend

- Single Family Residential (7,500 SF)
- Single Family Residential (6,000 SF)
- Single Family & Two-Family Residential
- Multi-Family Residential
- Business, Office
- Highway Commercial
- Highway Business
- Public School Facility
- Open Space/Conservation
- Public Land

S - Public School

**Borough of North Plainfield
Master Plan (April, 2014)**

**PLATE 17D
LAND USE PLAN
(EAST END)**

Prepared By:
Art Bernard & Associates, LLC

Base Map: 2012 Tax Records and Tax Maps.



The Single Family Residence (6,000 SF) designation is located in several smaller areas north and west of the Somerset Street business corridor, with a single larger area located in vicinity of East End School. Existing zoning for this land use designation is R-2, Residence.

Single Family Residence (10,000 SF); Single Family Residence (20,000 SF); and, Single Family Residence (1 Acre)

These single family residence zones are located in the West Central portion of North Plainfield, east West End Avenue and in vicinity of Rockview Avenue. The area currently designated for 10,000 SF (*lot area*) single family use is zoned R-6. Single family use on 20,000 SF lot are proposed for R-7, Residence zoning. One (1) acre single family residential lots are zoned R-8, Residence.

Based upon a detailed zoning analysis during the Basic Studies update concerning the yard and area requirements in the existing R-6, R-7, and R-8 Residence zone districts, it was determined that various bulk standards in these zones do not reflect existing development in these zones, resulting in an excessive amount of non-conforming single family dwelling lots. To more properly regulate development in these zones, ***it is recommended that the following revisions be made to the R-6, R-7, and R-8 zone in the Borough’s Land Use Development Regulations:***

- ***R-6 Zone: The minimum side yard requirement should be revised to 7.5 feet.***
- ***R-7 Zone: The minimum lot width should be increased to 70 feet; The minimum lot area requirement should be reduced to 20,000 SF; and, The minimum side yard requirement should be revised to 10 Feet.***
- ***R-8 Zone: The minimum lot width should be increased to 100 Feet; and, The minimum side yard requirement should be revised to 15 feet.***

In addition to the above noted specific revisions recommended to the R-6, R-7, and R-8 Residence Zone bulk requirements, it is further recommended that the minimum lot area requirement for these zones and the R-1 and R-2 Residence Zones be measured as the “total area included within the lot lines,” (as defined in the current Land Development regulations for the Borough of North Plainfield). The existing minimum lot area requirement measurement in these five Residence Zones (“measured within one hundred sixteen (116) feet of the front right-of-way”) should be eliminated.

Single Family & Two-Family Residential; and, Single Family, Two-Family, Townhouse

These two residential land use designations are concentrated in the central portion of the Borough, in vicinity of the Somerset Street business corridor and Watchung Avenue. A wide variety of residences (single family; two-family; three-family or more; and townhomes) are located in these areas which also includes the Washington Park Historic District. The areas designated as Single Family and Two-Family Residential use are presently zoned R-3, Residence. The area designated as Single Family, Two-Family, Townhouse is presently zoned R-4, Residence.

Based upon a non-conforming lot analysis of a portion of the existing R-6 Residence District conducted as part of the above noted basic studies zoning analysis, ***the Land Use Plan designates an additional area to be designated as “Single Family & Two-Family Residential.” This designation is proposed to reduce the substantial number of non-conforming lots in this area based upon the current R-6, Residence District yard requirements. The specific properties include: Block 132, Lots 1-21.02; Block 133, lots 1-19; and Lots 7-23 of Block 149. To effectuate proposal, it is recommended that these properties be zoned R-3, Residence.***

To encourage non-residential development in the Borough, and provide necessary professional services to Borough and area residents, ***it is recommended that professional office use and mixed office-residential use be permitted as a conditional use within the R-3, Residential zone on properties with direct frontage and access along Watchung Avenue.*** This conditionally permitted land use would increase the tax base of the community; provide professional office use in the central portion of the Borough, thereby serving the entire community; and, facilitate the use of bus transit systems along the County Route 531 corridor. ***It is recommended that with development of Watchung Avenue for professional office use, ‘gateway’ themed access treatments such as street trees, lighting, and sidewalk treatments should be considered along key side streets leading to the Somerset Street business corridor and downtown business area.***

Single Family & Age-Restricted Housing

This residential land use designation is located in the central portion of the Borough, adjacent to the municipal boundary with Green Brook Township (between Grove Street and Somerset Street). This zone comprises the former Villa Maria property, which is currently unoccupied, and twelve vacant single family building lots (along Grove Street). Existing zoning for this area (R-9, Residence) permits single family residential use on 6,000 SF lots and age-restricted housing for persons age 55-years and older, at a maximum gross density of 16 units per acre. No changes to this land use designation or existing zoning are proposed.

Multi-Family Residential

This land use designation is located in two distinct areas of North Plainfield, comprising several older large multi-family residential developments, including rental garden apartments and condominium development. Each area is located north of Route U.S. 22, and is zoned R-5, Residence. The maximum permitted gross density for these areas is sixteen (16) units per acre. No changes to this land use designation or existing zoning are proposed.

Historic District Residence

The Washington Park Historic District is located west of the Somerset Street corridor. The District was identified on the National and State Register of Historic Places in 1987. Development in the District is regulated by the requirements of the R-1 and R-2, Residence Zone districts, and specific requirements for rehabilitation, restoration, construction or

reconstruction. ***Other than the inclusion of the Historic District within the proposed “area in need of rehabilitation,” no specific recommendations or changes to the Washington Park Historic District are proposed.***

Commercial/Business Land Use

Non-residential land use designations include a variety of commercial and business categories, which reflect existing development patterns along the Somerset Street corridor; the Route 22 highway corridor; and, the downtown business area. These land use categories include:

- Downtown Business/Mixed Use
- Local Business & Services
- Business, Office, Commercial
- Business, Office
- Highway Commercial
- Highway Commercial/Business
- Highway Business

Downtown Business/Mixed Use

The downtown business area in North Plainfield exhibits a wide variety of commercial retail and service establishments; professional and business offices; single family and multi-family residences (2-units or more/structure); attached townhomes; and, mixed-use commercial / residential (apartment) uses. The downtown area extends from the municipal boundary with the City of Plainfield north to Park Place/Jackson Avenue, generally between Duer Street to Elm Place, including the ‘old mill’ property on Pearl Street/Brook Avenue. Much of the existing uses in the downtown area are housed in older structures, which increasingly exhibit wear from continuous use with minimal maintenance/upgrade in recent years. Existing zoning for the downtown area is B-1, Business.

As part of the effort to rehabilitate the central portion of the Borough and particularly in the downtown area, ***it is proposed that the Downtown Business/Mixed Use district extend along both sides of Somerset Street, from Lincoln Place/Race Street north to Park Place/Jackson Avenue. This extended area includes all commercial properties fronting along each side of Somerset Street, excluding existing public uses (Borough Hall, Somerset School, etc.). To effectuate this designated land use change, it is recommended that the existing B-1, Business Zone extend north to Park Place/Jackson Avenue, including all properties fronting along the east side of Somerset Street (Block 82, Lots 1 & 2; Block 81, Lots 1, 15 – 18) and Block 93 (west side of Somerset Street) in its entirety (Lots 3.01 – 10).***

Local Business & Services; and, Business, Office, Commercial

The Local Business & Services designation is located along both sides of Somerset Street between Park Place/Jackson Avenue and Greenbrook Road/Summit Avenue. This land use

designation provides for varying commercial establishments, which primarily serve local consumers and residents. The area designated as Local Business & Services is presently zoned B, Business.

The Business, Office, Commercial designation is shown extending north from Greenbrook Road/Summit Avenue along both sides of Somerset Street to the Howard Street/Route 22 Overpass Ramp, including properties along both sides of Greenbrook Road, extending to Grove Street. An additional area is located along a portion of both sides of Steiner Place, north of Linden Avenue. This land use designation is currently zoned B-2a, Business, and provides for the development of business and professional office use, and commercial retail stores and shops.

Business, Office

Three areas in North Plainfield are shown for Business, Office use, including one existing area located along Somerset Street adjacent to the Green Brook municipal boundary (currently zoned B-2, Business). ***Two additional areas in the Borough are proposed for Business, Office use, including: 1) Block 116, Lots 2-6 (Cedar Street & Route 22); and, 2) Block 1, Lots 1-6 (Mountain Avenue & Route 22). A description of each proposed rezoning is provided as follows:***

Block 116, Lots 2-6 comprise an area adjacent to Route 22, including one business office use, two dwellings, a 23-unit multi-family apartment use, and a vacant/billboard site. This area is depicted on the Land Use Plan - Plate 17B, West Central. Adjacent to these lots, is an existing commercially zoned auto repair use (Lot 7), which has direct frontage along Route 22. Designation of this area for Business, Office use reflects proximity to Route 22 and represents low-intensity commercial use which is more in character with residential use south of Cedar Street. It is recommended that these parcels be rezoned B-2, Business.

The designation of Lots 1 - 6 of Block 1 (vicinity of the Mountain Avenue/Route 22 intersection), for business use is also more in character with the commercial nature of the Route 22 corridor. At present, this area includes an automotive repair use, a former day-care business, and four dwellings. Due to the proximity of these parcels to the Route 22 corridor, and in light of traffic conditions in the vicinity of the Mountain Avenue signalized intersection of the highway, the Land Use Plan (Plate 17D, East End) proposes this area for Business, Office Use. To effectuate this recommendation, this area is proposed for B-2, Business zoning.

Highway Commercial; Highway Commercial/Business; and, Highway Business

These three commercial land use designations are located along the Route U.S. 22 highway corridor. The “Highway Commercial” designation is shown along both sides of Route 22 between West End Avenue and North Drive, while the “Highway Commercial/Business” designation and the “Highway Business” designation are located along the western and eastern portions of the highway, respectively.

The area designated as “Highway Commercial” along Route 22 includes two existing B-3, Business Zones (between Little Place and Grove Street, and, between Watchung Avenue and North Drive), and an existing B-6 Business Zone in vicinity of the Somerset Street/Watchung Avenue interchange). No changes are recommended in the Land Use Plan concerning the existing areas zoned B-3. ***It is proposed that the area currently zoned B-6, be re-designated in the Land Use Plan as “Highway Commercial” (formerly designated in the Land Use Plan as “Office Redevelopment”), and rezoned as B-3, Business. The B-3, Business zone permits commercial, retail, office, public garages/fuel stations, and motel use, with no minimum lot area requirement and a maximum building height of 35 feet (2-1/2 stories), while the B-6 zone permits similar uses, with the exception of public garages/fuel stations, with no minimum lot area and a maximum building height of five (5) stories (50 feet). The proposed Land Use Plan designation (“Highway Commercial”) and proposed rezoning (B-3, Business) more closely reflects existing development and likely future development patterns in the area.***

In addition to the above noted recommended B-3, Business rezoning, the existing high school athletic field (Upper Krausche Field – Block 123, Lot 2) is designated for “Highway Commercial” use (Plate 17B, West Central) and proposed to be zoned B-3, Business. The property in question is located along the eastbound side of Route 22, adjacent to an existing commercial retail use (CVS Pharmacy), and is presently zoned R-2, Residence. Business zoning of the parcel would facilitate future commercial development, and would also permit business sponsor advertisement in support of high school athletic programs.

The “Highway Commercial/Business” land use designation is shown along Route 22, between Rock Avenue and West End Avenue. This area is presently zoned B-4, Business, and permits a variety of commercial retail uses, restaurants, motels and business office use. Redevelopment of the former Kmart/Pathmark shopping center property (Block 203.1, Lot 1) is presently underway in this area, which will provide for redevelopment of a portion of this older commercial property. No proposed changes are proposed for this land use designation.

The “Highway Business” land use designation is shown along the north side of the easterly portion of Route 22, adjacent to the Watchung Borough municipal boundary. This designation reflects B-5, Business zoning, which permits office buildings, research laboratories and townhome development. At present, land use within the area includes a single vacant commercial property, one vacant lot, and a portion of the Crystal Ridge residential development located in Watchung Borough. No changes to land use designation are proposed.

Based on a concern that the Borough’s existing cell tower ordinance, as applied, would prevent the location of any cell tower facility, it is recommended that the Borough revise the site location requirements and overall ordinance requirements for telecommunication installations in the Borough. In order to prevent the intrusion of telecommunications infrastructure into residential zones of the Borough, it is recommended that cell tower(s) and antenna(s) should only be permitted as a conditional use along Route U.S. 22 in the B-3, B-4, or B-5 Business zones.

Public/Semi Public Use

The remaining land use designations concern various public and semi-public categories, which reflect existing and proposed facilities that serve the community. These uses include:

- Public Facility
- Public School Facility
- Semi-Public/Institutional
- Open Space/Conservation
- Parks & Recreation
- Public Land (*vacant/undeveloped*)

Land Use Plan designations concerning “Public Facility” and “Public School Facility” include existing and proposed municipal facilities (i.e. Town hall, Vermeule Community Center, Library, etc.) and existing public school sites and properties owned and operated by the North Plainfield Board of Education. Land uses designated as “Semi-Public/Institutional” include existing religious uses, private school sites, or cemetery use in the Borough. Properties designated as “Open Space/Conservation” and “Parks & Recreation” include existing municipal properties utilized for recreational use, and land parcels earmarked for future recreational use or open space/conservation. These various uses depicted on the Land Use Plan reflect the proposals set forth in the Community Facilities Plan and Parks, Recreational and Open Space/Conservation Plan, respectively.

Properties identified as “Public Land” on the Land Use Plan include vacant land parcels owned by the State of New Jersey or North Plainfield Borough. These parcels are utilized, in part, as existing roadway infrastructure (Route 22/Somerset Street/Watchung Avenue interchange), and also include environmentally sensitive lands along the Green Brook and along the southerly side of Route 22 (vicinity of Crab Brook).

DOWNTOWN REVITALIZATION PLAN

Revitalization of the downtown area in North Plainfield has been a continuing focus and concern in past Master Plan documents. Past efforts to improve the downtown area, including the Somerset Street corridor south of Route 22, have seen limited success, largely focusing on various streetscape improvements, including textured pedestrian crosswalks, street trees and lights, and sidewalk (brick pavers, etc.) treatments. These efforts, while moderately enhancing the ‘attractiveness’ of the downtown area, have achieved little in terms of drawing outlying ‘west end’ and east end’ residents to the downtown area, which continues to primarily serve residents living in dwellings and mixed-use buildings within and immediately surrounding the downtown area.

The downtown area should be viewed as the ‘heart’ of North Plainfield, serving all Borough residents as a meeting place for the entire community, whether for local shopping needs or entertainment, or simply as a place to stroll on a lazy afternoon or evening. The Master Plan update seeks to revitalize the downtown area through the ‘built environment’ and by providing a desirable destination for pedestrian, whether arriving on foot or by other means to the downtown area.

In an effort to enhance the central business area along Somerset Street and to revitalize the downtown area, the Downtown Revitalization Plan seeks to further ‘define’ the downtown area of the Borough in terms of fostering a desirable destination for all residents of North Plainfield. While the various measures proposed in this Plan may be initiated and/or implemented by North Plainfield as part of a broader effort to revitalize the downtown area, many improvements (i.e. enhanced streetscape improvements and pedestrian safety measures; improved traffic circulation; and, improved access to the downtown area) may be included as part of the rehabilitation and/or redevelopment process discussed in the Land Use Plan.

The Downtown Revitalization Plan includes a comprehensive approach to creating a more vibrant downtown area through the following components:

- Land Use & Zoning
- Civic Center and Open Space
- Off-Street Parking
- Streetscape Improvements
- Traffic Circulation & Pedestrian Safety

Land Use & Zoning

The Land Use Plan proposes to extend the “Downtown Business/Mixed Use” designation for all commercial properties having frontage along both sides of Somerset Street between Lincoln Place/Race Street and Park Place/Jackson Avenue intersection. On the west side of Somerset Street, this would incorporate town hall within the downtown area, in addition to three mixed-use, three-story commercial building lots (Block 93, Lots 4.01, 4.02 and 5) and Somerset Intermediate School. On the east side of Somerset Street, five commercial building lots between Race Street and Jackson Avenue would be incorporated in the downtown area, as well as the existing municipal parking lot on Race Street and the proposed open space area (Block 82, Lots 3 and 4). ***To effectuate this proposed enlargement of the Downtown Business/Mixed Use land use designation, it is recommended that all properties fronting along both sides of Somerset Street be rezoned B-1, Business.***

To promote revitalization of the downtown area, it is recommended that the Borough’s Land Use development ordinance be amended to permit mixed-use commercial/office and residential apartment use in the B-1, Business zone. Regulation of these uses through appropriate bulk requirements would encourage proper development of mixed-uses through the rehabilitation or redevelopment process in the downtown area, thereby fostering a more vibrant downtown area. ***Composition of mixed-use buildings should be permitted as follows:***

- ***Ground Floor: commercial retail/service use and /or professional/business use;***
- ***Second Floor: professional/business office use only or residential use; and,***
- ***Third Floor: professional/business office use only (if on second floor) or residential use only.***

In addition, it is recommended that all commercial use or mixed-use buildings in the downtown area on lots having frontage along Somerset Street should be a minimum of two-stories (25 feet) in height.

Revitalization of the downtown business area is not only predicated upon creation of a vibrant downtown area for downtown residents, but *also* upon attraction of all Borough residents to the downtown area. Establishing the downtown area as a community asset and a viable destination therefore includes meeting all Borough resident needs through the provision of necessary local commercial services and retail goods, and commercial entertainment uses. ***To achieve this, it is recommended that in addition to permitting mixed-use residential and apartment/townhouse use in the B-1, Business district, permitted uses in the B-1 zone be amended to include the following commercial service/retail and business uses:***

- ***Commercial retail establishments (convenience stores; delicatessen/food stores and markets; bakeries; liquor stores; drugstores, including cosmetics & pharmacies; etc.);***

- ***Specialty Retail uses (clothing & apparel stores; antique/hobby/toy stores; art supply stores/galleries; music/book stores; jewelry/collector stores; optician/eyeglass stores; sporting goods; etc.);***
- ***Commercial Service establishments (barbershops/beauty salons, including nail salons; dry-cleaning/laundry uses, including tailors; computer sales/service & office supplies/printing establishment; household & appliance repair shops; travel agencies and immigrant service establishments; vocational schools & music/dance studios; etc.);***
- ***Professional and business office establishments (lawyer & doctor offices; financial & insurance services; consulting professional service offices; real estate agencies, etc.);***
- ***Financial institutions and banks; and,***
- ***Restaurants and/or bars & taverns, excluding drive-thru/drive-in establishments and fast food restaurants.***

Uses which should be prohibited in the B-1 Business zone include uses which are ‘automobile oriented’ (i.e. new /used auto sales and/or auto parts sales; auto repair and/or fueling stations, etc.) and uses which do not promote the local commercial/business service or retail needs of the community (i.e. funeral homes, central telephone exchanges).

In conjunction with the encouragement of local business oriented uses within the downtown area, it is recommended that architectural guidelines be established to provide common design elements for building façade treatments, front elevation window opacity/proportion standards, window/façade lighting, etc. Design guidelines for commercial uses should also include uniform façade/window signage, particularly for multi-tenant commercial buildings, and design standards for outdoor (sidewalk) cafés where practical.

Civic Center & Open Space

Along with providing ‘community-serving’ commercial service and retail uses in the downtown area, creation of a ‘Civic Center’ area in North Plainfield is essential in establishing the downtown area as a viable ‘destination’ for all Borough residents. Creation of public open space within the downtown area will provide a public gathering space for municipal events and activities, as well as provide passive recreational opportunity in close proximity to local business establishments. Utilization of public space in the downtown area will ‘draw’ patrons to downtown businesses and foster additional community events and gathering opportunities for local residents.

This component to the revitalization of the downtown area includes the incorporation of the existing town hall building and site (Block 93, Lots 6.01 - 10) between Vine Street and Somerset Street, and the proposed public open space area (Block 82, Lot’s 3 & 4) located to the east of Somerset Street, between Race Street and Manning Avenue. Discussion

concerning these two facilities is provided in further detail in the Community Facilities and Services element, and the Parks, Recreation and Open Space/Conservation Plan element.

In addition to the creation of the above noted public open space, creation of open space areas by private land owners or developers should be encouraged. Privately created open space areas would include the provision of open-air seating and/or shade trees in the downtown area, or outdoor eating (dining) areas. It should be emphasized that public or privately created open space in the downtown area must consider location and ease of access, and above all, public safety. Public and privately created open spaces should be designed in a secure and 'inviting' manner, be well lit in the nighttime, and be available for public use during established daytime and evening hours.

Parking

Public parking in the downtown area is provided at two existing locations within the downtown business area. These public lots are located on Race Street (Block 82, Lot 2) and on Craig Place (Block 92, Lot 15). In addition, on-street metered parking is provided throughout the downtown area, including along most portions of Somerset Street (south of Route 22). As noted in the Community Facilities and Services Plan, additional public parking could become available within the Race Street lot with expansion of the town hall parking area (Vine Street) and the re-designation of municipal vehicle/staff parking in the Race Street lot for public metered parking. Based upon this parking scenario, a total of 63 metered public parking spaces would be provided within the two public parking lots on Craig Place and Race Street, exclusive of 22 permit spaces (*first come – first served*) in the Craig Place Lot and 233 on-street metered spaces in vicinity of Somerset Street and Watchung Avenue.

A future municipal parking lot/public use facility is proposed at the intersection of Somerset Street and Pearl Street (Block 88, Lot 6). This 0.26 acre parcel is located along the northbound side of Somerset Street. It is proposed that this parcel be developed for public parking to serve the downtown business area, and also for public use/open space area (i.e. expanded brick-paver sidewalk area with benches and landscape trees and/or shrubs, etc.) adjacent to the sidewalk area along Somerset Street. It is recommended that ingress/egress to this proposed parking lot be provided from Pearl Street to avoid added turning movements along Somerset Street.

Provision of additional off-street parking should be encouraged with rehabilitation or redevelopment of commercial properties in the downtown area. Off-street parking in the downtown area should not be located in the front yard of building lots, and should preferably only be provided in the rear yard areas of lots fronting along Somerset Street, or if necessary, within side yard areas. In an effort to minimize mid-block turning movements along Somerset Street, alternate access to off-street parking lots should be provided (where possible) from side streets.

Multi-lot, shared rear yard parking should be encouraged, including provision for pedestrian access (alley-way) to the street front area along Somerset Street. Rear building public access to ground floor commercial/business uses may be provided from rear yard parking lots where feasible. Creation of off-street parking lots for residents, businesses or for use by the general public must emphasize public safety and security, including clearly defined pedestrian ways or alley ways which offer good surveillance opportunity (i.e. open to public view), and proper lighting during evening hours.. With redevelopment or rehabilitation of downtown businesses or mixed uses, off-street parking should be provided for on-site employees (maximum shift) and residents (per RSIS). Where feasible, rear yard metered public parking behind commercial buildings may be provided through the creation of a municipal parking easement on private lots, specifying the number of spaces, access and maintenance, or by dedication of such land to the Borough for municipal parking purposes.

Streetscape

In developing a strategy for the revitalization of the North Plainfield downtown area, a key component to success includes placing ‘pedestrian life’ as the dominant feature. Key aspects to pedestrian life in the downtown area include patronage of local businesses and participation of local events and municipal festivities throughout the year. It is therefore essential to establish the downtown area as a desirable destination through the creation of an inviting, attractive, and safe environment, and by various means to enhance ‘streetscape’ features along Somerset Street and on approaching gateway side streets to the downtown area.

The downtown streetscape comprises a large part of the built environment for local business patrons and residents. The outdoor (streetscape) area along store fronts serves as a visual ‘attraction’ to local businesses for pedestrians and the motoring public, as well as directly accommodating pedestrian activity along Somerset Street. **In addition to existing streetscape features within the downtown area (lighting, street trees, sidewalk treatments, etc.), recommended improvements include the following:**

- **Bump-out treatments at street intersections along Somerset Street to accentuate pedestrian crosswalk locations and improve sight distance for approaching side street traffic;**
- **Planters with low-growth vegetation, ornamental trees or flowers (may include brick planters at a height to facilitate public seating);**
- **Street furniture, including bench seating, trash & recycling receptacles, modern bicycle racks, etc.; and,**
- **Thematic signage to provide public awareness of public parking areas, key features of the downtown area (municipal offices, open space/plaza areas, etc.).**

Enhancing the streetscape environment and maintaining the quality of life for Borough and downtown residents includes cooperation with the local business community, public awareness, and municipal support in terms of increased maintenance of streetscape infrastructure, and police presence and enforcement of on-street parking regulations and discouragement of 'jay'-walking movements. It is therefore essential that continued revitalization of the streetscape in the downtown area include a campaign to increase public awareness and to involve all members of the local business community.

Traffic Safety & Pedestrian Safety

Traffic circulation and pedestrian safety throughout the Borough, and particularly in and around the downtown business area, is a vital concern. The viability of the downtown area as a place to reside and to shop, as well as serving as a leisurely destination is dependent upon creating safe travel conditions for pedestrians and motor vehicle traffic along Somerset Street, Watchung Avenue, and neighboring side streets. The Circulation Plan element proposes a variety of measures intended to improve circulation and pedestrian safety in the downtown area, including:

- ***Proposed one-way traffic circulation (Race Street and Somerset Place);***
- ***Placement of advance warning (signage, bollards, pavement markings, etc.) for pedestrian crosswalk areas;***
- ***Enhanced crosswalk treatments for improved visibility;***
- ***Bumpout (curb extension) treatments to reinforce appropriate pedestrian crossing locations and to 'calm traffic through the downtown area; and,***
- ***Bus stop 'turnouts' (to reduce impedance to traffic flow in bus stop area(s)).***
- ***Improved sight distance at side street intersections.***

In addition to these improvements recommended in the Circulation Plan element, streetscape improvements noted previously will also enhance traffic Safety and pedestrian safety. These improvements include the provision of street furniture (benches, bicycle racks, planters, street trees, etc.) to dissuade 'jay'-walking along Somerset Street and emphasize appropriate crosswalk locations at side street intersection.

CIRCULATION AND TRANSPORTATION PLAN

The Circulation Plan for North Plainfield Borough is presented on Plate 18. The Plan illustrates the Borough roadway system, including roadway classifications; recommended rights-of-way and pavement (cartway) widths; vacation of rights-of-way; proposed cul-de-sacs (turn-arounds); proposed road extensions; and, roadway traffic flow patterns.

To effectuate the enumerated goals and objectives for circulation and transportation systems in North Plainfield, this Plan element provides a multi-faceted approach to the circulation system in North Plainfield, including roadways, pedestrian travel, bicycle travel, and facilitation of public transit systems. These transportation modal systems relate directly to land use patterns in the Borough, including commercial and residential development as well as public land use activities (municipal, educational and recreational facilities). The overall intent of the Plan is to foster improved circulation patterns in the Borough, including enhanced alternate modes of transportation, improved pedestrian safety, and safe, efficient access to the downtown business area and community facilities.

The Circulation Plan illustrates the roadway functions of various major roadways in North Plainfield. The Plan provides a guideline for future circulation patterns associated with new development and/or redevelopment in the Borough, and also shows the right-of-way and cartway width for all classified roadways, other than local access roadways. As a result of existing development conditions in the Borough, the rights-of-way and cartway widths shown represent existing roadway conditions for the most part. These existing physical roadway conditions are largely intended to remain with future development or redevelopment in North Plainfield, which is not expected to result in a substantial increase in traffic activity on the local roadway system.

'Turn-a-round' (cul-de-sac) treatments are proposed at the terminus of several existing residential roadways to eliminate butt-end road conditions, which restrict u-turn movements of passenger vehicles and small single-unit vehicles (i.e. delivery vehicles). Turn-a-round treatments should have a minimum pavement radius of 25 feet (minimum right-of-way radius: 33 feet), and would require restrictions to on-street parking within the turn-a-round. In addition, turn-a-rounds would likely require the acquisition of additional right-of-way. In the alternative, 'hammerhead' u-turn treatments could be provided to reduce right-of-way acquisition and limit on-street parking restrictions for dwellings at the end of existing butt-end residential streets.

Several street vacations are proposed on the Circulation Plan map to eliminate unnecessary rights-of-way and/or unimproved streets, which currently do not, nor are necessary to provide access to future land use(s) or for access to public facilities or drainage ways and

structures. To provide added recreation/open space-conservation area, the following street vacations are proposed:

- **Jefferson Avenue [south of Greenbrook Road] – to facilitate future recreation area;**
- **Princeton Lane [south of Parkview Avenue] – to facilitate future open space/conservation area;**
- **Lawrence Avenue [south of Parkview Avenue] – to facilitate future open space/conservation area; and,**
- **Rockview Avenue [west of Chestnut Avenue] – to facilitate future open space/conservation area.**

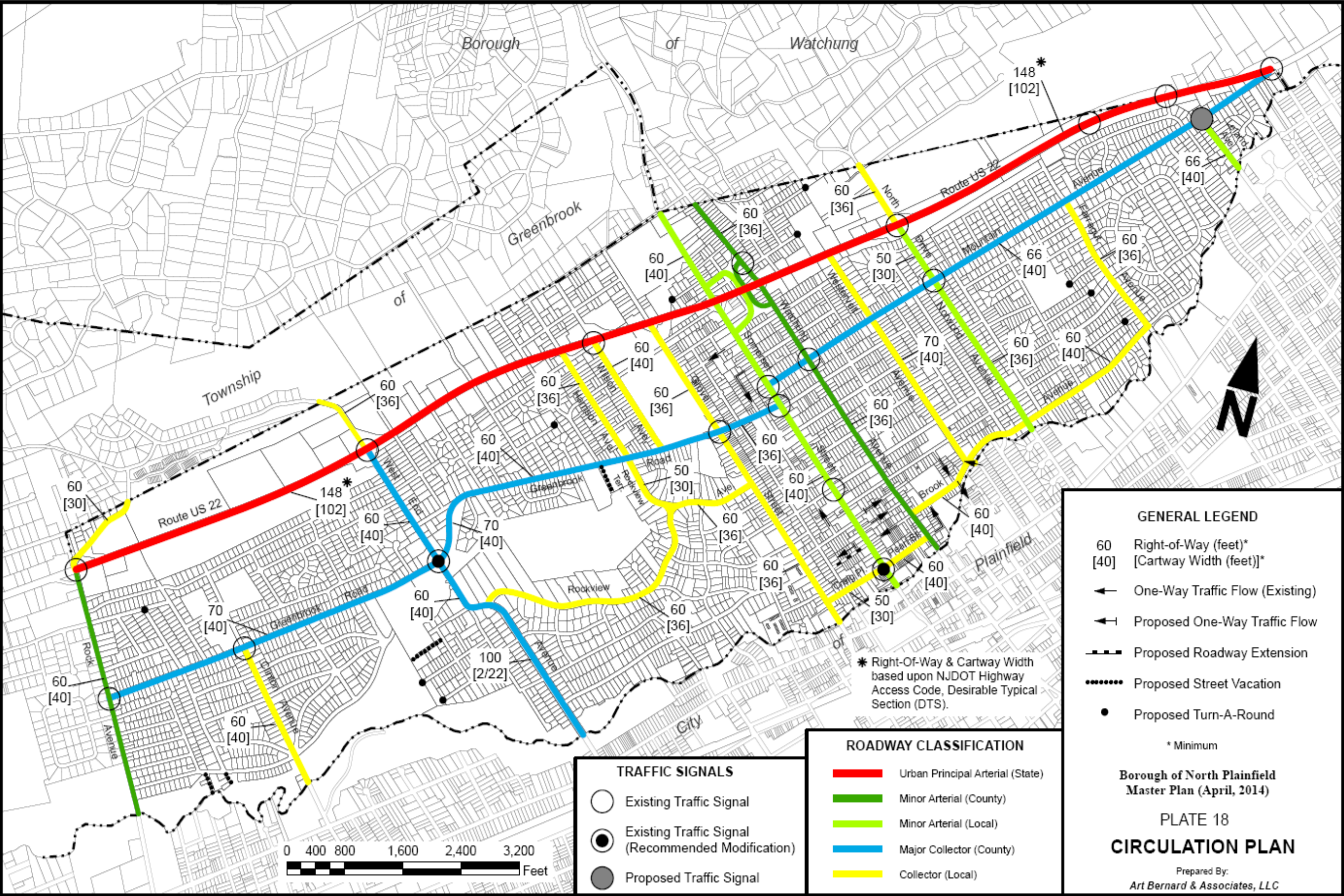
In the downtown area of North Plainfield, the Circulation Plan proposes the extension of Somerset Place to Duer Street, including one-way (westbound) traffic flow. This improvement is proposed in consideration of the limited available right-of-way and restrictive cartway width for two-way traffic flow and on-street parking on Somerset Place. It is recommended that a minimum right-of-way of 40 feet be provided for the entire length of Somerset Place, including a cartway width of 28 feet (parking on one side only). Implementation of this proposal would require acquisition of two existing residential lots on Duer Street (Block 92, Lots 24 and 25).

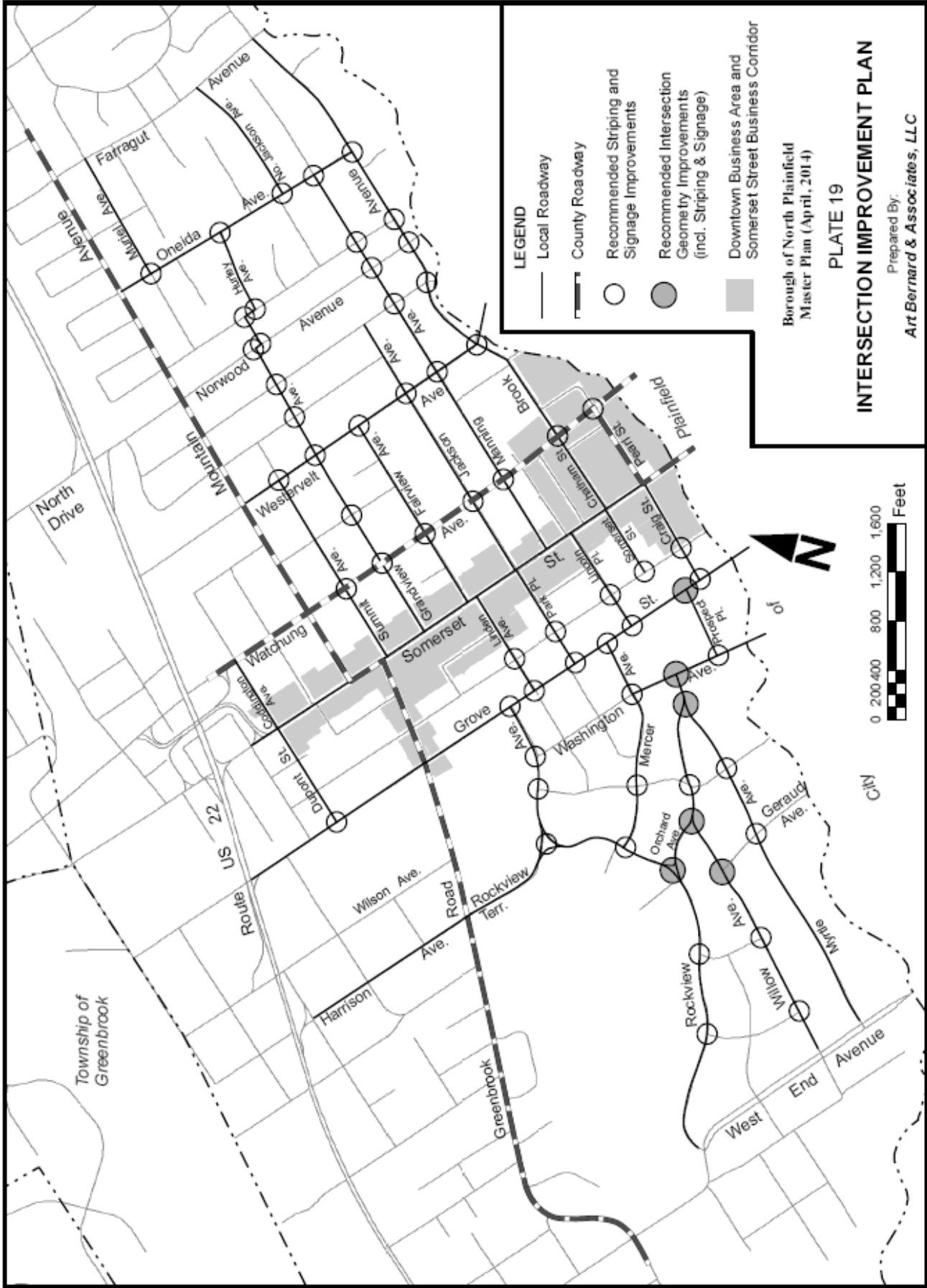
Race Street is proposed for eastbound one-way traffic flow (between Somerset Street and Watchung Avenue). This traffic flow configuration is proposed to ease congestion along Somerset Street in the downtown business area, and also reflects limited available right-of-way and restrictive cartway width for two-way flow and on-street parking. It is recommended that Race Street have a minimum right-of-way of 40 feet (currently ±39.4 Feet, with a 28-foot cartway width (on-street parking on one side).

Intersection Improvements

As an older near-fully developed and densely populated municipality, North Plainfield's roadway infrastructure bears continuous use, particularly through existing residential neighborhoods which lead to the downtown business area and community facilities (i.e. schools, parks, etc.). In an effort to maintain roadway infrastructure, the Borough's ongoing capital improvement program, including pavement resurfacing, curbing and drainage improvements, and implementation of various striping and signage improvements at key locations has sought to keep pace with traffic demand.

To supplement these efforts and further improve traffic and pedestrian safety, the Circulation Plan identifies primary access roadways in the central portion of the Borough, which provide access to the downtown business area and several public facilities in the central portion of North Plainfield. Plate 19 illustrates these primary access routes, including the location of specific intersections recommended for intersection geometry (curbing) improvements and/or striping and signage improvements. In large part, the primary access routes identified on





LEGEND

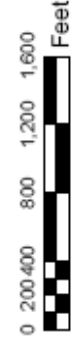
- Local Roadway
- County Roadway
- Recommended Striping and Signage Improvements
- Recommended Intersection Geometry Improvements (incl. Striping & Signage)
- Downtown Business Area and Somerset Street Business Corridor

Borough of North Plainfield
Master Plan (April, 2014)

PLATE 19

INTERSECTION IMPROVEMENT PLAN

Prepared By:
Art Bernard & Associates, LLC



Feet

Plate 19 include roads in vicinity of public schools identified in a recent study (Safe Routes To Schools) as needing pedestrian improvements (i.e. side walk repair, handicap ramps, curbing, signage, crosswalks, etc.) for school-aged children. Intersection improvements at the locations identified on Plate 19 should also include necessary improvements to pedestrian infrastructure as recommended in the study.

For all intersection locations shown on Plate 19, the following signing, striping and pavement marking improvements are recommended:

- ***Use of Thermoplastic parking markings and striping – to provide more visibility and more long-lasting markings and striping;***
- ***Provide 24” solid white stop bars or yield ‘bars’ (as appropriate) to reinforce stop controls;***
- ***Enlarge (or supplement) traffic control signage for better visibility and reinforcement of traffic control;***
- ***Evaluate existing regulatory traffic controls and operations at each intersection and modify (by ordinance) existing controls as necessary;***
- ***Install ‘highly visible’ cross walks, to reinforce pedestrian movement activity for motorist awareness and to encourage pedestrian crossing at designated locations;***
- ***Install advance warning pedestrian signage and/or pavement marking symbols, as appropriate, to enhance motorist awareness of pedestrian activity at intersection cross walks; and,***
- ***Install solid double yellow lines on EACH approach to an intersection to clearly identify opposing travel lanes; and,***

The above noted signage, striping and pavement marking improvements should be included as part of the Borough’s capital improvement program. All signage, and pavements markings and striping noted above should comply with the current Manual On Uniform Control Devices (MUTCD). Intersection geometry (curbing) improvements, including the above noted striping/signage treatments, are recommended for the following locations (see Plate 19):

- ***Grove Street and Prospect Place;***
- ***Washington Avenue and Myrtle Avenue;***
- ***Myrtle Avenue and Willow Avenue;***
- ***Willow Avenue and Orchard Avenue;***
- ***Willow Avenue and Geraud Avenue; and,***
- ***Rockview Avenue and Orchard Avenue.***

During the Basic Studies update, the intersection geometry at these intersections generally encourage free-flow traffic patterns due to ‘sweeping’ curb radii and/or poor approach geometry, that contributes to hazardous traffic conditions for conflicting vehicle movements

and pedestrian activity, and a general disregard of traffic control signage or pavement markings. While enforcement is an integral part of traffic control in any municipality, maintaining proper design and adequate signage, etc., is also necessary to reinforce safe travel patterns and driving habits.

To improve traffic conditions, and enhance traffic safety and pedestrian safety at the above noted locations, it is recommended that the Borough’s Capital Roadway Improvement Plan incorporate geometric improvements (i.e. modified curb radii treatments, approach alignments, etc.) to discourage ‘free-flow’ conditions and reduce travel speeds along these primary access roads. In concert with these geometric improvements, the previously noted signing, striping and pavement marking improvements should also be included.

Signalized Intersections

At present, all existing traffic signal installations in North Plainfield are maintained by Somerset County, including two existing signals on Somerset Street (Park Place/Jackson Avenue, Craig Place/Pearl Street). With the exception of the traffic signal at Craig Place/Pearl Street and Somerset Street, all signals conform to the Manual On Uniform Traffic Control Devices (MUTCD), including pedestrian actuated operation.

To allow for adequate and safe traffic control at all signal locations, it is recommended that all signals be maintained in a manner that provides for proper operation and adequate visibility for motor vehicle and pedestrian activity, including replacement of aging equipment and clearance of obstacles or vegetation that may inhibit visibility of signal head displays. It is recommended that the existing signal installation at Somerset Street and Craig Place/Pearl Street be fully upgraded to provide pedestrian actuated operation.

Somerset County has proposed the installation of a traffic signal installation at the intersection of Mountain Avenue (CR 642) and Leland Avenue. According to the Somerset County Capital Improvement Plan for Roads and Bridges, this improvement is slated to begin in the near future. ***It is recommended that North Plainfield encourage the County to complete this improvement in a timely manner to improve traffic conditions at this intersection, which accommodates a large amount of traffic activity through North Plainfield, between the City of Plainfield and Route U.S. 22.***

As noted during the Basic Studies update, it was observed that the visibility is limited for ‘right-turn-on-red’ movements on the southbound and eastbound approaches at the signalized intersection of West End Avenue and Greenbrook Road. It is therefore recommended that this intersection be evaluated by North Plainfield and Somerset County to remediate this condition, as necessary, or prohibit these movements.

Downtown Circulation – Somerset Street/Watchung Avenue

As revealed in the Basic Studies of the Master Plan update, travel conditions and pedestrian safety in the downtown area, and along Somerset Street and Watchung Avenue are greatly

affected by intersecting side-street turning movements and limited sight distance; on-street parking movements; and, 'standing' vehicles within areas designated for "No Parking." These conditions lead to a high degree of traffic accidents along the corridor and negatively impact pedestrian safety. Pedestrian safety is further impacted by a general lack of motorist awareness of pedestrian movements at crosswalk locations, poor visibility of crosswalk areas, and 'jay' walking movements away from designated crosswalk areas.

To address these traffic and pedestrian safety issues, and as part of the overall proposal to revitalize the downtown business area of North Plainfield, it is recommended that the following measures be taken to improve traffic flow, traffic safety and pedestrian safety:

- ***Improved pedestrian crosswalk demarcation (thermoplastic pavement striping and markings);***
- ***Improved advance warning pedestrian cross-walk signage at key locations on Somerset Street to advise motorists of pedestrian activity, particularly in the downtown area between the municipal boundary with Plainfield and Park Place/Jackson Avenue. Additional measures to be taken include the installation of pedestrian crosswalk bollards to warn motorists, per New Jersey state law, that vehicular traffic must stop for pedestrians within crosswalk areas;***
- ***Installation of 'bump-out' curb treatments (max. 4-feet) at appropriate locations along Somerset Street to improve sight distance along intersecting side streets and to improve pedestrian safety in the downtown business area – Bump-out treatments would reduce crossing distance for pedestrians and would also allow for clear demarcation of appropriate crossing locations, thereby minimizing unsafe 'J'-walking on Somerset Street. Bump-out treatments should be supplemented with lane edge striping to enhance pedestrian safety and visibility at side street intersections;***
- ***Along Somerset Street (in concert with bump-out treatments) and Watchung Avenue, side street sight distance conditions should be maintained by restricting on-street parking or standing on ALL corners of the intersection for a minimum distance of twenty-five (25) feet. On Somerset Street and Watchung Avenue, on-street parking or standing should be restricted for a minimum distance of fifty (50 feet) to the left of approaching side street traffic; and,***
- ***To reduce the potential for traffic backups on Somerset Street, striped bus 'turn-out' lanes at designated bus stops should be incorporated into proposed traffic circulation improvements.***

In concert with measures to improve traffic circulation and pedestrian safety along the Somerset Street/Watchung Avenue (Route 531), it is recommended that a corridor study be conducted in cooperation with Somerset County and Union County. This joint study could identify further measures that could be taken to improve traffic safety and circulation throughout the CR Route 531 between the City of Plainfield and the Route 22/Interstate 78 corridor, and particularly within the North Plainfield downtown business area.

Bikeways

A 'template' for the future provision of bicycle-safe routes in North Plainfield is presented on Plate 20. The bicycle routes shown are designated with the objective to connect residential neighborhoods with the downtown business area, municipal facilities, parks, public schools, and designated open space/conservation areas. The purpose of providing an integrated bikeway path system in North Plainfield, is to promote alternative modal transportation in the Borough in a safe and efficient manner.

As shown on Plate 20, 'Bikeway Compatible Roadways' designated by the Somerset County Circulation Plan ("Making Connections"), include Greenbrook Road, Mountain Avenue, Rock Avenue, Somerset Street, and Watchung Avenue. These county bikeway routes are supplemented with local bikeway routes that include low-level traffic roadways through existing residential neighborhoods, and also include local access roads to the downtown business area and to public facilities and schools.

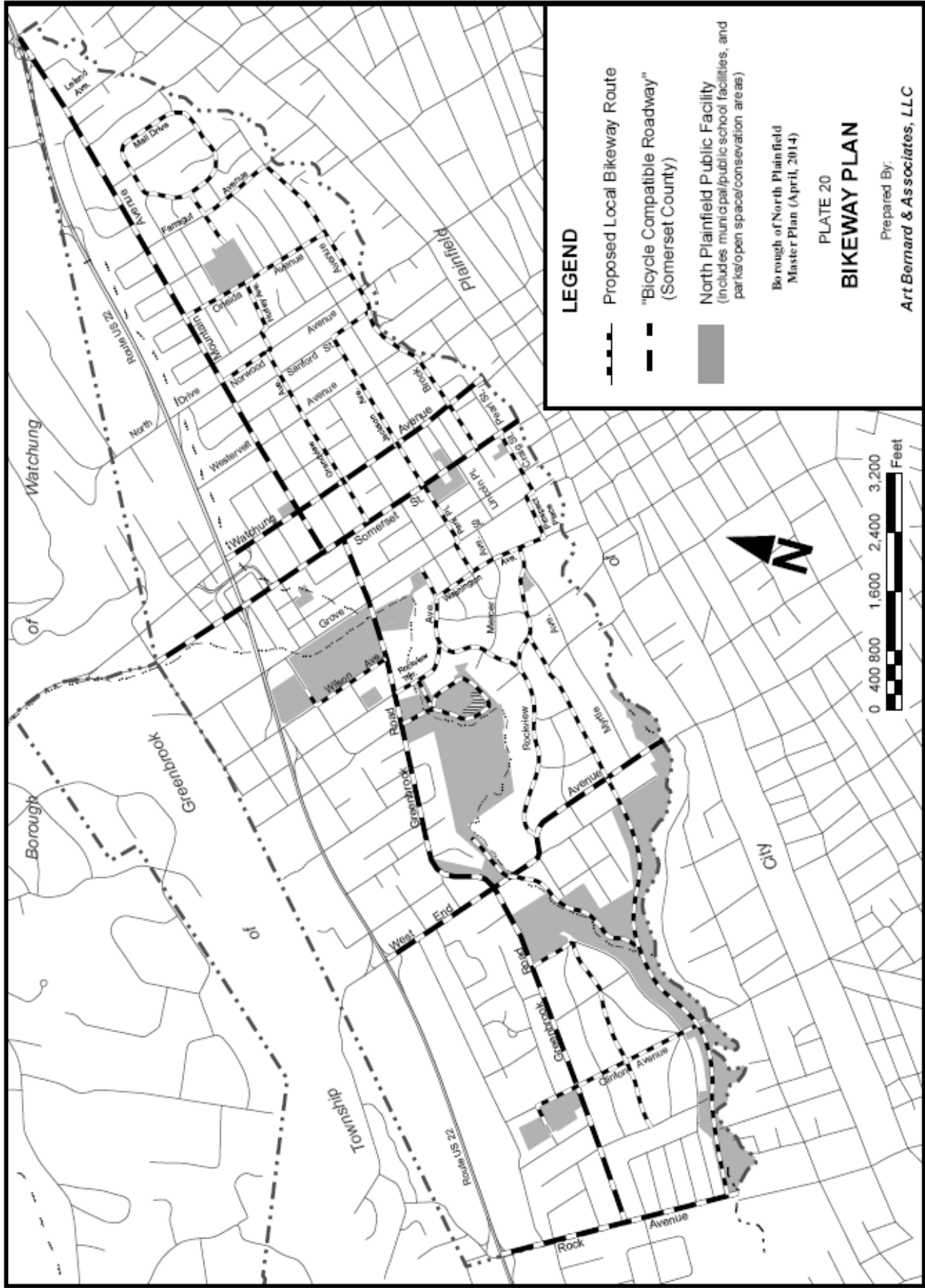
The proposed integrated bikeway path/route system may include either dedicated bike lanes on appropriate roads, or 'shared' bikeway routes. Dedicated bike lanes would consist of striped bike lanes within designated roadways (one side or both sides, provided exclusively for bicycle use). Shared bikeway routes concern use of designated existing low-speed roadways by motor vehicles and bicycles with appropriate directional/traffic control signage and pavement markings/symbols.

Dedicated bike lanes should only be provided on roadways with sufficient width to accommodate vehicular traffic flow (one-way or two-way) and a minimum six (6) foot-wide bicycle lane. Designated bike lanes may be located within striped roadway shoulder(s) but should not be located within areas permitting on-street parking (modification of existing on-street parking areas may be required to provide dedicated bike lanes on certain roads).

Shared bikeway on existing roads should only be considered on very-low traffic volume residential roads with or without on-street parking, which may be modified as conditions warrant. The maximum posted speed limit on local roadways with shared bikeway routes should not exceed twenty-five (25) miles per hour. It is essential that sufficient signage, striping and/or pavement marking symbols are provided to clearly indicate shared use of the roadway.

Except for the provision of shared bikeway/pedestrian trails within designated open space/conservation areas or recreational areas (6-foot width), pedestrian sidewalks within residential areas or the downtown business area should not be included as part of the shared bikeway path system to avoid conflicting use of sidewalk areas meant for pedestrian use only.

To compliment an integrated bikeway route system, the recommended intersection improvements shown on Plate 19 (Intersection Improvement Plan) should be fully implemented as part of a comprehensive approach to improve vehicular and pedestrian



LEGEND

— Proposed Local Bikeway Route

- - - "Bicycle Compatible Roadway"
(Somerset County)

■ North Plainfield Public Facility
(includes municipal/public school facilities, and parks/open space/conservation areas)

Borough of North Plainfield
Master Plan (April, 2014)

PLATE 20
BIKEWAY PLAN

Prepared By:
Art Bernard & Associates, LLC



traffic circulation; thereby minimizing traffic conflicts and providing safe, efficient alternative transportation modal systems.

Traffic Calming

Travel speeds through the downtown business area and surrounding residential neighborhoods in North Plainfield remains a critical concern in terms of pedestrian and motor vehicle safety, and quality of life. While certain efforts have been contemplated to reduce travel speeds on certain thoroughfares in the Borough, by and large, police enforcement and efforts to enhance motorist awareness have been the primary tools in combating cut-through travel and excessive speeds through residential neighborhoods.

Along with the various intersection geometry, and signage and stripping improvements proposed in the Circulation Plan to reduce adverse conditions resulting from ‘cut-through’ traffic, it is recommended that consideration be given to the implementation of vertical and/or horizontal traffic calming measures to reduce travels speeds through residential neighborhoods. Vertical speed calming measures include speed humps, textured/raised crosswalks, or raised intersections, while horizontal measures may include curb extensions (bumpouts), gateway treatments (textured surfaces or physical identification), or raised median treatments (mid-block and/or at intersections). Implementation of traffic calming measures should include streets in vicinity of existing public and private schools, major thoroughfares providing access to the central business area, and high-volume residential thoroughfares carrying a high degree of thru-traffic or exhibit excessive speeds.

The downtown area exhibits high levels of pedestrian activity and vehicular movements (i.e. side street turning movements, on-street parking movements, etc.), which increases traffic conflicts along Somerset Street and also adversely affects pedestrian safety. While the existing textured crosswalks along Somerset Street contribute to traffic calming in the business area, motorist awareness of crosswalk areas is poor due to insufficient advance warning signage and poor visibility of designated crosswalks.

Recommended improvements to the Somerset Street corridor noted in the Circulation Plan (i.e. bumpouts; improved pedestrian crossing signage and visibility; extended prohibition of parking at street corners; advance warning signage; roadways crosswalk bollards; etc.) will serve to reduce travel speeds along Somerset Street, thereby improving traffic circulation and enhancing pedestrian safety. Bumpout treatments (including extended ‘No Parking’ areas at side streets intersection) along Somerset Street will increase pedestrian and motorist awareness of designated crosswalk areas and improve sight distance at side street intersections. This should serve to reduce ‘jay’-walking movements at mid-block locations. Increased visibility of crosswalk areas and improved signage (i.e. advance warning signs and crosswalk bollards) will enhance motorist awareness of pedestrian movements and serve to reduce travel speeds through the business corridor.

Route 22 Access and Traffic Circulation

The New Jersey Department of Transportation recently began improvements to various signalized intersections in North Plainfield along Route US 22. These efforts are part of an overall effort to improve traffic flow along the Route 22 commuter corridor from Interstate 287 (Bridgewater Township) to Mountainside Borough in Union County. The improvements include the installation of an Intelligent Transportation System (ITS) to improve traffic conditions during peak periods, and will also include pedestrian and lane geometry improvements at signalized intersection locations. ITS improvements include: 1) the installation of travel time systems (TTS) and Dynamic Message Signs (DMS) to advise motorists of travel conditions and/or approximate travel times to key commuter destinations; 2) Camera Surveillance Systems (CSS) and wireless/fiber-optic communication links with the State Traffic Management Center in Woodbridge, NJ, to monitor and control traffic flow during peak periods; and 3) interconnection of all traffic signal installations along the highway segment to provide optimum progression through the corridor and ease traffic congestion.

To further improve circulation along Route 22, it is recommended that the Borough continue to encourage property owners/developers along the highway to improve or reconfigure driveway access in accordance with the NJDOT Highway Access Management Code, as amended. These efforts should be effectuated through the site plan process or through discussions with interested parties. Recommended measures include lot consolidation and/or shared highway access; alternate access to side streets where feasible and practical; modification to access driveway spacing distance; channelization of driveway traffic flow where warranted; and, reduction of the number of access driveways as permitted by the Access Code.

State efforts to install pedestrian sidewalks along Route 22 should be encouraged to promote alternative transportation modes in the Borough. These efforts should compliment pedestrian access to local public streets along Route 22, and should also integrate pedestrian access to the various multi-family residential developments along the north side of Route 22.

Planning Board discussions during the Basic Studies update raised concern for roadway conditions and maintenance (accumulation of refuse and poor road surface conditions) along Route 22, particularly in vicinity of the Route 531 overpass (Watchung Avenue/Somerset Street). While the Route 22 highway segment in North Plainfield is under jurisdiction of New Jersey, the Borough should seek roadway/infrastructure improvements along the highway as necessary to ensure safe travel conditions along the highway and at local street access points. Existing conditions at the Route 531 overpass should be evaluated as part of a broader effort to examine traffic circulation and patterns along the Route 531 corridor between Union County (City of Plainfield) and Interstate Route 78.

COMMUNITY FACILITIES AND SERVICES PLAN

The Community Facilities Plan for North Plainfield Borough is presented on Plate 21. The Plan illustrates existing and proposed public facilities, public schools, emergency fire and rescue services, and other community facilities. The Community Facilities Plan illustrates the location of existing and proposed facilities in the Borough. Exhibit 32 lists the various community facilities, including the location (block & lot) and existing/proposed lot area of each facility. Specific proposals for the Borough's public facilities and services, determined through the basic studies update as well as 'new' initiatives are discussed as follows:

Municipal Center (M-1)

The North Plainfield municipal offices are located on the northwest corner of the Somerset Street/Lincoln Place intersection (Block 93, lots 6.01 & 7). Having recently been renovated and expanded, the existing municipal building facility is adequate to meet the needs of the community in terms of the provision of necessary services and Borough-sponsored programs. At present, this facility contains all municipal administrative offices, excluding the Borough recreation department, which were recently relocated within a renovated building located at Stony Brook Field. The municipal building facility continues to include the Borough's fire department, which was also expanded as part of the overall building renovation. An additional structure included as part of the municipal building site includes a former dwelling (Lot 7), which is presently utilized for storage. On-site parking for municipal employees, municipal vehicles and police emergency vehicles is also located on-site, with access from Lincoln Place and Vine Street.

To provide for future expansion of the municipal building site, it is recommended that two adjacent parcels within Block 93 (Lots 8 & 10) be acquired by North Plainfield. Purchase of these parcels and removal of the existing on-site structures would allow for the expansion and improvement of the existing on-site parking area, and may also allow for increased metered public parking at the Race Street public parking lot (across from Town hall on Somerset Street) where several existing dedicated municipal employee/vehicle spaces are located.

As noted above, Lot 7 of Block 93 is currently utilized by the Borough for file/records storage. It is recommended that consideration be given to the possibility of razing the existing structure on Lot 7 for additional on-site municipal parking, or to accommodate the expansion of the municipal building in the future, as may be needed. Expansion of the municipal building would allow for additional administrative/office space, and needed storage area for municipal records/files and emergency equipment (police & fire protection apparatus), identified as lacking in the Basic Studies update.

Emergency - Police, Fire & Rescue (M-1)

The Borough's Police Department and Fire Department are located within the Municipal Building. The space occupied by each department was renovated and expanded as part of the overall renovation to town hall several years ago. At present, the facilities are considered adequate to meet the needs of the community in terms of police protection and emergency services. As noted above, the Basic Studies update reported a lack of adequate storage space for emergency equipment and apparatus within the expanded fire department garage area. Depending upon the disposition of the existing building structure on Lot 7 adjacent to town hall (owned by the Borough), consideration should be given to expanding storage area for the police and fire department with any future expansion of the existing municipal building and firehouse.

Vermeule Community Center (M-2)

The Vermeule Community Center and Vermeule Mansion facility (Block 199.01, Lot 1) are located in the 'west end' portion of North Plainfield. These two buildings provide adequate meeting space and amenities to meet the needs of the community. In addition to these structures, two ancillary buildings are located on the property, which provide additional storage and administrative space (former recreation department offices). No changes are recommended to the community center, Vermeule mansion, or other on-site structures. No recommendations concerning these structures are made at this time.

Library (M-3)

The existing North Plainfield Branch Library (Block 131, Lot 25) is a relatively modern facility, which is adequate to meet the needs of the Borough's residents. The facility is operated as part of the Somerset County Library system, while the building grounds of the facility are owned and operated by North Plainfield. No changes to this cooperative arrangement are recommended. As noted in the Basic Studies update, this facility lacks adequate handicap access, particularly the lower-level, which currently only allows limited handicap access from the exterior in the rear of the building. ***It is therefore recommended that North Plainfield seek to upgrade the building to provide full interior access for all persons, including the provision of a handicap-accessible elevator.***

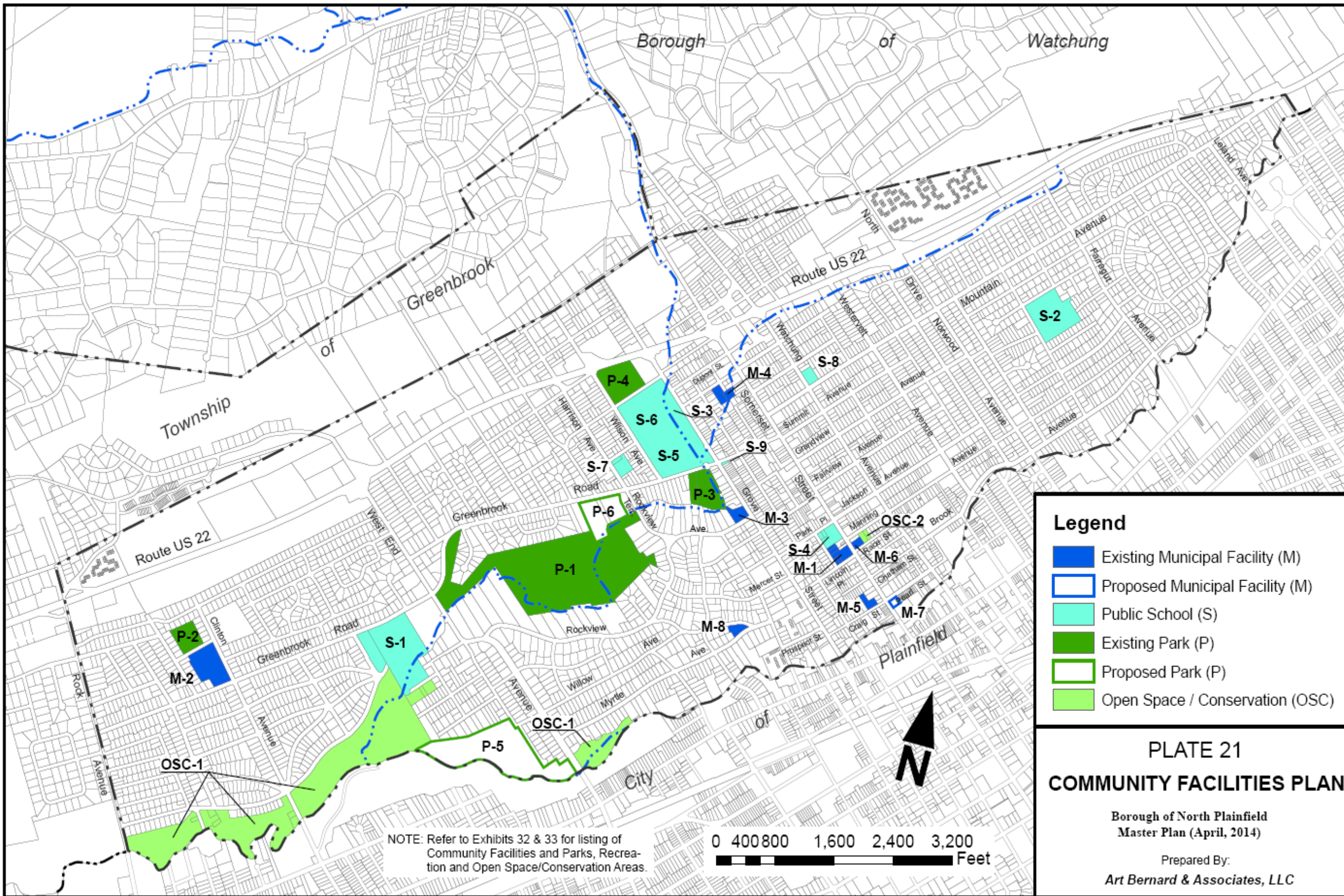
Municipal Garage (M-4)

With the recent expansion of the Borough's existing public works maintenance garage site (Block 103, Lots 9 & 42) to ± 1 acre, including use of the adjacent former Somerset County Road Department garage, the municipal garage site is adequate in size to meet the community's public works needs (road/utility maintenance, public facilities maintenance, snow removal, bulk-trash removal, emergency services, etc.). ***It is recommended that the overall facility and grounds, including on-site activities, be properly screened and buffered from adjacent residential zones and uses. Buffering measures should include adequate setback of on-site storage of department vehicles and equipment to minimize adverse noise or obnoxious fumes***

Exhibit 32
Community Facilities
Borough of North Plainfield
 April, 2014

Plan No.	LOCATION / FACILITY	STREET LOCATION (ACCESS)	BLOCK / LOT(s)	AREA (acres)	
				Existing	Proposed
Municipal Facilities:					
M-1	Municipal Building & Firehouse	Somerset Street & Lincoln Place	93 / 6.01, 7, 8, 9 & 10	0.97	1.19*
M-2	Vermeule Community Center & Mansion	Greenbrook Road & Clinton Avenue	199.01 / 1	4.27	---
M-3	North Plainfield Branch Library	Grove Street & Rockview Avenue	131 / 25	0.86	---
M-4	Municipal Garage	Dupont Street & Steiner Place	103 / 9 & 42	1.02	---
M-5	Craig Street Public Parking Lot	Craig Street	92 / 15	0.38	---
M-6	Race Street Public Parking Lot	Race Street	82 / 2	0.39	---
M-7	Pearl Street Parking Lot/Public Use	Pearl Street	88/6	---	0.26
M-8	Veteran Monument Park	Willow Avenue & Myrtle Avenue	144 / 5	0.58	---
				*total area	
Public School Facilities:					
S-1	West End Elementary School	Greenbrook Road	165.01 / 1 172 / 1	13.83	---
S-2	East End Elementary School	Oneida Avenue	15.01 / 1	6.10	---
S-3	Stony Brook Elementary School	Grove Street	130 / 1.01 (portion)	± 3.0	---
S-4	Somerset School	Somerset Street & Park Place	93 / 3.01	1.45	---
S-5	North Plainfield Middle School	Wilson Avenue & Greenbrook Road	130 / 1.01 (portion)	} ± 16.84	---
S-6	North Plainfield High School	Wilson Avenue & Greenbrook Road	130 / 1.01 (portion)		---
S-7	Harrison School Administrative Offices	Harrison Street & Chestnut Street	129 / 16 & 17	1.21	---
S-8	Board of Education Administrative Offices (former Watchung School)	Mountain Avenue	55 / 3	0.69	---
S-9	Board of Education Auxilliary Offices (District Operations Building)	Greenbrook Road	101 / 54	0.08	---

Reference: Plate 21 - Community Facilities Plan



resulting from on-site operation of machinery. Screening measures should include suitably high/dense landscape plantings and fence(s) to reduce visual impact of the overall site and associated activities.

Public Parking (M-5, M-6, M-7)

No changes are recommended for the Craig Place public parking lot (M-5: Block 92, Lot 15). At present this public parking facility includes metered public parking and public permit parking spaces.

With the proposed expansion of municipal employee/vehicle parking adjacent to the municipal building in Block 93, it is recommended that existing spaces dedicated for municipal employee/municipal vehicle parking in the Race Street public parking lot (M-6: Block 82, Lot 2) be re-designated for metered public parking. Both municipal parking lots are well suited by virtue of their proximity to the downtown area and ease of access, and will also facilitate rehabilitation and/or redevelopment in the downtown area.

A future municipal parking lot/public use facility is proposed at the intersection of Somerset Street and Pearl Street (M-7: Block 88, Lot 6). This 0.26 acre parcel is located along the northbound side of Somerset Street in the downtown business area. It is proposed that this parcel be developed for public parking to serve the downtown business area, and also for public use/open space area (i.e. expanded brick-paver sidewalk area with benches and landscape trees and/or shrubs, etc.) adjacent to the sidewalk area along Somerset Street. If feasible, it is recommended that ingress/egress to this proposed parking lot be provided from Pearl Street to avoid added vehicular turning movements along Somerset Street in the downtown area.

Recreation Department (P-3)

The existing structure on the Stony Brook Field site (Block 131, Lot 13.03) is now occupied by the administrative offices of the Borough's Recreation Department. This recently renovated building is adequate to meet the needs of the department, which administers a wide-range of recreational activities for all Borough residents. No changes are recommended at this time.

Public Schools (S-1 through S-9)

The existing public school facilities in North Plainfield are adequate to meet the needs of the Borough school-aged children and projected enrollments. Each school facility has been renovated and/or expanded over time to modernize the building facilities and to meet the current technological needs of the students and faculty. Given the limited amount of vacant developable land in North Plainfield, the Borough's public schools properties contribute greatly to the community in terms of 'usable' space and recreational opportunity, including provision of the many recreational programs offered through the Borough Recreation Department. No new

school buildings or plans for expansion of schools or Board of Education facilities are proposed at this time.

Solid Waste & Recycling

Collection of solid waste for all residential and non-residential uses in North Plainfield is conducted by private contractor, which is contracted directly with property owners. The Borough arranges through private contract for the collection of brush, leaves, etc. for all borough residents. The Borough provides for the collection of bulk items (i.e. appliances, furniture, etc.). Curbside collection of recyclable materials is conducted by Somerset County. The County recycling center is located in Bridgewater Township, which is open to the public on monthly on a prescheduled basis. The present collection of solid waste and recyclable materials is adequate to meet the anticipated needs of the community, and no recommendations are made at this time.

Community Facilities Awareness

The varied municipal facilities in North Plainfield offer a wide range of programs and services to the Borough's residents and business community. These facilities include municipal buildings and department operations, public schools, parks and recreation, and open space/conservation area. ***To enhance community awareness and foster convenient access to these facilities, it is recommended that the Borough install directional signage at various locations in the Borough to guide residents and workers. Directional signage should be placed along key travel routes in North Plainfield, including along Somerset Street, and along various primary travel routes and bikeway routes illustrated on Plates 19 and 20, respectively. For ease of visibility and recognition, directional signage should be 'thematically' designed to provide a visual connection to North Plainfield public facilities.***

PARKS, RECREATION & OPEN SPACE/CONSERVATION PLAN

The Parks, Recreation and Open Space/Conservation Plan for North Plainfield Borough is presented on Plate 22. The Plan illustrates existing and proposed parks in the Borough, areas proposed for open space/conservation, and stream corridor protection areas. Exhibit 33 lists the various recreational, open space, and conservation areas in North Plainfield, including the location (block & lot) and existing/proposed lot area for each area. Specific proposals for the Borough's parks and open space/conservation areas are discussed as follows:

Parks & Recreation (P-1 through p-6)

Green Acres Park (P-1: Block 154.01, Lot 1) continues to serve as the Borough's largest (and oldest) improved park facility. The park is centrally located, with primary access to the 'improved' portion of the park from Rockview Terrace, and secondary access and parking in vicinity of West End Avenue and Greenbrook Road. Although most of this recreational area is undeveloped, the park offers a focal point to the community for passive and active recreational opportunity. ***It is recommended that the facilities at Green Acres Park continue to be upgraded and expanded to meet the needs of the Borough.***

As shown on the Parks, Recreation and Open Space/Conservation Plan, a proposed park area (P-6) is shown adjacent to Stony Brook/Green Acres Park, along the south side of Greenbrook Road. This area is approximately 5.8 acres, and includes two land parcels (Block 154.01, Lot 18 and Block 154.02, Lot 50) and unimproved right-of-way (Jefferson Avenue). It is recommended that the Borough acquire these land parcels in an effort to expand active recreational opportunity in the Borough, including the provision of additional recreational fields. It is recommended that recreational development of this parcel should include a pedestrian/bikeway bridge across Stony Brook to provide access with Green Acres Park, to the south.

An additional proposed park facility (P-5) is shown along Green Brook in the southwest portion of the Borough. This parcel is identified as Block 170.02, Lot 15, and has total area of 16.80 acres. The parcel is owned by North Plainfield and is currently leased for recreational use by the Union County Park Commission. The property is moderately active with unimproved access and parking, with cleared portions serving as recreational fields. It is recommended that upon termination of the lease agreement (approx. 10 years), North Plainfield should regain control of the property for future active recreational use. Depending upon environmental constraints of the site, it is recommended that recreational facilities include improved access and parking area, recreational fields, playground area/tot-lot, and a walking trail (inclusive of the proposed "Green Brook Walk" trail noted in this Plan).

Several existing parks are shown on the Plan, including Vermeule Park (P-2), Stony Brook Field/Fromm Field (P-3), and Upper Kraushe Field (P-4). Vermeule Park is currently developed with

a playground area, sheltered picnic area and on-site parking. No recommendations are proposed for this facility as this time. Upper Kraushe Field is owned by the North Plainfield Board of Education and has been upgraded with artificial turf, and has a regulation football field and two baseball fields. This facility is utilized for the high school and middle school athletic programs and is also available for use by North Plainfield school-aged children and residents through the various programs administered through the Borough Recreation program. ***No recommendations are proposed for this facility at this time, except for the Land Use Plan proposal to allow for commercial use of the field for local advertising.***

Stony Brook Field/Fromm Field (P-3) is utilized by both the Borough and the Board of Education for recreational use. This parcel is partly owned by the Borough (Block, Lot 13.03) and the Board of Education (Block 131, Lot 14). An existing structure on-site was recently renovated for administrative use by the Borough's recreation department. Stony Brook Field includes a little league-sized baseball field, while Fromm Field includes an unimproved field hockey field. No specific recommendations for this recreational area are proposed at this time.

At present, the Borough and North Plainfield Board of Education provide a variety of recreational facilities for school-aged children and Borough residents at the various public school locations and local Borough-owned parks. Based upon the Basic Studies update, the provision of recreational opportunity between the Borough and the public school district was determined to be adequate to meet the needs of the community, although it was noted that older recreational facilities and fields exhibit wear and are in need of increased maintenance or upgrade in some instances. ***It is recommended that the Borough and North Plainfield Board of Education continue to maintain and upgrade facilities to meet the recreational needs of the community, including the provision of additional tennis courts and upgraded baseball fields, as identified in Exhibit 31 (Basic Studies update).***

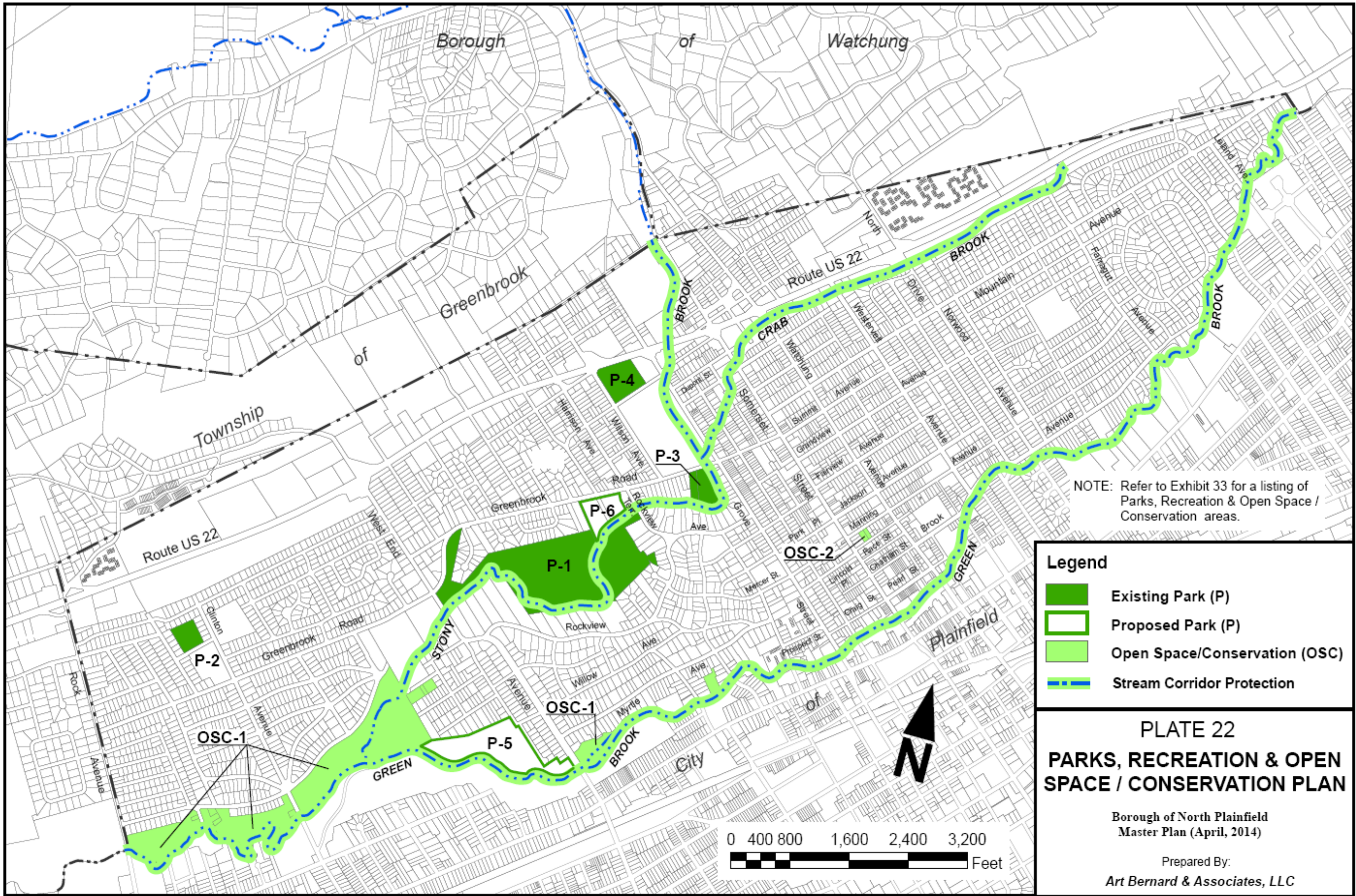
Open Space / Conservation (OSC-1 & OSC-2)

An extensive area of proposed passive recreational space (OSC-1) is shown on the Plan along the northerly side of Green Brook, in vicinity of Rock Avenue and West End Avenue. The area, as shown on Exhibit 33, has a total land area of approximately 47.72 acres. This open space area is located within the Green Brook floodplain and exhibits a mature over-story with dense understory shrub growth throughout the stream corridor. Vegetation on the various parcels is severely overgrown with little or no maintenance in recent years. In order to create viable passive recreational opportunity to the Borough's residents, it is recommended that the Borough remove fallen trees and clear overgrown vegetation to establish the "Green Brook Walk" trail. This trail could also supplement the Borough's proposed integrated bikeway path system (see Circulation and Transportation Plan element), including a possible connection along the Stony Brook stream corridor with Green Acres Park. It should be noted that the aforementioned Union County-leased recreational parcel (P-5) is located within this proposed passive recreation area, and is proposed to be integrated with the open space/conservation area along Green Brook.

Exhibit 33
Municipal Parks, Recreation and Open Space
 Borough of North Plainfield
 April, 2014

Plan No.	LOCATION / FACILITY	STREET LOCATION (ACCESS)	BLOCK / LOT(s)	AREA (acres)	
				Existing	Proposed
Parks:					
P-1	Green Acres Park	Rockview Terrace & Greenbrook Road	154.01 / 1	59.97	---
P-2	Vermeule Park	Vermeule Place	199.02 / 14	2.50	---
P-3	Stony Brook Field / Fromm Field*	Greenbrook Road	131 / 13 & 14	4.49	---
*Block 131, Lot (Fromm Field) owned by North Plainfield Board of Education (3.5 acres).					
P-4	Upper Krausche Field (High School)	Walnut Street	123 / 2	5.00	---
P-5	Proposed Park	Willow Avenue	170.02 / 15	---	± 16.80
P-6	Proposed Green Brook Park	Greenbrook Road	154.01 / 18 154.02 / 50	---	± 5.80
				71.96	± 22.60
Open Space & Conservation:					
OSC-1	Green Brook Preserve	Rock Avenue, Clinton Avenue, Parkview Avenue & West End Avenue	147 / 1 166 / 10, 11 & 11.01 171 / 1 185 / 1 & 2 186 / 1 187 / 1, 2 & 3 189 / 1 & 14	---	± 8.12 ± 1.36 ± 24.16 ± 0.38 ± 6.00 ± 1.05 ± 6.65
OSC-2	Downtown Plaza (Open Space)	Race Street / Manning Avenue	82 / 3 & 4	---	± 47.72 ± 0.40
				---	± 48.12

Reference: Parks, Recreation & Open Space/Conservation Plan



A second proposed open space area (OSC-2) is proposed in the downtown business area between Race Street and Manning Avenue (Block 82, Lots 3 & 4). This parcel is approximately 0.40 acres in area, and is located directly east of the existing Race Street public parking lot (Lot 2). It is proposed that this land be acquired by the Borough and developed as a public open space 'plaza' to accommodate public gatherings and to serve civic events, as part of the broader plan to rehabilitate North Plainfield's downtown business area. The downtown plaza area should be designed to provide an opportunity for passive recreational opportunity, including public bench seating, ornamental tree and shrub plantings, and decorative ground surface features. Additional facilities should also include receptacles for refuse and recyclables, and a suitable bicycle rack.

Stream Corridor Protection

In addition to the various existing and proposed parkland and open space/conservation areas in the Borough, the Parks, Recreation and Open Space/Conservation Plan illustrates Stream Corridor Protection along three main stream tributaries in North Plainfield. These stream corridors include Green Brook, Stony Brook and Crab Brook. With near full development of lands along these stream corridors, it is imperative that efforts continue to stabilize stream channels to limit erosion and maintain storm water quality within the Green Brook sub-basin.

Along with culvert improvements by Somerset County at various locations throughout the Borough, NJDOT and the U.S. Army Corp of Engineers have recommended stream channel improvements along Crab Brook and Green Brook, respectively, to stabilize these existing drainage streams and to minimize adverse flooding conditions during periods of heavy precipitation. ***It is recommended these measures be initiated to ensure the quality and stability of these stream corridors, and in particular, to facilitate passive recreational use of proposed open space/conservation of lands in the Borough.***

Community Gardens

It is recommended that North Plainfield seek to establish community garden areas to serve Borough residents. These areas may be created on private or public property, and may be managed by local civic groups and/or the Borough on public land, or private land by lease agreement. While it is noted in the Basic Studies update that limited suitable private vacant land is available in the Borough for such use, it is recommended that the Borough investigate the feasibility of creating community garden areas on public grounds or in established park land area(s). The creation of community gardens for school-aged children and families may also be feasible on public school grounds, which could be administered directly by individual public school(s) within the school district.

UTILITIES PLAN

Adequate utilities are essential in serving existing and future residential and non-residential development. Utility systems are also essential to the protection of environmentally sensitive areas including floodways, wetland areas, and surface water bodies and ground water aquifers. The Utilities Plan for North Plainfield presents an overview of utility systems and infrastructure as inventoried in the Basic Studies update, including adequacy of utility systems to meet future development and redevelopment in the Borough.

Public Water Supply

Potable water supply to North Plainfield is provided by the New Jersey American Water Company (NJAWC) through the “Raritan System” Franchise. The Raritan System includes a combination of ground water wells and surface water sources within the Raritan Basin and within the Raritan River and Millstone River watersheds, respectively. The surface water supply is also augmented by the Spruce Run Reservoir and Round Valley Reservoir. Potable water is also purchased from the East Windsor MUA and from Newark Water Company, during peak seasonal demand periods. Public water supply to the Borough is adequate to meet existing and future demands, and the NJAWC presently has no plans to increase capacity of the water supply to North Plainfield.

In order to adequately maintain and upgrade the public water system for potable water and for emergency fire-fighting purposes, it is recommended that the North Plainfield Capital Roadway Improvement Plan continue to coordinate water supply infrastructure improvements with ongoing roadway improvements and resurfacing projects. This is necessary to ensure an adequate potable water supply to residents and businesses, including adequate fire protection. Water quality testing is conducted by NJAWC on an ongoing basis, with published reports issued annually in accordance with New Jersey State Law. As noted in the Basic Studies update, water quality standards are met or exceeded for all naturally occurring or human-caused substances and contaminants measured. Certain secondary contaminants have been found to be above recommended maximum levels in past testing results, however such contaminants typically are not considered toxic to humans. It is recommended that secondary contaminant levels continued to be monitored by North Plainfield and the NJAWC in order to ascertain whether any adverse health impacts from prolonged contamination may be averted.

Sanitary Sewer Service

The Borough of North Plainfield is a member of the Plainfield Area Regional Sewer Authority (PARSA). The regional authority includes Dunellen Borough, Fanwood Borough, Green Brook Township, North Plainfield Borough, Scotch Plains Borough, and South Plainfield Borough, and the City of Plainfield. PARSA controls the overall system, including monitoring of the system's operation on a daily basis and during peak periods. The system has an operating capacity of approximately 14 million gallons-per-day (gpd) under normal conditions and a peak operating capacity (during severe weather events) roughly 2.5 times normal capacity. Under the contract with PARSA, North Plainfield is responsible for the maintenance and operation of the system within the Borough.

Although a new interceptor line was constructed in the 1970's, and additional repairs have been made to certain segments of the system, continual aging of sanitary sewer infrastructure in the Borough has resulted in increased instances of storm water infiltration and sewerage surcharges (overflow) during peak weather events. This condition has resulted in increasing degradation of the overall system and overuse of sanitary sewer infrastructure (lines, pumping facilities, etc.). Maintenance concerns have also resulted from poor mapping of the system and poor emergency response to system surcharges.

In response to an evaluation of the sanitary sewer system and assessment of maintenance procedures conducted by NJDEP in 2011, the Borough recently proceeded with a comprehensive survey and GIS mapping of the entire sanitary system in the Borough, including identification of system deficiencies. This system-wide evaluation and detailed mapping may identify segments or components of the system requiring repair or replacement, and will also aid in the emergency response to system surcharges during major weather events.

It is recommended that the Borough continue to monitor the operation of the sanitary sewer system with PARSA and utilize the updated sewer mapping/assessment in an effort to identify portions of the system which may require improvement or replacement. Such improvements would improve the integrity of the system, thereby extending system life and reducing operating costs. Renovations and improvements to the sanitary sewer system in North Plainfield should be implemented through the Borough's capital improvement program and also as part of new development in the Borough and redevelopment/rehabilitation within the downtown area. Improvements within improved street rights-of-way should be coordinated with the ongoing capital roadway improvement program.

Storm Water Drainage & Flood Control

The entire Borough is served by an integrated storm water collection system which collects storm water runoff from impervious surface such as streets, and buildings and parking lots associated with residential and non-residential properties. Surface water runoff is also collected naturally by several drainage ways and streams, including Green Brook, located along the southerly boundary of the Borough, and Stony Brook and Crab Brook, which traverse the central portion of the

Borough. Stony Brook and Crab Brook are tributaries to the Green Brook (Green Brook sub-basin), which lies within the Raritan River Basin.

The Borough's Stormwater Management Plan, Adopted in December, 2006, regulates surface water runoff and surface water quality for existing and proposed land use development. The Plan addresses all aspects of stormwater runoff quantity and quality in terms of protecting surface water and groundwater systems, including existing drainage infrastructure and development, and natural drainage features (i.e. streams, intermittent streams, etc.). Implementing ordinances recommended in the Stormwater Management Plan were incorporated within the Land Development Ordinances of North Plainfield. The following goals are established in the Stormwater Management Plan:

- reduce flood damage, including damage to life and property;
- minimize, to the extent practical, any increase in stormwater runoff from any new development;
- reduce soil erosion from any development or construction project;
- assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures;
- maintain groundwater recharge;
- prevent, to the greatest extent feasible, an increase in non-point pollution;
- maintain the integrity of stream channels for their biological functions, as well as for drainage;
- 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; and,
- protect public safety through the proper design and operation of stormwater basins and management facilities.

Recommended ordinance revisions in the Stormwater Management Plan have been incorporated into the implementing ordinances of the Borough, including nonstructural stormwater management strategies and well head protection. In addition, a mitigation Plan is included in the Stormwater Management Plan for development and redevelopment projects seeking variance or exemption from the Stormwater Management Plan or the New Jersey Stormwater Management Rules (N.J.A.C. 7:8).

Additional measures to control stormwater runoff quantity and quality are also recommended in the Stormwater Management Plan, including minimization of 'turf lawn' areas; protection of vegetation; parking area and sidewalk (impervious surface) design criteria; and, creation of vegetative open (drainage) channels. While these measures were not implemented with the adoption of the Borough's 2006 Stormwater Management Plan, consideration should be given in future development or redevelopment to these design criteria in an effort to further reduce

stormwater runoff from impervious surface areas and/or improve surface water and ground water quality.

Measures to improve existing drainage stream channels in the Borough have been recommended by the Army Corp of Engineers along Green Brook and Stony Brook, and by NJDOT, along the Crab Brook. Improvements proposed by NJDOT for Crab Brook along Route 22 include channel deepening and widening and drainage infrastructure improvements to the highway. Improvements recommended by the US Army Corps of Engineers along the Green Brook and Stony Brook to alleviate flooding problems have yet to be implemented. It is recommended that these efforts to improve existing stream channels and alleviate adverse flooding conditions be encouraged by the Borough.

Innovative site design features which may be implemented by the Borough, residents and business owners to employ “best management practices” to improve water quality and control surface water runoff include the following techniques:

- Plantings trees and shrubs to promote ground water infiltration and reduce surface water runoff;
- Installation of gravel trenches along impervious surface areas (driveways, sidewalks, patios, etc.) to collect stormwater and filter surface water runoff into the soil;
- Connecting rain spouts from building roofs to “dry wells” to promote groundwater recharge;
- Utilize rain barrels to capture rainwater for reuse in gardens;
- Re-seeding and/or re-sodding of thinly-grassed areas or bare patches to reduce water runoff and soil erosion, and improve groundwater recharge;
- Creation of ‘rain gardens’ to promote infiltration; and,
- Minimize the use of impervious surfaces (i.e. concrete, bituminous concrete, exterior artificial turf, etc.) by using wood or synthetic deck materials and brick paver/flat stones patio materials which allow infiltration of rain water, particularly if placed over well-drained soil or sand/gravel beds;
- Install bio-drainage channels in appropriate areas adjacent to roadways, sidewalks or other impervious areas to reduce surface water runoff into drainage infrastructure, and to improve surface water quality while facilitating infiltration of groundwater.

NORTH PLAINFIELD 2014 MASTER PLAN POLICY STATEMENT

The North Plainfield 2014 Master Plan is consistent with the New Jersey State Development and Redevelopment Plan, which designates the Borough of North Plainfield as a “Designated Town” in a “Metropolitan Planning Area”, including goals and objectives for new development and redevelopment/rehabilitation; land use development proposals; compliance with state mandated housing requirements; provision for adequate multi-modal transportation facilities; community facilities and services; recreation and open space conservation; and, protection of environmentally sensitive lands. The Master Plan is also consistent with Somerset County development plans, including roadway/infrastructure improvements within the Borough; incorporation of sustainable land use concepts and practices; and, preservation of environmentally sensitive stream corridors. The Master Plan is also compatible with municipal land use plans and regulations of the municipalities surrounding the Borough, including provision of a variety of residential and commercial uses which foster a an interdependent community while preserving environmentally sensitive areas and features.

The Borough of North Plainfield is in compliance with the requirements of the Somerset County Solid Waste Management Plan, which specifies appropriate measures for disposal of solid waste and source separation and recycling of materials in accordance with the Statewide Source Separation and Mandatory Recycling Act.

Attachment A

The Green Building and Environmental Sustainability Element of the Master Plan

Borough of North Plainfield, Somerset County



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Green Building and Environmental Sustainability Element

Borough of North Plainfield, Somerset County

Adopted by the Planning Board on K

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INTRODUCTION

In an age of acute awareness of the earth's fragility, limited resources and the social consequences associated with climate change, the Borough of North Plainfield has developed this Green Buildings and Environmental Sustainability Element of its Master plan to demonstrate its commitment to environmental stewardship and sustainability.

This Green Buildings and Environmental Sustainability Element has been prepared in accordance with the Municipal Land Use Law (MLUL), N.J.S.A. 40:55D-28, which was amended in August of 2008 to include such elements in the list of permitted Master Plan Elements. The MLUL describes the Green Buildings and Environmental Sustainability Element as:

"A green buildings and environmental sustainability plan element, which shall provide for, encourage, and promote the efficient use of natural resources and the installation and usage of renewable energy systems; consider the impact of buildings on the local, regional and global environment; allow ecosystems to function naturally; conserve and reuse water; treat storm water on-site; and optimize climatic conditions through site orientation and design."

This Green Buildings and Environmental Sustainability Element adopts a comprehensive approach of promoting conservation that extends from educational campaigns aimed at citizens to promoting a green collar economy

to encouraging sustainable land use forms. This Element, like all Master Plan Elements, is intended to guide land use decisions and provides the basis for ordinances addressing sustainability and land use issues. It is important to note that a Master Plan cannot include requirements or mandatory actions; instead it provides support for ordinances that fulfill that role in municipal planning.

The Borough's Green Buildings and Environmental Sustainability Element offers strategies, policies and sample implementation tools that will aid the Borough in becoming more sustainable. The recommendations present a multi-pronged approach for the Borough, which requires the Borough to be agile in its approach to advancing sustainability and highlights the various roles that the Borough plays in public life, including regulator, program developer and administrator.



DEFINING SUSTAINABILITY

There is no one universal definition of sustainable or sustainability. For the purposes of this Element, the Borough will defer to the World Commission on Environment and Development's 1987 Brundtland Report's definition of sustainability, which defines sustainability as the ability to meet "the needs of the present without compromising the ability of the future generations to meet their own needs." This definition of sustainability embraces a holistic view of sustainability, which attends to the often times competing interests of the environment, economic feasibility and social equity.

The ability to meet today's needs without jeopardizing the ability of future generations to meet their own needs.

Given the broad nature of this definition of sustainability and the importance of the Element meeting the needs and concerns of the Borough residents, the project team worked with the North Plainfield Green Team to identify the Borough's sustainability priorities. During the project team's meeting with the Green Team in November 2011, the Green Team established its priority areas of focus for the Element, which included adaptive reuse and sustainable land use, green economic development, and sustainable education and outreach. The project team worked

with the Green Team to refine its definition of each priority area and to develop goals, objectives and strategies for achieving measurable progress in each of the priority areas. While the three priority areas do not represent a comprehensive climate action plan, they set forth a broad framework for the Borough to move forward in becoming a more sustainable municipality. It is also important to note that although this Element is focused on the priority areas identified by the Green Team, this Element is just one of many elements of the Master Plan. The Borough's Master Plan has been developed with sustainability as a guiding principle that is incorporated into its proposed land use and circulation recommendations.



SUSTAINABLE LAND USE

While the Municipal Land Use Law (N.J.S.A. 40:55D-28(19)b) requires all municipal master plans to have a land use element, there has been a disconnect between the development of municipal land use elements and the advancement of sustainable land use development patterns, with many land use elements promoting auto-dependent growth patterns. The recent attention on the impact of climate change has spurred municipalities to reconsider the importance of sustainable land use policies.

Sustainable land use policies are defined as policies aimed at balancing the interests of environmental preservation and restoration, economic vitality and the liveability of a community. Sustainable land use policies consider the promotion of compact development, walkability, connectivity, energy diversification and conservation, habitat preservation and restoration, food security, sustainable water sources, and housing affordability. Through adopting sustainable land use policies, communities can increase transportation choice, reduce vehicle miles traveled, protect threatened species, reduce urban sprawl, encourage healthy communities and decrease greenhouse gas emissions.

A compact and densely developed community, the Borough of North Plainfield has many attributes of a sustainable form. The borough is serviced by New Jersey Transit bus lines that connect to various points in the region, including New York City and Newark. It is densely developed and features a compact

downtown business district. The community offers a diversity of housing options, including apartments located in mixed use structures, single family homes of various sizes and multi-family apartment complexes.

This element reviews sustainable land use practices within the context of North Plainfield and sets forth recommendations to minimize the environmental impact of development within the Borough. This section of the Green Buildings and Environmental Sustainability Element should be read in the conjunction with the Borough's Land Use Element and Circulation Element.



There are many benefits to open space, including providing recreational amenities for the community, reducing the impervious cover, and reducing the urban heat island effect.

Goals, Objectives, Strategies

This Element sets forth recommendations on how North Plainfield can:

1. Reduce vehicle miles traveled for residents and businesses in North Plainfield;
2. Preserve the architectural heritage of the community while simultaneously reducing the embodied energy associated with growth in the Borough;
3. Encourage the preservation and restoration of green space and habitat; and,
4. Encourage energy diversification and energy conservation through land use policies.

GOAL A: REDUCE VEHICLE MILES TRAVELED	
OBJECTIVES	STRATEGIES
Promote alternative forms of transportation	<ol style="list-style-type: none"> 1. Promote walkable communities 2. Sponsor municipal walking circles, groups of individuals that walk together for exercise 3. Require new development applications to provide bike parking 4. Provide bike parking at community facilities 5. Install signage that encourages drivers and cyclists to share the road 6. Partner to install adequate bus shelters
Encourage the development of an economy that enables residents to meet their needs for goods and services via local means	<ol style="list-style-type: none"> 1. Support local businesses and encourage further local economic development (See section on green economy for specific recommendations) 2. Review and amend local ordinances to permit home occupations in all districts 3. Revise local ordinances to allow community gardens to satisfy open space requirements 4. Revise local ordinances to permit food production in the front and side yards in all districts 5. Incorporate fruit trees and other edible plantings into neighborhood landscaping 6. Support the development of community gardens on abandoned vacant lots



Second Time Around, a vintage store, and the Farmers' Market provide residents with easy access to sustainable products.

GOAL B: PRESERVE ARCHITECTURAL HERITAGE AND CONSERVE NATURAL RESOURCES	
OBJECTIVES	STRATEGIES
Promote adaptive reuse and development on previously developed sites and brownfields	<ol style="list-style-type: none"> 1. Complete a study of North Plainfield's building fabric to identify opportunities for reuse 2. Work with existing property owners of underutilized structures to explore potential opportunities for the buildings 3. Adopt an adaptive reuse policy that streamlines the permitting process
GOAL C: REDUCE STORMWATER RUNOFF	
OBJECTIVES	STRATEGIES
Reduce stormwater runoff by increasing the amount of vegetative cover and open space	<ol style="list-style-type: none"> 1. Continue to move forward on the development of an environmental resources inventory 2. Require or grant an incentive to projects to utilize storm water management strategies that provide increased vegetation, such as flow through rain-water containers, vegetative medians, rain gardens and green roofs 3. Require all roofs in new development applications to have either a green or reflective roof 4. Work with the shade tree advisory board to develop a shade tree coverage goal for the Borough, and to identify opportunities for new street tree plantings and vacant tree pits that can be replanted 5. Pursue erosion control opportunities through the NRCS/Somerset County Extension Service 6. Work with Union and Somerset counties to implement the Upper Basin portion of the Green Brook Flood Control Plan
Reduce stormwater runoff by limiting the amount of impervious coverage	<ol style="list-style-type: none"> 1. Evaluate the local ordinances to determine if there are opportunities to limit the amount of impervious coverage on new development applications



GOAL D: ENERGY DIVERSIFICATION AND ENERGY CONSERVATION	
OBJECTIVES	STRATEGIES
Encourage residents and property owners in the Borough to conserve energy	<ol style="list-style-type: none"> 1. Encourage the orientation of a project to maximize passive solar strategies (when possible buildings should be elongated along the east/west access) unless it conflicts with strategies to enhance walkability, such as designing the front entry to face the street.
Facilitate the adoption and utilization of renewable forms of energy within the Borough	<ol style="list-style-type: none"> 1. Permit solar energy as an accessory use in all zoning districts and limiting the design standards associated with screening solar panels 2. Encourage the use of renewable energy technologies, such as geothermal and wind where appropriate 3. Protect solar access through both the orientation of new projects and planting requirements

Reduce Vehicle Miles Traveled

According to the Environmental Protection Agency, 27% of all greenhouse gas emissions in the United States in 2010 came from transportation, with passenger cars accounting for 43% of all transportation related emissions. Although 70% of residents report that they commute to work by driving alone and 67.5% of households in North Plainfield have two or more cars, the Borough is well-positioned to transform its car culture into one that is friendlier to alternative forms of transportation, including walking and biking.

The Borough’s compact community, gridded street network with numerous points of connectivity, and existing mass transit access provide a basis for land use policies that strive to reduce the total vehicle miles traveled. It is recommended that the Borough build on its existing assets by supporting policies and practices that encourage alternative forms of transportation and the development of local services and amenities within walking and biking distance to residential communities.

Provision of Local Services and Amenities

One strategy for reducing vehicle miles traveled is reducing the distance to services and amenities. It is recommended that North Plainfield promote local services and amenities within close proximity to residential neighborhoods and the downtown business districts. By creating a local market for goods and services, residents can either travel shorter distances or rely on alternative forms of transportation, such as walking and biking, to meet their daily needs.

North Plainfield has a well established downtown business district; however, many residents get in their cars and drive down Route 22 to frequent big box retail developments. While not all purchases can be made in the downtown business district, the Borough may wish to consider working with local businesses to identify gaps in services and develop a business recruitment strategy to help fill those needs. Moreover, the Borough

should evaluate its local ordinances to remove potential obstacles to home occupations, which may serve a vital role in meeting the needs of the community.

The Borough should also consider building on the success of the farmers' market by encouraging local food production within North Plainfield. It is recommended that the Borough:

- Revise the local ordinances to allow community gardens to satisfy open space requirements;
- Revise the local ordinances to permit food production in the front and side yards in all districts;
- Incorporate fruit trees and other edible plantings into neighborhood landscaping; and,
- Support the development of community gardens on abandoned vacant lots.

Alternative forms of transportation

North Plainfield is a compact community with enough density to support three New Jersey transit bus lines, including one that goes to New York City. The Borough is also in close proximity to three stops on the Raritan Valley Railroad (Netherwood, Plainfield and Dunellen). While the community is well designed for alternative forms of transportation, it is recommended that the Borough consider the following strategies to increase the use of public transit, walking and biking:

- Creating walkable communities by installing new crosswalks and repainting existing crosswalks. (See the green economy section of this Element for additional recommendations for establishing walkable communities);

- Sponsoring municipal walking circles that encourage community residents of all ages to "Get Active" in North Plainfield;
- Requiring new developments to provide a percentage of bike parking based on the number of full time equivalent employees anticipated;
- Providing bike parking at community facilities, including parks, municipal buildings, museums and libraries;
- Partner with the school district and the library to offer bike safety courses (See Appendix A for a sample curriculum);



The North Plainfield branch of the County library welcomes bicyclists by offering bike parking for its patrons.



Located on Somerset Street, the Farmers' Market provides residents the opportunity to support local farms and have quick and easy access to farm fresh produce.

- Installing signage that encourages drivers and cyclists to share the road, including the installation of sharrows (lanes marked with arrows that instruct drivers to share the road) on existing traffic lanes;
- Working with New Jersey Transit to align the connection schedules between buses and regional rail to optimize service; and,
- Working with New Jersey Transit to provide adequate bus shelters for bus stops in North Plainfield.

Preserve Architectural Heritage and Resources

North Plainfield does not have a substantial amount of vacant land or green space within its boundaries. As North Plainfield considers its future, it is recommended that the Borough channel future growth through the adaptive reuse of its existing buildings and redevelopment of brownfields and previously developed, underutilized sites.

North Plainfield's rich building fabric shares the story of the Borough's heritage and historic development. Adaptive reuse offers North Plainfield the opportunity to preserve its existing architecture while giving new life to selected structures. Adaptive reuse is known as the process of repurposing old structures for uses other than those that were originally intended while still maintaining the character of the building.

In addition to preserving the heritage and character of the Borough, adaptive reuse proves to be a sound environmental approach to development. The process of repurposing a building significantly reduces the amount of landfilled waste associated with

a new building project. Moreover, the embodied energy and raw material use of the project also decreases. It is estimated that adaptive reuse allows for the conservation of 95% of the project's embodied energy, which is the sum of all energy required to produce the project, including the energy used to create the materials.

North Plainfield has a number of potential opportunities for adaptive reuse, including the Somerset Plumbing Company building



The owner of the Somerset Plumbing Company building is exploring alternative uses for the structure, including the potential use as an artist space.



The former trophy factory is located close to the heart of downtown and has a sizeable building footprint.

on Somerset Street and the former trophy factory located on Pearl Street.

Somerset Plumbing Company – A large industrial building with commercial space fronting on Somerset, the Somerset Plumbing Company presents an opportunity to reignite the vibrancy of the business district’s main thoroughfare. The owner of the building is currently evaluating the potential for repurposing the building and is exploring the potential of transforming the space into an arts center.

Former trophy factory – This large industrial building is located along the edge of the downtown business district and is adjacent to a cemetery. The facility is deteriorating; however, there is life within the building, as a cabinet and architectural millwork firm is occupying the structure. Given the scope of the building’s footprint, this project has the ability to provide the density needed to serve as an anchor for the downtown.

It is recommended that the Borough further evaluate the potential for the adaptive reuse of these structures by conducting an in depth study of their potential for redevelopment and reuse. Moreover, the Borough may want to consider adopting an adaptive reuse ordinance, which is aimed at reducing the red tape associated with these types of projects. See Appendix B for a sample ordinance.

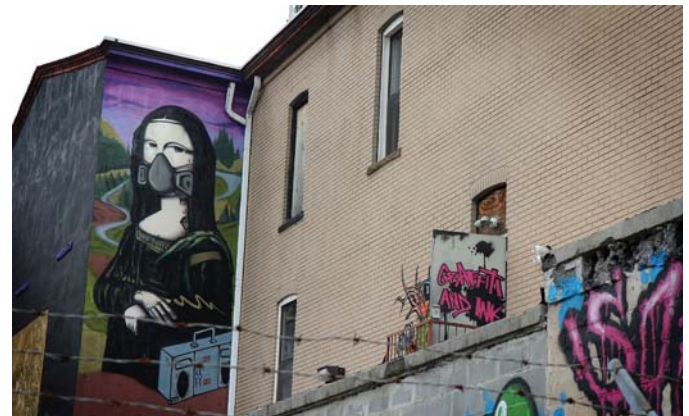
Reduce Stormwater Runoff

Much of North Plainfield has already been developed, leaving the Borough with a few infill opportunities and limited open space. As North Plainfield looks for opportunities to redefine itself via redevelopment, it is important that the Borough consider strategies for

increasing the amount of its open space and decreasing impervious coverage.

Green space offers numerous benefits, including recreational opportunities, assistance in managing storm water, combating the urban heat island affect and providing habitat for native species. Given North Plainfield’s dense fabric, the Borough will need to rely on innovative methods for adding to its vegetative and open space. Potential strategies for increasing the amount green space in the Borough include:

- Completing an environmental resources inventory;



The owner of Somerset Plumbing has already commissioned street artists to install a public art piece on the Somerset Plumbing building.



This vegetative median in Washington State helps to calm traffic and mitigate storm water runoff.

- Requiring or granting an incentive to projects to utilize storm water management strategies that provide increased vegetation, such as flow through rain-water containers, vegetative medians, rain gardens and green roofs;
- Requiring all roofs in all new development applications to have either a green or reflective roof;
- Pursuing erosion control opportunities through the NRCS/Somerset County Extension Service;
- Working with Union and Somerset counties to implement the Upper Basin portion of the Green Brook Flood Control Plan; and,
- Working with the shade tree advisory board to develop a shade tree coverage goal for the Borough, and to identify opportunities for new street tree plantings and vacant tree pits that can be replanted.

In addition to adding new vegetative space, it is recommended that the Borough work to minimize the amount of impervious coverage by minimizing the number of surface parking lots in the Borough and imposing limits on the amount of impervious coverage permitted in new development applications.

Energy Conservation and Energy Diversification

Sustainable land use and energy usage are inextricably tied, as the way we use and produce energy for buildings has a direct impact on climate change. According to the US Green Building Council, buildings account for 72% of electricity use, 39% of energy use and 38% of all carbon dioxide emissions in the United States. As North Plainfield looks

to become more sustainable, it is essential that the Borough looks at ways to promote energy conservation and integrate renewable energy sources into its energy mix.

North Plainfield has already expressed its commitment to energy conservation. The Borough conducted energy audits on its existing municipal buildings, which highlighted strategies for the Borough to conserve energy and increase the structures' energy efficiency. The Borough can increase the scope of its impact by amending its land use ordinance to promote alternative energy and energy conservation techniques. North Plainfield should consider amending its land use ordinance to:

- Permit solar energy as an accessory use in all zoning districts and limiting the design standards associated with screening solar panels;
- Encourage the use of renewable energy technologies, such as geothermal and wind where appropriate;
- Protect solar access through both the orientation of new projects and planting requirements; and,
- Encourage the orientation of a project to maximize passive solar strategies (when possible buildings should be elongated along the east/west access) unless it conflicts with strategies to enhance walkability, such as designing the front entry to face the street.

Buildings account for:

- 72% of electricity use in US
- 39% of energy use in US
- 38% of all carbon dioxide emissions in the US

- US Green Building Council

GREEN ECONOMY

Although the Great Recession was said to have come to an end, high levels of unemployment continue to plague the United States. North Plainfield is not immune to this trend. While the Borough has experienced a 10.4% growth in its labor force between 2000 and 2010, it has witnessed a steady decline in jobs located within the Borough. According to the New Jersey Department of Labor and Workforce Development, the number of jobs located in North Plainfield declined by 21.5% between 2005 and 2009, from 3,826 to 3,000. In 2010, the unemployment rate for Borough residents was 9.8%, compared to the County's unemployment rate of 7.4%. Between 2000 and 2010, the unemployment rate in North Plainfield increased by 194%.

Recognizing this challenge, the Borough has made economic development a priority. The administration established the Economic Development Committee to advise the administration on attracting employment opportunities within the municipal borders. The Economic Development Committee gives a voice to existing businesses, operates a newsletter and shares information within the community. Members of the local business community have also taken proactive steps. For example, leaders in the business community have reached out to existing businesses and have revived the local business association.

In the initial meetings about the Green Buildings and Environmental Sustainability Element of the Master Plan, the Green

Team identified the development of a green economy as a priority. While there are many definitions, a green economy is an economic development strategy that stimulates economic activity, creates quality jobs that can support families, and contributes to the restoration of the environment. Examples of green businesses include restorative landscape design firms, farm to table restaurants, energy auditing and weatherization companies, organic coffee shops, bicycle stores, urban agriculture, and more.

The green economy is a growing sector of the US economy. According to the Pew Charitable Trust, there were 770,000 jobs generated by nearly 70,000 businesses identified as part of the green economy in 2009. The US Conference of Mayors estimates that by 2038, 4.2 million jobs will be created in the green sector, representing 10% of all new job growth.

The Green Team recognized the ability of a green economic development strategy to



The green economy is extremely diverse, ranging from renewable fuels to energy efficiency improvements to sustainable agriculture.

generate employment opportunities, foster sustainability within North Plainfield and provide residents with the resources and services necessary to undertake their own sustainable lifestyle change. This Element will set forth green economic development strategies that build on existing assets within North Plainfield, support local businesses, and reduce the environmental impact of the Borough.

Goals, Objectives, Strategies

This Element outlines recommendations on how North Plainfield can:

1. Support and encourage a thriving downtown that promotes walkability and the reduction of vehicle miles traveled per trip;
2. Promote green workforce development opportunities; and,
3. Provide resources and support for existing businesses to become more sustainable.

GOAL A: CREATE A THRIVING DOWNTOWN	
OBJECTIVES	STRATEGIES
Create a walkable community	<ol style="list-style-type: none"> 1. Focus on clean streets by providing regularly scheduled street cleaning services, locating trash and recycling facilities at the end of each block, and enforcing a no littering policy 2. Make it safe for pedestrians by integrating highly visible crosswalks, timed signals and coordinating signage at each intersection 3. Implement traffic calming measures along Somerset Street to slow the pace of cars exiting off of Route 22 4. Revisit the previously administered façade improvement program, which provided matching funds for businesses interested in revamping the facades of their building 5. Provide pedestrian amenities that encourage people to spend time downtown, including street furniture, public art and water fountain facilities 6. Complete a tree-pit inventory and replant trees in empty tree pits in the downtown 7. Provide amenities for cyclists, including regularly spaced bike racks within the right of way 8. Implement a sign ordinance that provides guidance on the scale and character of the signs permitted within the downtown business district 9. Amend the zoning ordinance to require that new buildings or projects with major renovations to locate the principle functional entry on the front façade facing the street, and limit the amount of street frontage of a project that faces garages or service bay openings

GOAL A: CREATE A THRIVING DOWNTOWN	
OBJECTIVES	STRATEGIES
Define a niche market for the downtown	<ol style="list-style-type: none"> 1. Install visible flags and banners that emphasize the Borough's vision for the downtown 2. Develop programming in the downtown that builds off the vision 3. Explore the use of temporary installations, such as a temporary art installation or a pop-up community garden, to create new energy in the downtown
Support existing downtown businesses	<ol style="list-style-type: none"> 1. Establish a business development program that provides technical assistance in navigating licensing, permitting and other regulatory processes 2. Develop a resources center located in the municipal building on existing funding opportunities available at the state, federal and local levels for small businesses 3. Provide specialized trainings on a variety of topics, including the niche vision of the downtown, small business best practices, or changes in the tax code 4. Organize collective advertising efforts in which local businesses jointly participate to maximize the reach of the advertising campaign or promotion
Attract new businesses to the main street	<ol style="list-style-type: none"> 1. Develop a business recruitment plan to attract new businesses to the area
GOAL B: GREEN EXISTING BUSINESSES	
OBJECTIVES	STRATEGIES
Support businesses in their efforts to green their operations	<ol style="list-style-type: none"> 1. Create a central resource location for businesses that are interested in making their operation more sustainable 2. Organize seminars on sustainable business practices that draw on existing sustainability experts in the area 3. Support a group of businesses owners that meet to discuss ways to make their businesses more sustainable
Make sustainability valuable to businesses	<ol style="list-style-type: none"> 1. A green business program that certifies businesses with green practices 2. Highlighting an outstanding green business in its monthly newsletter and/or on its website 3. Using of social media to help spread the word of new sustainable practices adopted by local businesses 4. Inclusion of sustainability values and practices as a consideration in the Borough's procurement process

GOAL C: DEVELOP A GREEN WORKFORCE	
OBJECTIVES	STRATEGIES
Prepare residents to become members of the green economy	<ol style="list-style-type: none"> 1. Invest in green job training programs 2. Develop partnership with existing workforce development programs, colleges and universities

Create a Thriving Downtown

A densely populated municipality, North Plainfield is designed with a dense, mixed use business district that is adjacent to large residential communities. While the downtown offers amenities and services within walking and biking distance, residents frequently opt to travel by car on Route 22 to nearby restaurants and stores. The revitalization of the Borough’s downtown presents an opportunity to reduce the vehicle miles traveled by residents, support local businesses, and to promote healthy lifestyles. Through investing in its downtown, the Borough could develop a vibrant center that attracts local residents on foot and bike, generates jobs within the Borough and makes North Plainfield a regional destination.

Create a Walkable Community

A lively downtown requires people on the street, traveling in and out of local businesses, chatting with neighbors and creating a sense of community. It is recommended that North Plainfield enhance the character and walkability of the streets in its downtown business district to encourage pedestrian and bicycle trips. The Borough may want to consider implementing the following strategies aimed at making the downtown business district more pedestrian friendly:

- Focus on clean streets by providing regu-

larly scheduled street cleaning services, locating trash and recycling facilities at the end of each block, and enforcing a no littering policy;

- Make it safe for pedestrians by integrating highly visible crosswalks, timed signals and coordinating signage at each intersection;
- Implement traffic calming measures along Somerset Street to slow the pace of cars exiting off of Route 22. Measures could include vegetated curb bump outs or vegetated medians, both of which assist in mitigating stormwater runoff;
- Revisit the previously administered



Lined with street trees, Somerset Street in North Plainfield is home to a large number of local businesses; however, the downtown is dominated by cars and is not pedestrian friendly. Creating a walkable community will benefit the local businesses, improve the health of residents and will reduce the amount of greenhouse gas emissions produced.

façade improvement program, which provided matching funds for businesses interested in revamping the facades of their building;

- Provide pedestrian amenities that encourage people to spend time downtown, including street furniture, public art and water fountain facilities;
- Complete a tree-pit inventory and re-plant trees in empty tree pits in the downtown;
- Provide amenities for cyclists, including regularly spaced bike racks within the right of way;
- Implement a sign ordinance that provides guidance on the scale and character of the signs permitted within the downtown business district;
- Amend the zoning ordinance to require that new buildings or projects with major renovations locate the principle functional entry on the front façade facing the street, and limit the street frontage of garages or service bay openings.

Define a Niche Vision for the Downtown

When traveling on Somerset Street, it is unclear to an untrained observer when North Plainfield transitions into Plainfield. It is recommended that North Plainfield work with community stakeholders to develop a niche vision for downtown North Plainfield that gives the Borough a distinct brand. This vision will help establish North Plainfield as a destination within the region and distinguish it from its adjoining communities. It is recommended that the Borough work in a collaborative process to develop this vision, reaching out to property owners, developers, business owners, Borough administration, civic associations, non-profits and residents to be a part of the process. The Borough may

want to consider completing a market survey to gauge what people are interested in seeing in the downtown and what already exists.

Following the development of the downtown vision, it is recommended that Borough undertake a branding campaign with the newly defined niche market. Potential elements of a branding campaign could include:

- Visible flags and banners that hang from lamp posts or street posts that demark the boundary of North Plainfield and emphasize the Borough’s vision for the downtown;
- Establish a welcoming sign or banner that serves as a gateway and alerts visitors that they are entering North Plainfield;
- Programming in the downtown that builds off the vision. Depending on the brand of the downtown, programming could range from events like “Taste of North Plainfield” to “Dollar Stroll Nights”, in which businesses coordinate to have sidewalk sales of a highlighted item for a dollar. It is important that the Borough partner with stakeholders to continue programming, as planned activities and events keep the downtown lively; and,



Dollar Stroll night on Baltimore Avenue in Philadelphia draws large crowds to the neighborhood commercial corridor in West Philadelphia.

- Temporary installations, such as a temporary art installation or a pop-up community garden, to create new energy in the downtown. The benefits of temporary installations are that they are typically low-cost and are by nature not permanent.

Support Downtown Businesses

Downtown North Plainfield is home to a variety of small businesses that provide needed amenities and services, offer employment opportunities to residents, and invest in the community. These businesses serve as the building block for the future of the downtown. It is recommended that North Plainfield work with partners, such as the Economic Development Committee and the newly formed business association, to develop the infrastructure needed to support existing businesses located in the downtown. The Borough may want to consider partnering to provide the following amenities to existing businesses:

- A business development program that provides technical assistance in navigating licensing, permitting and other regulatory processes;
- A resources center located in the municipal building or in the library on existing funding opportunities available at the state, federal and local levels for small businesses. The Small Business Administration may have a number of these resources available for Borough distribution;
- Specialized trainings on a variety of topics, including the niche vision of the downtown, small business best practices, or changes in the tax code. The Borough may want to consider reaching out to local colleges and universities with

entrepreneurship centers for available trainings and resources;

- Collective advertising efforts in which local businesses jointly participate to maximize the reach of the advertising campaign or promotion. An example of a collective advertising effort is a “Restaurant Week” during which participating restaurants agree to run a dining special during the same week.

Develop Business Recruitment Strategies

Downtown North Plainfield has a wealth of existing businesses; however, there continue to be vacant or underutilized storefronts in the downtown. Upon defining its vision for the downtown, the Borough should develop a business recruitment strategy. The Borough could charge its Economic Development Committee with the responsibility of creating a business recruitment plan, which includes pertinent demographics on North Plainfield, a list of available commercial space, information about its downtown economic development strategies, a list of its accomplishments and information about



Park-lets are temporary pop up parks located in a parking spot. The park-lets transform otherwise unnoticed spaces into temporary “places”. This park-let provides additional seating for an often crowded cafe.

any existing financing or funding opportunities. The EDC may want to provide this information on the website. Additionally, the EDC could review the defined brand for the downtown and work to identify businesses that may complement the downtown vision.

Green Existing Businesses

The transformation to a Sustainable North Plainfield will require every stakeholder group in the municipality to adopt more environmentally practices, including the business community. Through providing existing businesses with the necessary technical assistance and incentives, North Plainfield can entice the business community to become an integral partner in the greening of the Borough.

Green Business Development

The Borough will need the business community to be a strong partner in the effort to make North Plainfield more sustainable. While local businesses may be willing and interested in contributing to the Borough's greening efforts, they may not have a strong

knowledge base about sustainability and green practices. It is recommended that the Borough partner with the Economic Development Committee and the business association to provide businesses with the technical assistance they require to green their operations, including:

- Provision of central resources for businesses that are interested in making their operation more sustainable. The resources could include information on incentive programs and government tax breaks for investments in sustainable technology, such as solar panels or energy star rated appliances;
- Seminars on sustainable business practices that draw on existing sustainable experts in the area, such as those located in Rutgers University's Center for Urban Environmental Sustainability and Center for Urban Entrepreneurship and Economic Development; and,
- Resources to support a group of businesses owners that meet to discuss ways to make their businesses more sustainable. Resources could include meeting space, space on the Borough's web page to communicate details, and administra-



Local businesses are the foundation of North Plainfield's downtown economy.

tive assistance from the Economic Development Committee.

Give Sustainability Value

Businesses that are considering greening their operations may weigh the costs and benefits of “going green”. They will likely have to dedicate time and resources to developing new practices, training staff and upgrading their infrastructure. It is recommended that the Borough implement programs that enhance the value of sustainability for businesses, including:

- A green business program that certifies businesses with green practices. This program would provide qualifying businesses with the advantage of being a recognized green business, which would serve as an additional marketing tool. See Appendix C for a model business certification program;
- Highlighting an outstanding green business in its monthly newsletter and/or on its website; and,
- Using social media to help spread the word of new sustainable practices adopt-

ed by local businesses. This will help the business with marketing and it will also educate residents on sustainable practices; and,

- Inclusion of sustainability values and practices as a consideration in the Borough’s procurement process.

Green Workforce Development

The green economy presents an opportunity for North Plainfield to create new jobs in a growing economic sector. Appendix D delineates types of green jobs available. Through investing in training programs for green collar jobs, the administration of North Plainfield would prepare the labor force for the growing green market. The Borough may want to consider partnering with the County to achieve this objective.

North Plainfield has a number of competitive advantages associated with greening its workforce. The Borough is located within ten miles of eight colleges and universities, including Rutgers University, Farleigh Dickinson University, Raritan Valley Community



[From Left to Right] Green job training programs provide living wages while advancing environmental sustainability goals. Raritan Valley Community College features an area of study in green project management.

College and Devry Institute. Many of these institutions feature courses of study that are focused on the green sector aimed at preparing students for green collar jobs. For example, the Raritan Valley Community College has a green jobs training program that includes areas of study in green project management, solar panel installation, energy auditing, and green building and green landscaping. The local branch of Devry Institute is home to the Center for Innovation, Creativity and Entrepreneurship. In addition to courses of study, the local colleges and universities also have centers dedicated to sustainable research, including Kean University's Center for Sustainable Science and Farleigh Dickinson's Institute for Sustainable Enterprise. This places North Plainfield at the locus of advancements in sustainability practice.

It is recommended that the Borough work with the County's vocational schools to amend its curriculum to offer education in green construction, which is a skill set that is in great demand. The County could integrate the Green Advantage coursework, a certification program for green construction workers, into its curriculum. In addition to the vocational schools, the North Plainfield public schools may also want to consider highlighting potential green career paths, as a method of exposing students to the growing industry.

Through investigating these partnerships and additions to the existing core curriculum, North Plainfield would establish itself as a leader in skilled labor for the green economy. This would serve as a competitive advantage in attracting green firms, and would provide the Borough residents with opportunities to be a part of the rapidly growing green economy.



Skilled and trained professionals will be required to maintain and operate emerging green technologies, such as solar installations and electric cars.



Green jobs vary from design build firms that specialize in green construction elements such as green roofs.



Green jobs can be found in small businesses that reinforce sustainability values, like bicycle shops and organic cafes.

EDUCATION AND OUTREACH

While the effects of climate change and the need for energy independence have moved to a prominent place on the national agenda, individuals remain unclear about their role in combating global warming and fostering a more sustainable environment. In this Element, the Borough of North Plainfield recognizes the need to invest in a public education and outreach campaign about sustainable lifestyle choices in order to empower residents to take an active role in creating a greener North Plainfield.

Creating a sustainable North Plainfield will require a culture shift, as a greener North Plainfield cannot be achieved without wide spread participation. A public education and outreach campaign presents the Borough with an opportunity to expand the depth and breadth of the sustainability movement in the community, and serves as a vehicle for developing new environmental leaders.

North Plainfield has an existing commitment to environmental activism. The Borough has established a formalized infrastructure for community input on sustainability by forming its Green Team, which is comprised of residents, small business owners and Borough officials. Since its inception, the Green Team has championed sustainability at the local government and individual levels, with a major victory coming when the Borough achieved Bronze certification in the Sustainable Jersey program.

In addition to the Green Team, the Borough

has formed an environmental commission and a shade tree advisory board. Moreover, the North Plainfield School District has also taken preliminary steps to incorporate sustainability into its curriculum. With the existing support of the aforementioned stakeholder groups, the Borough is well positioned to advance a sustainability education and outreach campaign that energizes the community around the vision of a greener North Plainfield and fosters new environmental leaders.

Goals, Objectives, Strategies

This Element sets forth recommendations on how North Plainfield can:

1. Raise awareness among residents, businesses and Borough staff about sustainability and the positive effect North Plainfield can play in combating climate change; and,
2. Foster sustainable behavior change among residents, businesses and Borough staff.

GOAL A: RAISE AWARENESS ABOUT SUSTAINABILITY AND THE POSITIVE ROLE THE BOROUGH CAN PLAY IN SLOWING CLIMATE CHANGE

OBJECTIVES	STRATEGIES
Establish the Borough as a leader in sustainable practices by serving as a positive example in greening its facilities, policies and its culture	<ol style="list-style-type: none"> 1. Conduct a greenhouse gas inventory for the Borough 2. Adopt a green building policy for the Borough's new construction and renovation projects 3. Expand upon the Borough's existing green purchasing policy 4. Develop and market a Borough-wide sustainability pledge 5. Launch a green office certification program 6. Create an employee recognition program for Borough staff who are leaders in sustainability

GOAL B: FOSTER SUSTAINABLE BEHAVIOR CHANGE IN THE COMMUNITY

OBJECTIVES	STRATEGIES
Develop a multi-layered public outreach campaign around sustainability that is educational, inspires the adoption of a sustainable lifestyle and provides actionable steps to become more sustainable	<ol style="list-style-type: none"> 1. Develop a multi-media communication strategy around sustainability 2. Develop sustainability themed community programming 3. Develop and nurture new leaders in the Borough's sustainability movement

Borough as an Environmental Steward

The Borough of North Plainfield has the opportunity to lead the way on sustainable practices by serving as a positive example in greening its facilities, policies and its culture. A sizeable landholder and a large employer, the Borough is in a unique position to lead the greening of North Plainfield. The Borough is highly visible. It has substantial purchasing power. Borough administrative staff members serve as a regular point of contact for both residents and businesses. Residents utilize the Borough's services and amenities. A highly visible presence in the community, the Borough of North Plainfield can emphasize its commitment to sustainable principles, model behavior for its residents and support the growing sustainability industry via its purchasing power.

Green Community Facilities

According to the US Green Building Council, buildings comprise 72% of all electricity use and 39% of all energy use in the United States each year. As North Plainfield works to green its community, it is important that the Borough address the greenhouse gas emissions generated by its existing and planned community facilities.

The Borough has already taken the first step in moving to more energy efficient facilities. The Borough engaged a consultant to conduct energy audits of its facilities. This provided the Borough with a detailed assessment of its buildings and identified opportunities for energy savings. While energy audits are a great start, the Borough does not currently have baseline data of energy usage and the

greenhouse gas emissions associated with its operations. It is recommended that the Borough conduct a greenhouse gas inventory to determine a baseline greenhouse gas emissions level from which it can set measurable targeted reduction goals.

It is also recommended that the Borough adopt a green building policy for renovations and new construction. The green building policy could incorporate recognized building practices and technologies that minimize energy use, conserve water, improve indoor air quality and minimize waste. There are several existing green building standards that the Borough could adopt, with the most recognizable being Leadership in Energy and Environmental Design (LEED). LEED is a third-party certification program and an internationally accepted benchmark for the design, construction and operation of high performance green buildings. The LEED rating system provides tools to measure building performance and provides a holistic approach to sustainability by emphasizing performance in human and environmental health, sustainable site design, water conservation, energy efficiency, materials selection and indoor air quality. By adopting a green building policy, the Borough would be providing residents and businesses with an opportunity to learn about the benefits of green building practices and would set the stage for other organizations in the community to follow.

Green the Borough Culture

The Borough is not synonymous with the municipal building, but rather the people within the municipal facilities who work to ensure that residents and businesses within the community are well-served. As the ad-

ministration looks to “green” the Borough, it is important for the administration to consider “greening” the culture of as an integral part of a sustainability strategy. Borough staff should be able to convey North Plainfield’s sustainability goals to residents and model sustainable actions in Borough facilities.

Develop a Sustainability Pledge

It is recommended that the Borough develop and circulate a sustainability pledge to its employees, which asks them to make a commitment to reduce unnecessary energy consumption, conserve water resources, minimize waste and increase recycling. Studies have shown that public commitments are an effective way to motivate behavior change. Upon distribution of its sustainability pledge, the Borough may want to provide participants with email tips related to the items in the pledge they selected. For example, if a participant pledged to minimize waste, the Borough could send tips on using a reusable mug, digitally archiving or duplexing copies and prints. Additionally, the Borough may want to advertise the participation rate in the pledge on its website and encourage residents to take the pledge. A sample sustainability pledge is available in Appendix E.



Launch a Green Office Certification Program

It is recommended that the Borough launch a voluntary green office certification program, in which Borough employees conduct an evaluation of their office to determine ways that they can “green” their space. Upon implementing the strategies identified in the evaluation, the employees would be awarded a certificate for having a certified “Green Office”. The program would encourage employees to proudly display their certificate to demonstrate their commitment to sustainability and to help raise awareness of the program. A sample certification form is available in Appendix F.

Purchasing Policy

The Borough has an existing green purchasing policy. It is recommended that the Borough evaluate the impact of the green purchasing policy in terms of how much the Borough channeled into sustainable products, the effectiveness of the implementation of the policy and whether there are opportunities to expand the scope of the purchasing policy. The existing purchasing policy is available in Appendix G.

Green Stars Program

The sustainability movement in the Borough is in its initial phases. In order to encourage the growth of the movement and acknowledge those who are taking a leadership role, it is recommended that the Borough implement an employee recognition program that highlights leadership in sustainability. This “Green Stars” program would highlight municipal employees who were proactive in advancing sustainability in the Borough or

in the community. The Borough could recognize a monthly green star on the municipal website or provide the employee with a certificate at a monthly staff meeting. In addition to encouraging new leaders in the movement, a “Green Stars” public recognition program also emphasizes the Borough’s commitment to sustainability and communicates it as a value to the entire staff.



Cultivate an Engaged Community

Sustainability provides the Borough of North Plainfield with an effective organizing tool, as it affects everyone within the municipality regardless of age, race, national origin, gender or economic class. Individual residents, local governments and businesses are confronted with the benefits of sustainability and the consequences of ignoring the reality of climate change. North Plainfield has the opportunity to utilize sustainability as a way to engage its stakeholders in a manner that builds community and fosters sustainable behavior change.

It is recommended that the Borough of North Plainfield adopt a community engagement process that provides a continuum of levels of involvement, ranging from passive participation to leadership opportunities. The following strategies will outline pathways for community stakeholders to become increasingly involved with added responsibility in greening North Plainfield.

Communication Strategy

It is recommended that the Borough develop a bilingual, multi-media communication strategy for the Borough to promote sustainability. Through engaging multiple forms of communication and social media, the Borough would be able to raise awareness about sustainability while at the same time providing organizing tools for those who want to get involved. In developing the communications strategy, the Borough should look to build off its existing successful tools, including its Borough website, business association newsletter and email list-servs for working groups in committees. Communication strategies that the Borough may want to consider include:

- Utilizing social media, such as Twitter or Facebook, to establish a conversational tone about sustainability. These outlets provide a great way to encourage communication between stakeholders in the Borough while at the same time providing a way for the Borough to reach a younger audience;
- Develop a theme for each month, such as Energy Conservation Month for October, and encourage partner organizations to highlight the theme in their communication materials;
- Highlight featured sustainability stories

or projects on the Borough's website and rotate them on a monthly basis;

- Create a green column or green tip in the local publications; or
- Host a Borough sustainability awards program that recognizes leaders in sustainability in the municipality.

Sustainable Community Programming

When first introduced, sustainability can seem like an abstract term for those unacquainted with the concept. It is recommended that the Borough work with existing community partners to develop meaningful, sustainability-themed programming that relates to residents and stakeholders' daily lives. By hosting programming that is interesting and fun, educational and provides tangible ways to be more sustainable, the Borough would be building community while also fostering sustainable behavior change. Potential programming events could include:

- Monthly programming workshops or demonstrations that highlight sustainable living, such as an organic gardening workshop, a canning and jamming demonstration or a green home remodeling workshop;
- An annual green fair with exhibitors that include local sustainability non-profits, businesses with green practices and products and/or sustainable food vendors;
- Community service projects with a sustainability theme, such as the current stream restoration project that occurs in the Borough;
- A community swap event or yard sale, which highlights the principle of the three R's – reduce, reuse, recycle; or,
- Lecture series featuring local experts on

sustainability topics.

In addition to community programming and special events, the Borough may also want to partner with the school board to integrate a comprehensive environmental sustainability component in the academic curriculum for K-12 education. Curriculum that emphasizes sustainability will prepare the Borough's youth to be stewards of the environment.

When considering the development of a sustainable community program, it is recommended that the Borough considers working with partners, such as the library, the school district, the Green Team or the museum. These partners offer the Borough an existing population base to target the programs, and they may also have space available for hosting the event. The Borough may also want to consider building on existing popular events, such as the seasonal farmers' market.

Leadership Development through Service

It is recommended that the Borough create opportunities for new leaders in the sustainability movement to emerge. The Borough

has already taken the lead in establishing the Green Team, which recruits individuals who are passionate about sustainability to work with within the municipality to affect change. It is recommended that the Borough use other community service opportunities as a way to cultivate new leaders. Specifically, the Borough may want to consider developing a tree tenders group in each neighborhood to support the shade tree advisory board. The tree tenders group could assist the shade tree advisory board in tree maintenance, pruning, and watering in their respective neighborhoods. While the group would be assisting with the trees, they would also serve as a grassroots network of sustainability advocates in each neighborhood. The Borough may want to consider building off the model established by the North Plainfield Environmental Commission, which has been coordinating conservation service projects with schools and scout groups.



[From left to right] The library offers community programming throughout the year, and would be an ideal partner for hosting sustainability programs. North Plainfield is already a member of the Cool Cities Initiative.

APPENDIX A - SAMPLE BIKE CURRICULUM

Urban Riding Basics

A. *Curriculum*

B. *Urban Riding Basics Evaluation Survey*

Section A:

Pre – Presentation: The Three C’s

1. Confirm
 - a. Be sure to get confirmation that the class is still on and a planned route and time have been established.
2. Comfort
 - a. Arrive 30 minutes early to familiarize yourself with the room and plan out what works best. Also arrange seats if possible to make the setting more conducive to the class. A horseshoe shape works best for visibility of the demonstration bike.
3. Control
 - a. Remember that you are the facilitator for the class and have the ability and responsibility to guide discussion. If people become focused on one topic and lose focus be sure to bring them back into the dialogue

Things to Bring

1. Helmet
2. Lock
3. Demonstration Bike (Must be able to pass the ABC Checklist, outline on page 6)
 - a. Lights
 - b. Bell
4. Safety Literature
 - a. Safe Bicycling in Philadelphia
 - b. Greater Philadelphia Bicycle Map
5. Sign - Up sheet for Bike Temple List serve
6. Small easel or writing pad if there is no whiteboard or chalkboard

Introduction

Start with an icebreaker such as a question regarding cycling this helps set the open discussion format of the course. The Bicycling Coalition recommends “What was your first cycling memory?”

It is also nice to go through names, but be careful. If you have more than 10 people in a class, it can be a time sink. Go for questions that can be answered as a group, show of hands, or shout out responses. Questions that arise should be answered or deferred based on the size of the group as well.

Introduce yourself, Bike Temple and its mission, any upcoming events, and the goal of the course. After that it is easy to discuss the reasons to commute by bike.

1. Exercise
 - a. As a busy college student, it can be hard to fit in the time to keep healthy and active. Cycling to and from class allows you to utilize that time as a cardio activity instead of a passive commute.
2. Cost
 - a. As compared to a car or public transportation, biking is a cheap and effective means of transportation. After your initial investment, repairs and maintenance run low in cost.
3. Time
 - a. Bikes can be an awesome way to save time. You don't need to read a schedule or wait 15 minutes to catch the next public transportation ride. Your bike is available when you need it and runs on your convenience.
4. Recreation
 - a. Cycling is just plain fun! It gives you the same rush it did as a kid without all the knee scrapes. Also cycling allows you to explore areas of the city you may never had before i.e. trails and destinations not convenient by public transportation.
5. Environmentally Friendly
 - a. Most of us are concerned about the state of the environment and the effects of air pollution, noise pollution, and water pollution. Cycling is your own way to personally affect the world by consciously deciding to take an active role saving the environment.
6. Cool Factor
 - a. There's a certain feeling of class and poise that comes from cycling, not far from those who enjoy a ride on a Harley Davidson. Celebrities ranging from former President George W. Bush to James Franco all ride bikes.

The reasons for cycling may sound corny and you are certainly welcome to adapt the commentary, but these serve to highlight and justify cycling in ways many people haven't really thought about. Getting laughs and chuckles will benefit the course by engaging and hooking the audience through personal interaction. These points will help ease the way the more bland and direct safety education.

Safety: How to be safe and keep your ride in top shape

1. Pre-ride safety check
 - a. Open with a transition line, for example "Now that we've talked about the benefits, we need to know how to stay safe on the road."

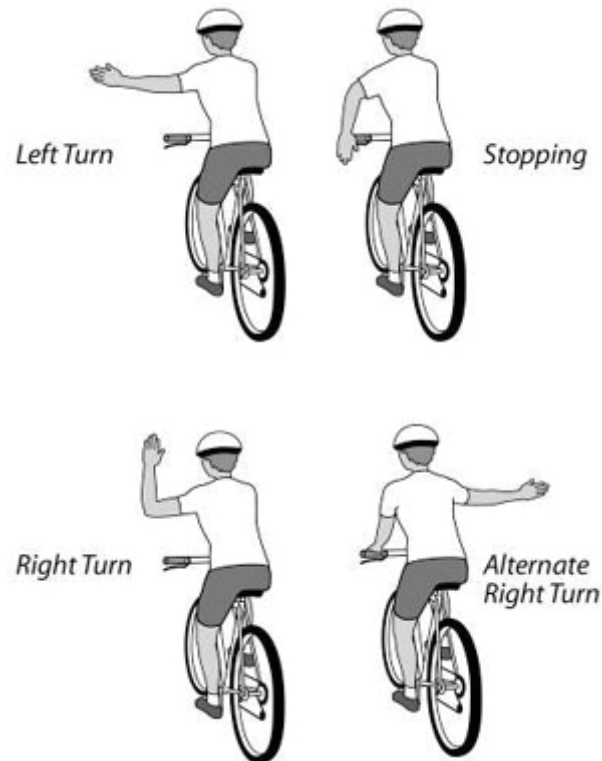
2. Helmets

- a. Note the safety importance and how the benefits outweigh the looks. The benefits include protection of your skull when you fall off your bike. It is almost inevitable that you will fall at least once and it is better to have a helmet when that happens than not. Use a helmet to demonstrate how to properly fit the helmet.
 - i. “Eyes, Ears, and Mouth” Check
 1. Eyes: When helmet is placed on your head look up and if you can see the brim of your helmet it is in the correct positioning. Also demonstrate the alternative incorrect positioning of the helmet.
 2. Ears: Show the V shape helmet straps form with the toggles directly below the ears. The V shape means you have correct positioning for the straps of the helmet.
 3. Mouth: If the chin strap is properly fitted when you open your mouth the helmet should pull down against the top of your head.
 - ii. “Two Finger Check”
 1. A good test to make sure the chin strap is not too loose or too tight is to see if you can place two fingers in between the chinstrap and your throat.
3. ABC Quick Check: The safety importance of a bicycle in good working order and can never be underestimated. The ABC Quick check is a convenient way to make sure everything on your bike is in riding order.
 - a. A, Air: Tires should be inflated to proper pressure because it prevents pinch flats and makes pedaling easier. When you put pressure on your tire there should be very little give.
 - b. B, Brakes: Check front and rear brakes by holding down each brake individually, even lifting the front and rear wheels against the opposing brake.
 - c. C, Chain: Make sure it is clean and lubricated. Test the chain by pedaling backwards and listen for an even sound.
4. Quick release wheels
 - a. Some bikes have quick release wheels to make the process of removing your wheel easier. To make sure the quick release wheel is secure push the quick release lever until your palm is imprinted with the outline of the lever.
5. Drop Check Test
 - a. Pick the bike up a few inches off the ground to make sure nothing is loose, rattles, or falls off the bike.

Bike Laws in Philadelphia: Laying Down the Law

1. A bike is a legal vehicle: ride with traffic, obey traffic signals, and show signal turns.
 - a. Discuss the current trends as to how to proceed at a stop light.
 - i. Remember to remind people they are considered a vehicle and it is illegal to go through a red light as a legal vehicle.

2. Demonstrate how to make a left and right hand turn signal.



3. In Philadelphia, it's illegal to ride on the sidewalk if you are over 12 years of age.
 - a. The sidewalk is dangerous because of uneven pavement, pedestrians, curbs, dogs, and a higher likelihood of not being seen when crossing the intersection.
 - b. You are twice as likely to be in an accident if riding on the sidewalk.
4. It is illegal to wear headphones / earphones.
 - a. When riding you need all senses to be on high alert, including your hearing. Often cars will honk or rev their engines giving you a warning that your eyes might not always be able to see.
5. It is required by law to have lights on your bike
 - a. A front white light and a rear red reflector. Use the flash mode on your light because it makes you more visible for night riding by letting driver know you are on the road.

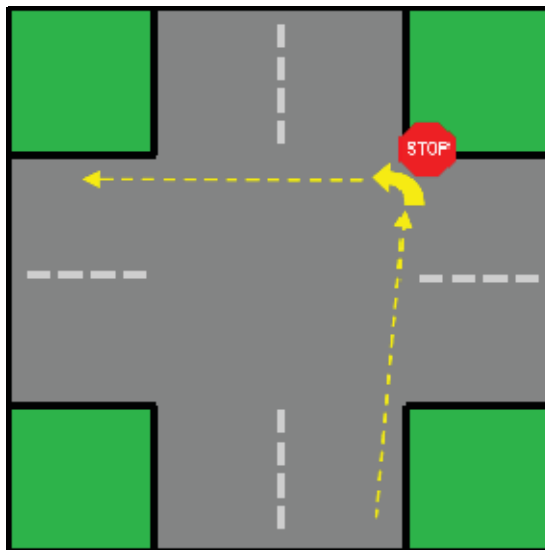
How to Handle the Road: Lane Positioning and Riding Techniques

1. Stay visible and predictable: No weaving, ride in a straight line. A surprise action on your bike often leads to accidents with cars.
2. Have eye contact with people in cars. At stop signs and intersections having eye contact with drivers allows them to know you're aware of their next move.
3. Don't ride in the door zone.

- a. In most cases, you are riding behind the right wheel of a car which can place you in the dangerous door zone of parked vehicles. Sometimes you have to take over the entire lane which is legal if there is no bike lane.



- 4. Don't be afraid of turns!
 - a. Turns can often be the scariest part of urban riding but once you master them they will become second nature to you.
 - b. Box Turns: When approaching a light if it is heavy traffic or too many lanes to cross over to make a left a box turn is the most appropriate choice. To make a box turn stop at the crossing street on the far side. Wait for the light to change and go straight through with traffic.



- c. Approach stopped cars with caution, you never know when someone plans on turning but has no turn signal.
- 5. Don't forget that you can always get off the road and walk your bike on the sidewalk if you ever feel uncomfortable on the road.

How to Get Around: Mapping a Route

1. Remember you do not have to travel the same way you would in a car. Think about this when planning what route to take.
2. Always utilize bike lanes to travel; they are the safest way to get around.
3. Avoid construction, awkward intersections, fast traffic, stop lights, grates, pot holes, and other cycling road hazards.
4. Always plan out your intended route beforehand, this way you will know where you are going and prevent unpredictable motions on your bike.
5. Have an alternative plan or at least a general understanding of the area should anything change or go wrong.

Keeping it on a lock

1. The recommended locking system is a U – Lock or U – Lock and cable combo.
2. As a student at Temple University you can register your bike with Campus Police and in exchange receive a U – Lock. As a part of the registration process they will record your bikes serial code if case your bike is stolen. Without the serial or a picture of your bike there is no way to identify who is the owner of the bicycle. Contact Campus Safety at 215-204-1234 for further questions.
3. Explain the benefits of the U-Lock and cable combo and why this is the safest way to lock your bike. U locks make it difficult for people stealing bikes to get cable cutters in between your frame and your bike.
4. Where to lock your bike and why:
 - a. Lock to Bike Racks, Parking meters (with heads or retrofitted), Secure street signs, well lit areas, NOT trees.
 - b. For on campus parking Bike Temple has a Google map with every rack showing capacity and location.

To improve attendance formatting the program into a game with prizes could be a good alternative to the presentation format. The game format would also aid in marketing of the program giving it a uniform brand from start to finish. To encourage more conversation within the courses Bike Temple recommends possible breakout groups, based on different topics in hopes of creating greater comfort levels than the single large group.

Section B:

Urban Riding Basics Evaluation Survey

1. Following this course, how comfortable would you feel riding a bike at Temple University and around Philadelphia?
 - Very comfortable
 - Somewhat comfortable
 - Neutral

- Somewhat uncomfortable
 - Very uncomfortable
2. Following this course, how knowledgeable are you of the rules of the road?
- Very knowledgeable
 - Somewhat knowledgeable
 - Neutral
 - Somewhat unaware
 - Very unaware
3. Do you feel that you will be safer when cycling due to this course?
- Yes
 - Kind of
 - Neutral
 - Barely
 - Not at all
4. Do you feel the instructor was knowledgeable, well presented, and responsive to your Questions?
- Yes
 - No
5. Do you already ride a bike?
- Yes
 - No
6. Do you have any suggestions for how the course could be better? Please write below.

APPENDIX B - SAMPLE ADAPTIVE REUSE ORDINANCE

Ordinance amending the Corpus Christi Unified Development Code by adding a new Section 7.12 entitled, “Adaptive Reuse Development Standards”, relating to the use, regulations and review standards for Adaptive Reuse and redevelopment of existing and historical structures; Amending conflicting provisions of the City’s Comprehensive Plan; Repealing conflicting ordinances; Providing for severance, penalties, publication and an effective date.

WHEREAS, the Corpus Christi Comprehensive Plan promotes the rehabilitation of deteriorating housing which will promote better quality living environments and enable older neighborhoods to remain viable;

WHEREAS, the Corpus Christi Comprehensive Plan promotes infill development of vacant lots to improve economic viability through incentives to attract private investors;

WHEREAS, the Corpus Christi Comprehensive Plan recognizes that although some City business districts have declined due to decentralization or relocation of business, some still have a strong market potential to compete effectively if renovated or rehabilitated;

WHEREAS, with proper notice to the public, public hearings were held on Wednesday, August 3, 2011, during meetings of the Planning Commission, and on Tuesdays, October 11, 2011 and December 13, 2011, during meetings of the City Council, in the Council Chambers, at City Hall, in the City of Corpus Christi, during which all interested persons were allowed to appear and be heard;

WHEREAS, the City Council has determined that this amendment to the Unified Development Code (UDC), would best serve the general welfare of the City and its citizens by providing a regulatory base for more sustainable communities by ensuring compatibility in development; maintaining consistency and character; and ensuring growth in an orderly and desirable manner that will preserve the public health and safety;

NOW THEREFORE BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CORPUS CHRISTI:

SECTION 1. That the Corpus Christi Unified Development Code is amended by adding a new Section 7.12 entitled “Adaptive Reuse Development Standards” to read as follows:

§ 7.12 Adaptive Reuse Development Standards.

7.12.1 Purpose.

The purpose of the Adaptive Reuse Development Standards is to revitalize areas of the City’s downtown areas (and any other pre-determined or targeted area) by facilitating the conversion of older, economically distressed, or historically significant buildings consisting of residential or tourist uses mixed with Commercial,

Professional Office, Civic uses, including apartments, Live-Work units, multiple-family residences, and tourist-based facilities. This will help to reduce vacant space as well as encourage the development of a residential community downtown and other blighted areas of the City, thus creating a more balanced ratio between housing and jobs in the region's primary employment centers.

7.12.2

Application of Standards.

The standards under this Ordinance shall be applied as follows:

- A.** Where a conflict exists between the standards of the underlying zoning district and the Adaptive Reuse development standards, the standards established under the Adaptive Reuse Standards Ordinance shall apply.
- B.** The standards provided under this Ordinance may only be applied to Adaptive Reuse development that is platted, developed, and constructed in accordance with this Ordinance.
- C.** When an adaptive reuse project is approved as an eligible building and proposed within the Uptown-Downtown Mixed Use Special Overlay District, 50% of any Zoning fees required shall be waived.
- D.** The standards of this Ordinance do not apply to remodeling or reconstruction of a single-family or two-family home, or an addition to a structure for any use when the building is currently in use, but shall be applied in the adaptive re-use of an existing vacant structure for the development of a multiple-family structure, or single-family Live-Work mixed-use structure.
- E.** Historical buildings are not required to include residential uses in an Adaptive Reuse development.

7.12.3

Applicable Zoning Districts.

For the purpose of this Ordinance, the standards of this Ordinance shall apply to proposed adaptive reuse of a vacant building to a mixed residential or mixed tourist use, and located in the RM-1, RM-2, RM-3, RM-AT, CN-1, CN-2, ON, CR-1, CR-2, CR-3, CG-1, CG-2, CI, CBD, and BP Zoning Districts. Light Industrial (IL) Zoning Districts may be included as an adaptive reuse project under this Ordinance if rezoned to one of the districts listed under this Section.

7.12.4

Permitted Uses.

- A.** An adaptive reuse project is the conversion and change of use within all or a portion of a vacant eligible building, to

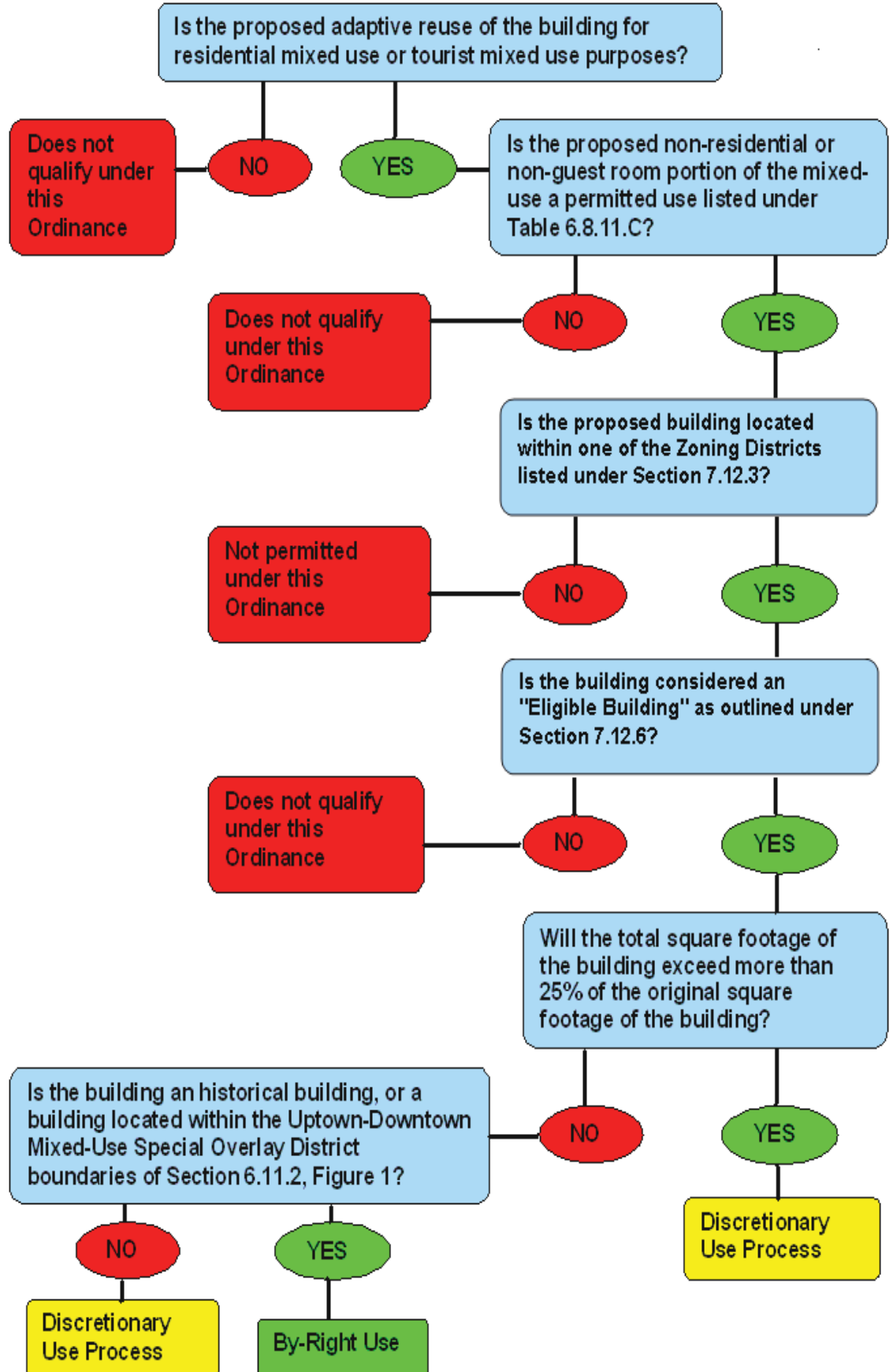
include one or more, or any combination of the following new residential uses:

1. Dwelling units (apartments, condos, lofts, single and two-family dwelling units, see Section 7.12.2.D).
 2. Joint living and work quarters (Live-Work units mixed with a restricted mix of small Commercial, Professional Office, or Civic uses) in accordance with the development standards of Section 6.14.7.
 3. Mixed Uses (as constructed in accordance with Section 6.8 or 7.11, but eligible for the exceptions and provisions under this Ordinance).
 4. Guest rooms (in hotels, including a toilet and bathing facilities).
 5. Bed and breakfast lodging establishments where permitted under a development concept or special overlay district ordinance.
 6. As part of a Traditional Neighborhood or Transit-Oriented development in accordance with Sections 6.9 or 6.10.
- B.** Commercial, Professional Office, Civic or Institutional uses may be used in combination with the residential uses stated above when developed as, and in accordance with, the Mixed-Use Development Ordinance Standards of Section 6.8.

7.12.5 Review Process.

An abbreviated version of the review process of a proposed adaptive reuse building under this Ordinance is provided in the following flowchart (Fig. 7.12.5), the detailed review process follows the flowchart:

Figure 7.12.5. Adaptive Reuse Review Process



7.12.6**Eligible Buildings.**

Eligible buildings are defined as those structures that have been vacant for a period of at least 5 years, and the building was constructed in accordance with building and zoning codes in effect 5 years prior to the date that an application is made. A Certificate of Occupancy, building permit, utility bill, or other suitable documentation may be submitted as evidence to verify the date of occupancy. Eligible buildings for adaptive reuse reconstruction shall either be considered a By-Right Use or Discretionary Use, as determined by the following:

A. By-Right Use.

1. To be considered as a By-Right use, the existing structure may not increase the building footprint greater than 25% of the original square footage of the structure being re-used.
2. As a By-Right use, any non-conforming and existing floor area, lot area, lot line setbacks, and heights, are “grandfathered in” and a variance, special permit, or public hearing is not required.
3. **Historical Buildings.** Historically significant buildings (i.e. buildings listed on the National Register of Historic Places, Texas Historical Commission, or any locally established register of historic sites or buildings) are always considered eligible buildings under this Ordinance, and adaptive reuse of the historical structure shall be a By-Right/permitted use. Although the historical structure may not require review through a public hearing process, it may require review by the City’s Landmark Commission prior to approval.
4. Structures in the Uptown-Downtown Special Mixed Use Overlay District: A structure located within the boundaries shown on the map provided under the Uptown-Downtown Special Mixed Use District Ordinance, (Section 6.11.2, Figure 1) shall be considered an eligible By-Right building.

B. Discretionary Use. Any other proposed adaptive reuse of a vacant structure in which new floor area or height is proposed to be added that **exceeds** 25% of the original floor area, or a change has occurred in the yard setbacks 5 years prior to the date that an application is made, or not classified as an Eligible Building under Section 7.12.6(A) above, may be considered as a Discretionary Use. In order to be classified as a Discretionary Use and qualify for the

exceptions and provisions of this Ordinance, the proposed building for reuse must meet the following requirements:

1. The building must have been continuously vacant for at least 5 years (as evidenced by a valid Certificate of Occupancy); and
2. The Development Services Department ACM or designee must determine that the building is no longer economically viable in its current use. In making this finding, the Development Services Department ACM or designee shall consider the building's past and current vacancy rate, existing and previous uses, and real estate market information, and any adverse relationship with adjacent uses.
3. The Development Services Department ACM or designee has the following options in reviewing a proposed adaptive reuse as a Discretionary Use:
 - a. Approve the application;
 - b. Approve the application with conditions;
 - c. Deny the application;
 - d. Require the project to go through a public noticing period (for which the applicant will be required to pay for the advertisement fee). Following the required noticing and advertisement period, if no opposition to the project has been received, the ACM or designee may approve the application administratively. If the proposed development does receive opposition during the noticing period, the applicant shall be required to attend a public hearing before the Planning Commission and City Council for review and approval.

7.12.7

Construction Standards.

All structures proposed for adaptive reuse require a Building Permit Application, applicable building permits and inspections, and are required to meet the City's current adopted Building Codes. Approved By-Right and Discretionary Use Adaptive Reuse projects are entitled to construct the project without having to apply for a variance, special permit, or further participation in a public hearing process if the project is constructed as follows:

A. Density.

1. Uptown-Downtown MUS Special Overlay District.
There is no limit to the number of apartments, live/work units, or guest rooms permitted in an adaptive reuse project, provided that no more than 25% of the existing floor area is added as new floor area (New floor area

shall be defined and refers to any change in use to an existing eligible building proposed for adaptive reuse, located within the confines of the existing interior portion of the exterior walls and roof).

2. All Other Areas.

a. Existing floor area which exceeds that permitted by the current Zoning District or any other land use regulation shall be permitted, provided no additional floor area is added.

b. Where increased density is proposed and does not currently exceed the maximum limits for the Zoning District, the proposed increase in density must not exceed the density limits established by the Zoning District for which it is located.

B. Minimum Lot Area and Lot Width.

1. The minimum lot area and lot width required shall not be less than the limits established by the underlying zoning district for which the proposed development is located.

2. The minimum lot area and width of a lot and structure proposed within the Uptown and Downtown Mixed Use Boundary area for adaptive reuse shall not be limited, provided any yards required for the underlying district are met, where required.

C. Height. Existing heights which exceed that permitted by the current Zoning District or any other land use regulation shall be permitted to remain, provided no additional height is added above the maximum heights permitted by the zoning district in which the development is located.

D. Yards. Existing observed yards which do not meet the yards required by the current Zoning District or any other land use regulation shall be permitted, provided that the proposed floor area of the adaptive reuse does not further encroach into the existing yards.

E. Mezzanines. New construction to accommodate loft spaces in an existing story is permitted, provided that the new loft area may not exceed 33% of the floor area of the room or space on lower floors. New mezzanines constructed of one-third the floor area of the floor below or less shall not be counted as floor area (Figs. 7.12.7.E).

Figures 7.12.7.E. Mezzanine Lofts.**F. Off-Street Parking.**

- 1.** New parking spaces shall not be required for an adaptive-reuse project, provided that all existing on-site spaces are maintained and not reduced in the adaptive reuse of the site (unless the proposed use requires less parking for the proposed use or by the City's Unified Development Code). The existing parking may be used for any onsite or off-site use (For example, the parking may be reserved exclusively for onsite residential tenants, or it may be utilized for public parking).
- 2.** The adaptive reuse of a structure located within the boundaries of the Uptown-Downtown Mixed Use Special Overlay District shall not require any additional parking.
- 3.** The location and construction of new parking areas for an adaptive reuse project must be designed and located in accordance with the requirements of Section 6.8.17.
- 4.** Parking may be located between a pedestrian-oriented street and the primary building if the parking area already exists and the project proposes to renovate only the interior of an existing building where adequate parking for the use currently exists. Redevelopment of a parking lot in connection with the adaptive reuse of a structure shall provide the needed parking behind the adaptive reuse structure.
- 5. Commercial Parking.** The adaptive reuse of a lot for the purposes of creating a commercial or public parking lot is permitted, provided that the proposed parking lot is located in compliance with standards of Section 6.8.17.
 - a. Exception to Strict Application of Section 6.8.17.** Where it can be proven that a proposed commercial or public parking site is currently and

actively being used for commercial or public parking uses, and not located in accordance with the standards of Section 6.8.17, the proposed commercial or public parking use shall be permitted to remain, provided that the total square footage of the original parking area is not increased and the landscape and vehicular screening requirements of Section 6.8.17 and the City's Landscaping Ordinance are applied.

6. Where off-street surface parking areas are constructed or located behind, under, or above the principal building which screens the parking area from the direct view of the right-of-way, the vehicular screening requirements shall be waived.

7. **Vehicular Screening Exceptions.** In order to encourage infill and adaptive reuse on constrained sites containing no more than 1 acre and bordered by developed land along the entire perimeter (excluding intervening public streets), the following exceptions to the City's Landscaping Ordinance vehicular screening requirements are available to infill and adaptive reuse projects occurring within an older/established area:

a. The Development Services Department ACM or designee may waive up to 50% of the parking lot/vehicular screening landscaping requirements of the City's Landscaping Ordinance, provided that tree canopy planted along the site perimeter also serves to screen and shade the interior of the parking lot within 10 years of planting; or

b. The Development Services Department ACM or designee may waive up to 50% of the parking lot/vehicular screening landscaping requirements if a low decorative wall or fence of a minimum height of not less than 42 inches is installed along the parking area perimeter that also serves to screen the parking area from public view. Where fencing is utilized, fencing shall not be solid or chain-linked, and must provide a minimum of 50% transparency.

c. The vehicular screening exceptions under this Section do not apply to the screening requirements for commercial or public parking lots not associated with the adaptive reuse of a building.

- G. Loading Spaces.** Where an existing loading space is provided, the loading space shall be required to remain, but may also be used as additional parking space when deliveries are not scheduled. Adequate signage shall be provided listing the hours of deliveries and designating when the spaces cannot be used for public or private parking. If no loading spaces exist, then a loading space shall not be required in conjunction with the development of an adaptive reuse project.
- H. Access and Driveways.** Existing access and driveways shall be permitted to remain, provided that the proposed development site is not located within a City-planned or funded Capitol Improvement Project or Texas Department of Transportation (TXDOT) proposed project area that may require altering the location of the existing access or drive.

7.12.8 Additional Adaptive Reuse Development Requirements.

- A. Open Space.** An adaptive reuse project must provide open space equaling a minimum of 10% of the combined floor area of all residential or tourist lodging units. The open space requirement can be met through, but is not limited to, the following methods:
- 1. The square footage of common plazas and courtyards, swimming pools, or recreational amenities provided onsite may be counted towards the open space requirement on the site (Figs. 7.12.8.A.1).**

Figures 7.12.8.A.1 . Courtyards & Adaptive Reuse with Courtyard.





- 2.** The Development Services Department ACM or their designee may approve a reduction in the amount of open space required for the residential component of an adaptive reuse building when it finds that all reasonable attempts to fulfill the requirements have been exhausted and the open space is not able to be accommodated due to the urban infill characteristic of the development site.
- 3.** The adaptive reuse of a historical structure for purposes other than residential uses shall be exempt from the open space requirement.

B. Building Orientation and Design Standards.

- 1.** When an adaptive reuse project includes the alteration, reconstruction or remodeling of the exterior walls or facades of a building, the building orientation and design standards of Section 6.8.13 and 6.8.14 shall apply to the greatest extent possible. Deviation from the strict application of one or more of the orientation and design standards may be considered and approved by the Development Services ACM or designee when it is determined that strict application of the standard(s) would not be feasible.
- 2. Historical Structures.** Strict application of the building orientation and design standards shall not be required in the adaptive reuse of historical structures; however, the renovation and remodeling of a historical structure must not destroy or obscure essential architectural features, and to the greatest extent possible, enhance the architectural features of the structure.

C. Sidewalks and Streetscape Zones.

- 1.** The applicant of the adaptive reuse project shall have the option of providing either a Streetscape Zone in accordance with the standards of Section 6.13, or provide the landscaping requirements of the City's Landscaping Ordinance.
- 2.** Sidewalks shall be provided for all adaptive reuse projects that are located adjacent to an Arterial or Collector Street, and constructed in accordance with the Americans with Disabilities Act construction standards, and the sidewalk widths proposed under the Urban Transportation Plan.
- 3.** Where the interior renovation and adaptive reuse of an existing building is situated on an existing sidewalk that does not meet the minimum 10 foot width requirement, the minimum sidewalk width and Streetscape Zone width may be reduced to the actual width of the existing sidewalk, but must not be less than 5 feet in width, unless the proposed project is located within a City planned streetscape design area, in which case the requirements of the planned streetscape design shall be required.

D. Fencing.

- 1.** Prominent facades on street-facing units may not be concealed behind high walls, solid fencing, or privacy fences that provide less than 50% transparency, forward of the front façade of the building.
- 2.** Residential units consisting of courtyards and entrances located rearward of the "build-to" line may not be concealed behind high walls, solid fencing, or privacy fences that provide less than 50% transparency (Figs. 7.12.8.D.2)

Figures 7.12.8.D.2.

3. Lower solid fencing, solid landscaping, and walls not exceeding 4 feet in height, or decorative iron fences no greater than 7 feet in height are acceptable.

E. Adaptive reuse development must also comply with the following additional standards listed under the following Sections:

6.8.19 Servicing and Solid Waste Collection.

6.8.21 Accessory Structures.

6.13.1(D) Awnings.

SECTION 2. That the UDC and corresponding Zoning Map of the City of Corpus Christi, Texas, effective July 1, 2011, as amended from time to time, except as changed by this ordinance and any other ordinances adopted on this date, remain in full force and effect.

SECTION 3. That to the extent that this amendment to the UDC represents a deviation from the Comprehensive Plan, the Comprehensive Plan is amended to conform to the UDC, as amended by this ordinance.

SECTION 4. That all ordinances or parts of ordinances in conflict with this ordinance are hereby expressly repealed.

SECTION 5. If for any reason any section, paragraph, subdivision, clause, phrase, word or provision of this ordinance shall be held invalid or unconstitutional by final judgment of a court of competent jurisdiction, it may not affect any other section, paragraph, subdivision, clause, phrase, word or provision of this ordinance, for it is the definite intent of this City Council that every section, paragraph, subdivision, clause, phrase, word or provision hereof be given full force and effect for its purpose.

SECTION 6. A violation of this ordinance or requirements implemented under this ordinance constitutes an offense punishable as provided in Section 1.10.1 and/or Article 10 of the UDC.

SECTION 7. That publication shall be made in the official publication of the City of Corpus Christi as required by the City Charter of the City of Corpus Christi.

SECTION 8. This Ordinance shall take effect upon and after publication of this Ordinance.

Signatures on following page.

That the foregoing ordinance was read for the first time and passed to its second reading on this the 11th day of December, 2011, by the following vote:

Joe Adame	<u>Aye</u>	David Loeb	<u>Aye</u>
Chris Adler	<u>Aye</u>	John E. Marez	<u>Aye</u>
Larry Elizondo, Sr.	<u>Aye</u>	Nelda Martinez	<u>Aye</u>
Kevin Kieschnick	<u>Aye</u>	Mark Scott	<u>Aye</u>
Priscilla Leal	<u>absent</u>		

That the foregoing ordinance was read for the second time and passed finally on this the 13th day of December, 2011, by the following vote:

Joe Adame	<u>Aye</u>	David Loeb	<u>Aye</u>
Chris Adler	<u>Aye</u>	John E. Marez	<u>Aye</u>
Larry Elizondo, Sr.	<u>Aye</u>	Nelda Martinez	<u>Aye</u>
Kevin Kieschnick	<u>Aye</u>	Mark Scott	<u>Aye</u>
Priscilla Leal	<u>Aye</u>		

PASSED AND APPROVED this the 13th day of December, 2011.

ATTEST:

Armando Chapa
Armando Chapa
City Secretary

Joe Adame
Joe Adame
Mayor

APPROVED as to form only: this the 30th day of November, 2011.

For Carlos Valdez, City Attorney

By: Deborah Walther Brown
Deborah Walther Brown
Assistant City Attorney

EFFECTIVE DATE
<u>12/19/11</u>

APPENDIX C - MODEL BUSINESS CERTIFICATION PROGRAM



Green Business Certification Program

Montgomery County, Maryland

Application for Office/Retail - Tenant

Thank you for your interest in the Montgomery County Green Business Certification Program! This application, and its comprehensive checklist and resource links, are designed to be an easy-to-use tool to assist and guide businesses in greening their operations. Please follow the steps below to become a certified Green Business and get recognized for your environmental stewardship.

1. Before you start the application, you should review information on the program website at MCGreenBiz.org.
 - a. Use the Resource Guide! The application is integrated with an extensive Resource Guide that can be accessed by clicking on the actions **highlighted in green**. But you can also preview the application and the Resource Guide on-line before starting at MCGreenBiz.org/guide.
 - b. If you have any questions, check out the Frequently Asked Questions section at MCGreenBiz.org/FAQs.
2. Begin the application by completing the contact information section on the following page.
3. In each section, there are required actions as well as a specified number of additional actions that must be completed in order to receive certification as a Green Business. The number of actions varies depending on the number of full-time equivalent employees (FTEs) at all locations of your organization (both inside and outside Montgomery County). Businesses with fewer than 25 FTEs are considered SMALL businesses. Those with 25 or more FTEs are considered LARGE.
4. You are encouraged to use the "Other" boxes to tell us about innovative actions you are taking that are not included in the application. As long as they meet the spirit of the program, you will receive credit!
5. The "n/a" check box should be checked when you do not have control over a particular item or it does not apply to your business. If an action is beyond your control, but you have successfully collaborated with your property manager to implement the action, check "Yes" and get credit for it!
6. **VERY IMPORTANT!** All policies and performance measurements must be documented and submitted with your application. For every "Yes" response that is not self-explanatory, explain briefly how you satisfy the requirement in the boxed area provided for supporting information at the bottom of each page (see example application). Additional supporting documentation that enhances your application is strongly encouraged and can be submitted electronically with your application or provided during the on-site visit.
7. The cost of certification, which is valid for two years, is \$100 for SMALL businesses and \$250 for large businesses. Following submission of the application, please send a check, payable to *Montgomery County Government*, to:

Green Business Certification Program
255 Rockville Pike, Suite 120
Rockville, MD 20850

8. Submit your completed application on-line by clicking the button below.

Click Button to Submit Application

9. Following the submission of your application, the program office will contact you to arrange for an on-site verification visit to review your facility and meet with staff involved in implementing environmental actions.
10. If you have questions, please e-mail the program office at MCGreenBiz@montgomerycountymd.gov or contact Doug Weisburger, Green Business Certification Program Manager, at 240-777-7775.



Green Business Certification Program

Montgomery County, Maryland

Business Name: _____

Street Address: _____ City: _____ Zip: _____

Primary Contact: _____ Title: _____ Phone: _____

E-Mail Address: _____

Secondary Contact: _____ Title: _____ Phone: _____

E-Mail Address: _____

Nature of Business: _____ Number of Full-Time Equivalent Employees: _____

Do you own or lease the building in which you are located? Own the space Lease the space

The application links to websites containing information from numerous companies, organizations and individuals. The opinions and information contained in these sources do not necessarily reflect the opinions of the Green Business Certification Program. Although the information contained in these websites is believed to be reliable, the accuracy, legality, timeliness, or completeness of that information cannot be guaranteed. Advice received through these websites should not be relied upon for financial, legal, or tax decisions.



Green Business Certification Program

Montgomery County, Maryland

A. Organizational Commitment

POLICY	YES	NO	n/a
A1. REQUIRED: Develop and display an environmental policy that could include a mission statement, corporate values, and strategic goals that demonstrate a commitment to a green workplace.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS			
Engage management and staff in the Green Business Certification Program: Complete 3 of the following on-going practices:			
A2. Incorporate sustainability into job descriptions and/or performance appraisals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A3. Incorporate sustainability into training programs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A4. Incorporate sustainability into employee orientations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A5. Create employee resource guide outlining company policies, employee responsibilities and (if applicable) green building features.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A6. Incorporate sustainability into staff meeting discussions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A7. Offer brown bag lunches, seminars, or workshops with sustainability as a focus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A8. Elicit staff ideas and input on greening the workplace and operations through surveys or other means.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A9. Other: <input style="width: 600px; height: 20px;" type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
From the PROGRAMS AND ACTIONS and PERFORMANCE MEASUREMENT sections (including A2-A8 not completed to meet the requirement above), complete: At least 2 more measures for SMALL businesses At least 4 more measures for LARGE businesses			
A10. Post educational information in your facility about steps you are taking to be a sustainable organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A11. Highlight your sustainability efforts on your website.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
A12. Appoint personnel responsible for green initiatives and organize a "green" steering committee or workgroup.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A13. Offer tours and/or distribute e-newsletter to customers and other stakeholders highlighting green practices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A14. Encourage at least one other business to become a certified green business.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A15. Provide opportunities for employees to green their personal lives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A16. Offer socially responsible investment options as part of employee retirement benefit programs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A17. Participate in or sponsor environmental restoration projects and other community efforts to reduce environmental impacts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A18. Offer customers environmentally responsible products and services that demonstrate a commitment to sustainability.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A19. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERFORMANCE MEASUREMENT			
A20. Measure performance of your organizational commitment to sustainability by completing an annual sustainability report.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A21. Become "carbon neutral" through the purchase of verified/certified carbon offsets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A22. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LANDLORD COMMUNICATION			
A23. REQUIRED: Encourage your property manager/owner to adopt green practices for actions that are beyond your control. (See example letter contained in link.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

B. Waste Reduction & Recycling

POLICY		YES	NO	n/a
B1.	REQUIRED: Establish waste reduction and recycling policies. Use the actions in this section to guide the development of these policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS				
General: The following 2 measures are required for all businesses:				
B2.	REQUIRED: Educate all employees and customers about the organization's recycling and waste reduction programs, as well as efforts to buy recycled supplies and materials.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B3.	REQUIRED: Provide containers for recyclable materials and collection area(s) for storage of recyclable materials. Provide clear information about what can and cannot be recycled.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Reduce waste: At least 5 ways for SMALL businesses At least 8 ways for LARGE businesses			
B4.	Discourage the printing of e-mails, and transmit documents electronically through the use of PDFs or hyperlinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B5.	Set copier/printer defaults to double-sided.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B6.	Practice efficient printing and copying by using the size reduction feature to enable printing of two pages of a document or book onto one page.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B7.	Eliminate or redesign forms to use less paper; or switch forms (such as invoices) to electronic format.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B8.	Use a bulletin board or routing lists for memos and journals to reduce printed copies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B9.	Eliminate paper copies of newspapers, journals, phone books, etc. by switching to on-line subscriptions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B10.	Reduce unwanted mail.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
B11. Design marketing and outreach materials that reduce paper use, such as e-newsletters.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B12. Avoid the use of "hard to recycle" materials such as packaging made from Styrofoam™ (polystyrene).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B13. In the lunch/break room, replace disposables with reusable kitchenware (e.g., mugs, utensils, etc.) and use refillable containers for sugar, salt & pepper, etc. to avoid individual condiment packets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B14. For office functions, utilize reusable kitchenware.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B15. Reduce paper use in the bathroom (toilet paper, paper towels) using informational signage, dispensers that regulate sheet length, air dryers, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B16. Use optical scanners for inventory management, which give more details about inventory and allow for more precise ordering.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B17. Lease rather than purchase computers and printers. Alternatively, reuse computers or component parts within your own company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B18. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<div style="border: 1px solid black; padding: 5px; background-color: #f0f0f0;"> <p>Reuse material: At least 2 ways for SMALL businesses At least 4 ways for LARGE businesses</p> </div>			
B19. For drafts and internal documents, print on previously printed paper; designate a draft printer tray; and/or reuse office paper as scratch pads.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B20. Use continuous circulation envelopes to route information to employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B21. Give or sell reusable bags.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B22. Offer a small incentive to customers who bring their own shopping bags, return packaging for reuse, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B23. Reuse paper, cardboard, or plastic packaging materials.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B24. Designate a sharing and reuse area for office supplies such as binders, folders and staplers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
B25. Donate furniture, supplies, computers, pagers/phones, scrap materials, etc., or use a waste exchange program where businesses can benefit from exchanging unwanted items.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B26. Donate unopened cans of paints/solvents or return them to the place of purchase.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B27. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recycle the 4 REQUIRED materials and: At least 2 additional materials for SMALL businesses At least 3 additional materials for LARGE businesses			
B28. REQUIRED: Mixed paper (including cardboard)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B29. REQUIRED: Commingled materials (cans, bottles, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B30. REQUIRED: Scrap metal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B31. REQUIRED: Christmas trees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B32. Pallets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B33. Construction and demolition material	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B34. Toner/ink cartridges	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B35. Electronic and computer equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B36. Carpeting and carpet padding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B37. Fluorescent light bulbs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B38. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
PERFORMANCE MEASUREMENT			
All businesses are REQUIRED to measure performance in at least one way:			
B39. Complete the Montgomery County Business Recycling and Waste Reduction Plan and the Montgomery County Annual Business Recycling and Waste Reduction Report. (NOTE: This is legal REQUIREMENT for certain businesses.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B40. Conduct a solid waste assessment to identify ways to reduce waste and increase recycling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B41. Measure the environmental benefits associated with your waste reduction and recycling actions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B42. Quantify the financial and environmental benefits associated with a paper reduction program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B43. Measure performance of other waste reduction and recycling measures in this section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

C. Environmentally Responsible Purchasing

POLICY	YES	NO	n/a
C1. REQUIRED: Establish environmentally responsible purchasing policies. Use the actions in this section to guide the development of these policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS			
Buy the one REQUIRED item with recycled content and: At least 3 additional items for SMALL businesses At least 5 additional items for LARGE businesses			
C2. REQUIRED: Letterhead, envelopes, and copier/printer paper with at least 30% post-consumer recycled content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C3. Copier/printer paper with 100% post-consumer recycled content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C4. Copier/printer paper processed chlorine-free (PCF)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C5. File folders, note pads, and business cards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C6. Paper towels, tissues, and toilet paper with 100% recycled content and PCF	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C7. Garbage bags	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C8. Boxes and bags for retail use and/or shipping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C9. Laser printer and copier toner and ink cartridges (remanufactured)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C10. Carpet, carpet padding, or flooring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C11. Remodeling/construction materials such as cabinets, fixtures, ceramic and ceiling tiles, drywall, insulation, exterior sheathing, composite lumber/wood, roofing, concrete, plastic "lumber," etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C12. Other: <input style="width: 600px; height: 25px;" type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
Green your supply chain and purchasing practices: At least 3 ways for SMALL businesses At least 9 ways for LARGE businesses			
Procurement Practices			
C13. Coordinate purchasing in order to eliminate duplicative or excess purchases, and minimize deliveries.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C14. Create a list of approved vendors based on environmental criteria and use whenever possible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C15. Give preference to vendors who offer products that meet high environmental criteria.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C16. Participate in cooperative purchasing programs with nearby businesses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C17. Give preference to locally produced items.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C18. Prohibit use of bottled water for office functions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C19. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Green Products and Services			
C20. Purchase products that have reusable or returnable containers or packaging.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C21. Purchase EPEAT registered electronic products.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C22. Purchase paper, wood, or other products with a green third-party certification.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C23. Utilize lighter stock of paper or alternatives made from bamboo, hemp, organic cotton, or kenaf.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C24. Stock bathroom with biodegradable soap without antibacterial agents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C25. Purchase or obtain previously used furniture, supplies, or construction materials.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
C26. Replace aerosols with pump dispensers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C27. Use low or no VOC products such as paint, paint removal products, cleaning products, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C28. When ordering catered food, utilize "green" caterers that provide reusable kitchenware, use locally grown and/or organic food, select sustainably harvested food, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C29. If tea and coffee are provided, make sure they are Fair Trade certified and have low environmental impact (e.g., organic, shade grown, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C30. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERFORMANCE MEASUREMENT			
All businesses are REQUIRED to measure performance in at least one way:			
C31. Measure the waste and cost reduction resulting from the use of remanufactured ink cartridges.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C32. Quantify the environmental benefits associated with better paper purchasing choices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C33. Calculate the environmental benefits associated with the purchase of EPEAT products.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C34. Calculate the savings and environmental impacts realized through the elimination of bottled water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C35. Measure performance of other environmentally responsible purchasing actions in this section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

D. Pollution Prevention

POLICY	YES	NO	n/a
D1. REQUIRED: Establish pollution prevention policies. Use the actions in this section to guide the development of these policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS			
Prevent pollution: Through the 5 REQUIRED actions and: At least 4 additional actions for SMALL businesses At least 8 additional actions for LARGE businesses			
D2. REQUIRED: Store all chemical, petroleum and other harmful products inside or under cover in their original containers or properly labeled secondary containers with tight fitting lids.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D3. REQUIRED: Store all chemical, petroleum and other harmful products in secure, controlled areas, away from ignition sources, food storage areas, and sewer and storm drains.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D4. REQUIRED: Sign up for e-mail notifications from Clean Air Partners regarding air quality and provide information to employees about actions they can take to reduce air pollution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D5. REQUIRED: If you generate less than 220 pounds of hazardous waste, utilize the County's Ecowise program to manage it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D6. REQUIRED: Ensure proper collection, recycling, and disposal of automotive fluids when performing maintenance on company vehicles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D7. Place trash and recycling receptacles at exterior locations such as building entrances/exits, parking lots and other appropriate places, and ensure they are emptied regularly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D8. Provide or participate in e-cycling events for the collection of electronic waste from the business and/or employees' homes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D9. On Code Orange, Red, or Purple days, prohibit lawn mowing/maintenance and painting, and delay vehicle and equipment fueling and maintenance until late afternoon or until air quality improves.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D10. Encourage staff to telecommute or use public transit on Code Orange, Red and Purple Days.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
D11. Arrange for a free pollution prevention site visit and opportunity assessment through the Maryland Department of Environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D12. Store deliveries and supplies inside and/or under cover.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D13. Restrict use of hazardous products by buying them in small quantities and limiting access to authorized staff.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D14. When replacing standard fluorescent bulbs, use low mercury fluorescent bulbs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D15. Use rechargeable batteries in battery operated appliances, flashlights, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D16. Replace toxic permanent ink markers/pens, correction fluid, etc. with non-toxic (e.g. water-based) alternatives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D17. Print promotional materials with vegetable or other low-VOC inks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D18. Use natural or low emission building/furniture materials and carpets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D19. Replace harmful cleaning products and practices with safer alternatives, and inform cleaning staff or contractor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D20. Use one or a few multipurpose cleaners, rather than many special-purpose cleaners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D21. For de-icing sidewalks and parking lots, use less harmful alternatives to salt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D22. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERFORMANCE MEASUREMENT			
All businesses are REQUIRED to measure performance in at least one way:			
D23. Track volume of e-waste collected for recycling/reuse.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D24. Measure performance of other pollution prevention actions in this section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

E. Energy Efficiency & Renewable Energy

POLICY	YES	NO	n/a
E1. REQUIRED: Establish energy management policies. Use the actions in this section to guide the development of these policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS			
Save energy: Through the 5 REQUIRED measures plus: At least 4 additional measures for SMALL businesses At least 8 additional measures for LARGE businesses			
<i>General</i>			
E2. Use ENERGY STAR labeled office equipment and ensure energy saving features are enabled and, where applicable, use network controls to regulate power use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E3. Prohibit personal refrigerators by providing high-efficiency (e.g. ENERGY STAR) refrigerators in common areas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E4. Replace refrigerator purchased before 2000 with new ENERGY STAR labeled refrigerator.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E5. Set refrigerator temperatures between 35 and 38 degrees F and freezer temperatures between 0 and 5 degrees F.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E6. Prohibit energy-intensive water coolers by using tap water (provide a faucet mounted filter if desired) or cold water from the refrigerator (from containers or an in-door dispenser).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E7. If you use water coolers or cold vending machines, use models with sensors that adjust operation consistent with their use and place machines away from direct sunlight.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E8. After brewing coffee or tea, turn off appliance. Rewarm liquid by using a microwave or keep warm by using a thermos or pump pot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E9. Lower hot water heater thermostats to achieve 120 degrees F at all faucets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E10. Install power strips to allow employees to easily control "phantom" power loads from equipment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
E11. Replace cathode ray tube (CRT) monitors with liquid crystal displays (flat panel monitors).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E12. Put up signs at elevators to encourage the use of stairs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E13. Develop contract language for cleaning service requiring lights to be turned off after areas are cleaned and/or schedule daytime cleaning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E14. Where available, participate in commercial "demand response" programs offered by utilities or "demand response service providers."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E15. Tighten the building envelope to seal air gaps around doors and windows.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E16. Insulate all accessible hot water pipes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E17 Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lighting			
E18. REQUIRED: Turn off all lighting and electronic devices when not in use. Use signage at light switches reminding staff to turn off lights.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E19. REQUIRED: Replace all T12 fluorescent lamps with energy efficient T8 or T5 lamps with electronic ballasts, or lighting with equivalent performance. \$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E20. REQUIRED: Replace any incandescent bulbs with energy efficient compact fluorescent (CFLs) or other high efficiency lamps where appropriate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E21. REQUIRED: Use LED, electroluminescent, or photoluminescent exit signs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E22. Arrange workspace to take advantage of areas with natural light, or provide task lighting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E23. Where appropriate, install energy saving lower wattage fluorescent lamp replacements for 32 watt T8 lamps.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E24. Use and regularly maintain lighting controls such as occupancy sensors, bypass/delay timers, photocells, or time clocks, especially in low occupancy areas such as closets and restrooms.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
E25. Use daylight dimming systems in spaces near windows or skylights to maximize daylight harvesting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E26. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heating, Ventilating, and Air Conditioning (HVAC)			
E27. REQUIRED: Complete regularly scheduled maintenance on your HVAC (heating, ventilation and air-conditioning) and refrigeration systems at least once a year or per manufacturer's specifications.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E28. Use programmable thermostats to automatically regulate thermostat settings and set-backs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E29. Set thermostat between 66 and 70 degrees F in winter (and lower when building is unoccupied) and between 74 and 78 degrees F in summer (and higher when building is unoccupied).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E30. Install and use ceiling fans for air circulation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E31. Use natural ventilation instead of air conditioning. Where possible, open windows at opposite ends of space (and turn off cooling system) to facilitate cross breezes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E32. Prohibit personal space heaters.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E33. Install variable frequency drives (VFDs) on pumps and motors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E34. Use economizers on air conditioning systems to increase air circulation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E35. Use controls that regulate ventilation based on occupancy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E36. Select ENERGY STAR qualified units when replacing or installing light (under 200,000 BTU/hour) commercial packaged HVAC equipment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E37. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
Alternative Energy			
E38. Purchase renewable energy certificates (RECs).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E39. Purchase clean, renewable energy through a competitive supplier.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E40. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERFORMANCE MEASUREMENT			
All businesses are REQUIRED to measure performance in at least one way:			
E41. Track monthly energy use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E42. Develop a carbon reduction plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E43. Estimate the energy and financial savings from converting to more efficient fluorescent lamps or other efficient lighting fixtures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E44. Obtain a "walk through" energy audit that identifies basic and low-cost energy saving opportunities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E45. Conduct retro-commissioning or obtain an "investment grade" audit that focuses on capital intensive opportunities and provides a high degree of engineering and data analysis.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E46. Complete a CO2 or eco-footprint calculator to determine your organization's greenhouse gas emissions and other environmental impacts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E47. Measure performance of other energy efficiency and renewable energy actions in this section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

F. Stormwater Management & Efficient Water Use

POLICY	YES	NO	n/a
F1. REQUIRED: Establish stormwater management and water conservation policies. Use the actions in this section to guide the development of these policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS			
From the PROGRAMS AND ACTIONS and PERFORMANCE MEASUREMENT sections, manage stormwater runoff and conserve water: Through the 5 REQUIRED measures plus: At least 3 additional measures for SMALL businesses At least 6 additional measures for LARGE businesses			
<i>Stormwater Management</i>			
F2. REQUIRED: Use a broom when cleaning outdoor areas. Alternatively, use equipment that collects dirty water (and dispose water through the sanitary sewer system and not through storm drains).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F3. REQUIRED: Keep trash cans, dumpsters, and recycling containers covered and ensure tight fitting lids.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F4. REQUIRED: Keep a spill kit handy to catch/collect spills from leaking company or employee vehicles, or for any accidental liquid material spills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F5. REQUIRED: Do not wash cars, equipment, or other items outside where run-off water flows straight to the storm drain; direct wash water to landscaped areas or a sanitary sewer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F6. Set up an annual program to educate staff and relevant contractors about the benefits of reducing runoff from your site.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F7. Keep company vehicles well maintained to prevent leaks and minimize emissions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F8. Establish "ground staining" inspection routine in parking lots for oil and chemical leaks from vehicles (and encourage employees to do the same).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F9. Keep receiving/loading docks, dumpsters, and parking areas free of litter, debris, oil, chemicals, and other contaminants.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
F10. Post signs at key areas (e.g., loading docks, dumpster areas, outside spigots) describing proper practices to prevent pollutants from reaching storm drains.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F11. Provide an outdoor ashtray or cigarette butt can for smokers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F12. Adopt a road near your business and sponsor a litter cleaning program with employees to routinely clean the roadside.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F13. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water Conservation			
F14. REQUIRED: Regularly check for and repair all water leaks in your facility.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F15. Post signs in restrooms and kitchen to encourage water conservation and reporting of leaks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F16. Use dishwasher only when full and post signage to remind employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F17. Replace toilets which use three or more gallons per flush with toilets using 1.6 gallons per flush or less, or dual flush toilets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F18. Install toilet retrofit kits that reduce water usage.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F19. Replace urinals with efficient 1.0 gallons or less per flush or waterless models.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F20. Use water efficient showerheads and faucets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F21. Adjust boiler and cooling tower blowdown rate to maintain total dissolved solids at levels recommended by manufacturer's specifications.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F22. Replace single-pass, water-cooled equipment such as air conditioning units, with air-cooled equipment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F23. Use positive shut off nozzles on all hoses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
F24. Include moisture retentive additives in ornamental planters to reduce watering requirements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F25. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERFORMANCE MEASUREMENT			
F26. Track water use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F27. Estimate the volume of stormwater managed through best practices (e.g., permeable pavers, rain gardens, cisterns, conservation landscaping, etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F28. Measure performance of other stormwater management and/or water conservation actions in this section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

G. Transportation & Travel

POLICY		YES	NO	n/a
G1.	REQUIRED: Establish transportation and travel policies. Use the actions in this section to guide the development of these policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS				
Implement transportation and travel measures: Through the 2 REQUIRED measures plus: At least 5 additional measures for SMALL businesses At least 10 additional measures for LARGE businesses				
G2.	REQUIRED: Regularly distribute, and provide a display for, information on transit, car/van pooling, and other commute alternatives.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G3.	REQUIRED: Promote the County's Guaranteed Ride Home and Regional Ride-Sharing programs.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G4.	Appoint a transportation benefits coordinator to interact with Montgomery County Commuter Services and periodically distribute information about commuting alternatives and transit services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G5.	Provide incentive for employees to live near where they work by participating in the State of Maryland's Smart Keys 4 Employees program.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G6.	Offer employer-paid transit benefits and receive a 50% tax credit through the Maryland Commuter Tax Credit program.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G7.	Enable your employees to set aside up to \$230 a month of their pre-tax salary for transit and vanpooling.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G8.	When recruiting and training personnel, highlight company benefits that encourage non-single occupancy vehicle travel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G9.	Schedule Commuter Information Days and offer special incentives to employees who take positive actions toward adopting non-single occupancy vehicle travel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G10.	Obtain at least a 25 percent employee registration rate in the Regional Ride-Sharing program.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G11.	Obtain 50 percent or greater employee registration rate in the Regional Ride-Sharing program.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

		YES	NO	n/a	
G12.	Obtain at least a 25 percent employee registration rate in the Guaranteed Ride Home program.	\$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G13.	Obtain 50 percent or greater employee registration rate in the Guaranteed Ride Home program.	\$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G14.	Offer telecommuting opportunities and/or flexible schedules, job sharing, and compressed work weeks.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G15.	Offer on-site lockers and showers, or make arrangements for the use of nearby facilities, to encourage walking, jogging, or bicycling to work.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G16.	Provide bicycle racks.	\$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G17.	Offer secure bicycle storage for staff and customers.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G18.	Provide incentives for alternative mode commuting that are greater than for solo driving.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G19.	Offer incentives such as rebates on bicycles bought for commuting, bicycle accessories and maintenance, walking shoes, etc.	\$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G20.	Set up car and van pools and take advantage of discounted parking rates in County parking garages. Offer employees incentives for car or van pooling.	\$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G21.	Offer a shuttle service to and from bus, train, and/or Metrorail stops.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G22.	Provide an employer owned van for employee vanpooling.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G23.	Organize "pool parties" to enable employees to meet other prospective carpoolers and vanpoolers at their work site.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G24.	Obtain 80 percent or greater participation in the County's Annual Commuter Survey, and meet with the County to plan ways to increase non-single vehicle occupancy commuting.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G25.	Pay employees for a portion of their commuting time on transit if they document their work during that period of time.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G26.	Establish no-idling procedures that require fleet and personal vehicles to be turned off when loading and unloading.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
G27. Reduce vehicle miles traveled by patronizing local businesses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G28. Coordinate delivery routes to minimize/eliminate unnecessary trips.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G29. Establish a procedure that includes regular tire pressure checks on company vehicles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G30. Provide access to a tire air compressor on the premises for company and employee vehicles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G31. Convert company vehicles to low emission vehicles (electric, hybrid, natural gas or alternative fuels from waste oils).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G32. Replace company fleet vehicles with car sharing membership program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G33. Provide car sharing membership to all employees as a benefit for their use outside of work to encourage reduced private vehicle ownership.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G34. While on business travel, encourage employees to take the train, bus, or subway when feasible instead of a rental car. If a rental car is necessary, use fuel efficient vehicles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G35. Utilize videoconferencing and other technological solutions that reduce employee travel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G36. Patronize hotels that are certified by an environmentally preferable hotel program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G37. Discourage flying when other options such as rail travel or videoconferencing are readily available.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G38. Offset company's vehicle travel CO2 emissions through certified/verified carbon offsets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G39. Offset company's air travel CO2 emissions through certified/verified carbon offsets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G40. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
PERFORMANCE MEASUREMENT			
All businesses are REQUIRED to measure performance in at least one way:			
G41. Complete a Traffic Mitigation Plan and annually report your progress. (NOTE: This is a legal REQUIREMENT for certain businesses.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G42. Determine greenhouse gas emission reductions resulting from reduced car and airplane travel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G43. Estimate the financial savings from no-idling measures and/or technology enhancements to your vehicle fleet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G44. Measure performance of other transportation and travel actions in this section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

Application for Office/Retail - Owner Occupier

Thank you for your interest in the Montgomery County Green Business Certification Program! This application, and its comprehensive checklist and resource links, are designed to be an easy-to-use tool to assist and guide businesses in greening their operations. Please follow the steps below to become a certified Green Business and get recognized for your environmental stewardship.

1. Before you start the application, you should review information on the program website at MCGreenBiz.org.
 - a. Use the Resource Guide! The application is integrated with an extensive Resource Guide that can be accessed by clicking on the actions **highlighted in green**. But you can also preview the application and the Resource Guide on-line before starting at MCGreenBiz.org/guide.
 - b. If you have any questions, check out the Frequently Asked Questions section at MCGreenBiz.org/FAQs.
2. Begin the application by completing the contact information section on the following page.
3. In each section, there are required actions as well as a specified number of additional actions that must be completed in order to receive certification as a Green Business. The number of actions varies depending on the number of full-time equivalent employees (FTEs) at all locations of your organization (both inside and outside Montgomery County). Businesses with fewer than 25 FTEs are considered SMALL businesses. Those with 25 or more FTEs are considered LARGE.
4. You are encouraged to use the "Other" boxes to tell us about innovative actions you are taking that are not included in the application. As long as they meet the spirit of the program, you will receive credit!
5. The "n/a" check box should be checked when you do not have control over a particular item or it does not apply to your business. If an action is beyond your control, but you have successfully collaborated with your property manager to implement the action, check "Yes" and get credit for it!
6. **VERY IMPORTANT!** All policies and performance measurements must be documented and submitted with your application. For every "Yes" response that is not self-explanatory, explain briefly how you satisfy the requirement in the boxed area provided for supporting information at the bottom of each page (see example application). Additional supporting documentation that enhances your application is strongly encouraged and can be submitted electronically with your application or provided during the on-site visit.
7. The cost of certification, which is valid for two years, is \$100 for SMALL businesses and \$250 for large businesses. Following submission of the application, please send a check, payable to *Montgomery County Government*, to:

Green Business Certification Program
255 Rockville Pike, Suite 120
Rockville, MD 20850

8. Submit your completed application on-line by clicking the button below.

Click Button to Submit Application

9. Following the submission of your application, the program office will contact you to arrange for an on-site verification visit to review your facility and meet with staff involved in implementing environmental actions.
10. If you have questions, please e-mail the program office at MCGreenBiz@montgomerycountymd.gov or contact Doug Weisburger, Green Business Certification Program Manager, at 240-777-7775.



Green Business Certification Program

Montgomery County, Maryland

Business Name: _____

Street Address: _____ City: _____ Zip: _____

Primary Contact: _____ Title: _____ Phone: _____

E-Mail Address: _____

Secondary Contact: _____ Title: _____ Phone: _____

E-Mail Address: _____

Nature of Business: _____ Number of Full-Time Equivalent Employees: _____

Do you own or lease the building in which you are located? Own the space Lease the space

The application links to websites containing information from numerous companies, organizations and individuals. The opinions and information contained in these sources do not necessarily reflect the opinions of the Green Business Certification Program. Although the information contained in these websites is believed to be reliable, the accuracy, legality, timeliness, or completeness of that information cannot be guaranteed. Advice received through these websites should not be relied upon for financial, legal, or tax decisions.



Green Business Certification Program

Montgomery County, Maryland

A. Organizational Commitment

POLICY	YES	NO	n/a
A1. REQUIRED: Develop and display an environmental policy that could include a mission statement, corporate values, and strategic goals that demonstrate a commitment to a green workplace.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS			
Engage management and staff in the Green Business Certification Program: Complete 3 of the following on-going practices:			
A2. Incorporate sustainability into job descriptions and/or performance appraisals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A3. Incorporate sustainability into training programs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A4. Incorporate sustainability into employee orientations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A5. Create employee resource guide outlining company policies, employee responsibilities and (if applicable) green building features.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A6. Incorporate sustainability into staff meeting discussions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A7. Offer brown bag lunches, seminars, or workshops with sustainability as a focus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A8. Elicit staff ideas and input on greening the workplace and operations through surveys or other means.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A9. Other: <input style="width: 600px; height: 20px;" type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
From the PROGRAMS AND ACTIONS and PERFORMANCE MEASUREMENT sections (including A2-A8 not completed to meet the requirement above), complete: At least 2 more measures for SMALL businesses At least 4 more measures for LARGE businesses			
A10. Post educational information in your facility about steps you are taking to be a sustainable organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A11. Highlight your sustainability efforts on your website.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
A12. Appoint personnel responsible for green initiatives and organize a "green" steering committee or workgroup.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A13. Offer tours and/or distribute e-newsletter to customers and other stakeholders highlighting green practices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A14. Encourage at least one other business to become a certified green business.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A15. Provide opportunities for employees to green their personal lives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A16. Offer socially responsible investment options as part of employee retirement benefit programs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A17. Participate in or sponsor environmental restoration projects and other community efforts to reduce environmental impacts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A18. Offer customers environmentally responsible products and services that demonstrate a commitment to sustainability.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A19. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERFORMANCE MEASUREMENT			
A20. Measure performance of your organizational commitment to sustainability by completing an annual sustainability report.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A21. Become "carbon neutral" through the purchase of verified/certified carbon offsets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A22. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

B. Waste Reduction & Recycling

POLICY		YES	NO	n/a
B1.	REQUIRED: Establish waste reduction and recycling policies. Use the actions in this section to guide the development of these policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS				
General: The following 2 measures are required for all businesses:				
B2.	REQUIRED: Educate all employees and customers about the organization's recycling and waste reduction programs, as well as efforts to buy recycled supplies and materials.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B3.	REQUIRED: Provide containers for recyclable materials and collection area(s) for storage of recyclable materials. Provide clear information about what can and cannot be recycled.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Reduce waste: At least 5 ways for SMALL businesses At least 8 ways for LARGE businesses			
B4.	Discourage the printing of e-mails, and transmit documents electronically through the use of PDFs or hyperlinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B5.	Set copier/printer defaults to double-sided.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B6.	Practice efficient printing and copying by using the size reduction feature to enable printing of two pages of a document or book onto one page.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B7.	Eliminate or redesign forms to use less paper; or switch forms (such as invoices) to electronic format.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B8.	Use a bulletin board or routing lists for memos and journals to reduce printed copies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B9.	Eliminate paper copies of newspapers, journals, phone books, etc. by switching to on-line subscriptions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B10.	Reduce unwanted mail.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above.



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
B11. Design marketing and outreach materials that reduce paper use, such as e-newsletters.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B12. Avoid the use of "hard to recycle" materials such as packaging made from Styrofoam™ (polystyrene).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B13. In the lunch/break room, replace disposables with reusable kitchenware (e.g., mugs, utensils, etc.) and use refillable containers for sugar, salt & pepper, etc. to avoid individual condiment packets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B14. For office functions, utilize reusable kitchenware.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B15. Reduce paper use in the bathroom (toilet paper, paper towels) using informational signage, dispensers that regulate sheet length, air dryers, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B16. Use optical scanners for inventory management, which give more details about inventory and allow for more precise ordering.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B17. Lease rather than purchase computers and printers. Alternatively, reuse computers or component parts within your own company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B18. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<div style="border: 1px solid black; padding: 5px; background-color: #f0f0f0;"> <p>Reuse material: At least 2 ways for SMALL businesses At least 4 ways for LARGE businesses</p> </div>			
B19. For drafts and internal documents, print on previously printed paper; designate a draft printer tray; and/or reuse office paper as scratch pads.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B20. Use continuous circulation envelopes to route information to employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B21. Give or sell reusable bags.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B22. Offer a small incentive to customers who bring their own shopping bags, return packaging for reuse, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B23. Reuse paper, cardboard, or plastic packaging materials.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B24. Designate a sharing and reuse area for office supplies such as binders, folders and staplers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
B25. Donate furniture, supplies, computers, pagers/phones, scrap materials, etc., or use a waste exchange program where businesses can benefit from exchanging unwanted items.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B26. Donate unopened cans of paints/solvents or return them to the place of purchase.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B27. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recycle the 5 REQUIRED materials and: At least 2 additional materials for SMALL businesses At least 3 additional materials for LARGE businesses			
B28. REQUIRED: Mixed paper (including cardboard)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B29. REQUIRED: Commingled materials (cans, bottles, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B30. REQUIRED: Scrap metal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B31. REQUIRED: Yard trim (grass clippings, leaves, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B32. REQUIRED: Christmas trees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B33. Pallets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B34. Construction and demolition material	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B35. Toner/ink cartridges	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B36. Electronic and computer equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B37. Carpeting and carpet padding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B38. Fluorescent light bulbs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B39. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
PERFORMANCE MEASUREMENT			
All businesses are REQUIRED to measure performance in at least one way:			
B40. Complete the Montgomery County Business Recycling and Waste Reduction Plan and the Montgomery County Annual Business Recycling and Waste Reduction Report. (NOTE: This is legal REQUIREMENT for certain businesses.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B41. Conduct a solid waste assessment to identify ways to reduce waste and increase recycling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B42. Measure the environmental benefits associated with your waste reduction and recycling actions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B43. Quantify the financial and environmental benefits associated with a paper reduction program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B44. Measure performance of other waste reduction and recycling measures in this section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

C. Environmentally Responsible Purchasing

POLICY	YES	NO	n/a
C1. REQUIRED: Establish environmentally responsible purchasing policies. Use the actions in this section to guide the development of these policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS			
Buy the one REQUIRED item with recycled content and: At least 3 additional items for SMALL businesses At least 5 additional items for LARGE businesses			
C2. REQUIRED: Letterhead, envelopes, and copier/printer paper with at least 30% post-consumer recycled content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C3. Copier/printer paper with 100% post-consumer recycled content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C4. Copier/printer paper processed chlorine-free (PCF)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C5. File folders, note pads, and business cards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C6. Paper towels, tissues, and toilet paper with 100% recycled content and PCF	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C7. Garbage bags	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C8. Boxes and bags for retail use and/or shipping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C9. Laser printer and copier toner and ink cartridges (remanufactured)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C10. Carpet, carpet padding, or flooring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C11. Remodeling/construction materials such as cabinets, fixtures, ceramic and ceiling tiles, drywall, insulation, exterior sheathing, composite lumber/wood, roofing, concrete, plastic "lumber," etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C12. Other: <input style="width: 500px; height: 20px;" type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
Green your supply chain and purchasing practices: At least 3 ways for SMALL businesses At least 9 ways for LARGE businesses			
Procurement Practices			
C13. Coordinate purchasing in order to eliminate duplicative or excess purchases, and minimize deliveries.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C14. Create a list of approved vendors based on environmental criteria and use whenever possible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C15. Give preference to vendors who offer products that meet high environmental criteria.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C16. Participate in cooperative purchasing programs with nearby businesses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C17. Give preference to locally produced items.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C18. Prohibit use of bottled water for office functions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C19. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Green Products and Services			
C20. Purchase products that have reusable or returnable containers or packaging.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C21. Purchase EPEAT registered electronic products.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C22. Purchase paper, wood, or other products with a green third-party certification.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C23. Utilize lighter stock of paper or alternatives made from bamboo, hemp, organic cotton, or kenaf.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C24. Stock bathroom with biodegradable soap without antibacterial agents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C25. Purchase or obtain previously used furniture, supplies, or construction materials.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
C26. Replace aerosols with pump dispensers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C27. Use low or no VOC products such as paint, paint removal products, cleaning products, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C28. When ordering catered food, utilize "green" caterers that provide reusable kitchenware, use locally grown and/or organic food, select sustainably harvested food, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C29. If tea and coffee are provided, make sure they are Fair Trade certified and have low environmental impact (e.g., organic, shade grown, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C30. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERFORMANCE MEASUREMENT			
All businesses are REQUIRED to measure performance in at least one way:			
C31. Measure the waste and cost reduction resulting from the use of remanufactured ink cartridges.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C32. Quantify the environmental benefits associated with better paper purchasing choices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C33. Calculate the environmental benefits associated with the purchase of EPEAT products.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C34. Calculate the savings and environmental impacts realized through the elimination of bottled water.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C35. Measure performance of other environmentally responsible purchasing actions in this section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above.



Green Business Certification Program

Montgomery County, Maryland

D. Pollution Prevention

POLICY	YES	NO	n/a
D1. REQUIRED: Establish pollution prevention policies. Use the actions in this section to guide the development of these policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS			
Prevent pollution: Through the 5 REQUIRED actions and: At least 5 additional actions for SMALL businesses At least 9 additional actions for LARGE businesses			
D2. REQUIRED: Store all chemical, petroleum and other harmful products inside or under cover in their original containers or properly labeled secondary containers with tight fitting lids.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D3. REQUIRED: Store all chemical, petroleum and other harmful products in secure, controlled areas, away from ignition sources, food storage areas, and sewer and storm drains.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D4. REQUIRED: Sign up for e-mail notifications from Clean Air Partners regarding air quality and provide information to employees about actions they can take to reduce air pollution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D5. REQUIRED: If you generate less than 220 pounds of hazardous waste, utilize the County's Ecowise program to manage it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D6. REQUIRED: Ensure proper collection, recycling, and disposal of automotive fluids when performing maintenance on company vehicles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D7. Place trash and recycling receptacles at exterior locations such as building entrances/exits, parking lots and other appropriate places, and ensure they are emptied regularly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D8. Provide or participate in e-cycling events for the collection of electronic waste from the business and/or employees' homes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D9. On Code Orange, Red, or Purple days, prohibit lawn mowing/maintenance and painting, and delay vehicle and equipment fueling and maintenance until late afternoon or until air quality improves.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D10. Encourage staff to telecommute or use public transit on Code Orange, Red and Purple Days.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
D11. Arrange for a free pollution prevention site visit and opportunity assessment through the Maryland Department of Environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D12. Store deliveries and supplies inside and/or under cover.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D13. Restrict use of hazardous products by buying them in small quantities and limiting access to authorized staff.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D14. When replacing standard fluorescent bulbs, use low mercury fluorescent bulbs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D15. Use rechargeable batteries in battery operated appliances, flashlights, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D16. Replace toxic permanent ink markers/pens, correction fluid, etc. with non-toxic (e.g. water-based) alternatives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D17. Print promotional materials with vegetable or other low-VOC inks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D18. Use natural or low emission building/furniture materials and carpets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D19. Replace harmful cleaning products and practices with safer alternatives, and inform cleaning staff or contractor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D20. Use one or a few multipurpose cleaners, rather than many special-purpose cleaners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D21. Before using fertilizer, test soil to determine what fertilizer is required and apply accordingly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D22. Use manual or electric (not gas) powered tools for lawn care, landscaping, and snow removal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D23. For de-icing sidewalks and parking lots, use less harmful alternatives to salt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D24. Pick weeds by hand rather than using herbicides (weed killers), which can contaminate local streams and the Chesapeake Bay.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D25. Use traps, barriers and less toxic pesticides (such as soaps, oils, microbials and baits). Apply on an as-needed (vs. set) schedule.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
D26. Specify integrated pest management (IPM) in pest control contracts (e.g., non-chemical pest prevention and pest exclusion).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D27. When chemical pesticides are necessary, use those labeled caution rather than warning or danger. Apply sparingly and not within 24 hours of a forecasted rain event.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D28. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERFORMANCE MEASUREMENT			
All businesses are REQUIRED to measure performance in at least one way:			
D29. Track volume of e-waste collected for recycling/reuse.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D30. Measure performance of other pollution prevention actions in this section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

E. Energy Efficiency & Renewable Energy

POLICY	YES	NO	n/a
E1. REQUIRED: Establish energy management policies. Use the actions in this section to guide the development of these policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS			
Save energy: Through the 5 REQUIRED measures plus: At least 5 additional measures for SMALL businesses At least 10 additional measures for LARGE businesses			
<i>General</i>			
E2. Use ENERGY STAR labeled office equipment and ensure energy saving features are enabled and, where applicable, use network controls to regulate power use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E3. Prohibit personal refrigerators by providing high-efficiency (e.g. ENERGY STAR) refrigerators in common areas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E4. Replace refrigerator purchased before 2000 with new ENERGY STAR labeled refrigerator.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E5. Set refrigerator temperatures between 35 and 38 degrees F and freezer temperatures between 0 and 5 degrees F.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E6. Prohibit energy-intensive water coolers by using tap water (provide a faucet mounted filter if desired) or cold water from the refrigerator (from containers or an in-door dispenser).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E7. If you use water coolers or cold vending machines, use models with sensors that adjust operation consistent with their use and place machines away from direct sunlight.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E8. After brewing coffee or tea, turn off appliance. Rewarm liquid by using a microwave or keep warm by using a thermos or pump pot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E9. Lower hot water heater thermostats to achieve 120 degrees F at all faucets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E10. Install power strips to allow employees to easily control "phantom" power loads from equipment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
E11. Replace cathode ray tube (CRT) monitors with liquid crystal displays (flat panel monitors).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E12. Put up signs at elevators to encourage the use of stairs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E13. Develop contract language for cleaning service requiring lights to be turned off after areas are cleaned and/or schedule daytime cleaning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E14. Where available, participate in commercial "demand response" programs offered by utilities or "demand response service providers."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E15. Tighten the building envelope to seal air gaps around doors and windows.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E16. Insulate all accessible hot water pipes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E17. Install reflective cool roofing or add a green roof.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E18 Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lighting			
E19. REQUIRED: Turn off all lighting and electronic devices when not in use. Use signage at light switches reminding staff to turn off lights.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E20. REQUIRED: Replace all T12 fluorescent lamps with energy efficient T8 or T5 lamps with electronic ballasts, or lighting with equivalent performance. \$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E21. REQUIRED: Replace any incandescent bulbs with energy efficient compact fluorescent (CFLs) or other high efficiency lamps where appropriate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E22. REQUIRED: Use LED, electroluminescent, or photoluminescent exit signs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E23. Arrange workspace to take advantage of areas with natural light, or provide task lighting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E24. Where appropriate, install energy saving lower wattage fluorescent lamp replacements for 32 watt T8 lamps.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
E25. Use and regularly maintain lighting controls such as occupancy sensors, bypass/delay timers, photocells, or time clocks, especially in low occupancy areas such as closets and restrooms.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E26. Use daylight dimming systems in spaces near windows or skylights to maximize daylight harvesting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E27. Use and regularly maintain lighting controls such as timers, photocells or motion sensors on all exterior lighting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E28. Upgrade all exterior lighting systems to high efficiency fixtures, preferably those certified by the International Dark Sky Association.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E29. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heating, Ventilating, and Air Conditioning (HVAC)			
E30. REQUIRED: Complete regularly scheduled maintenance on your HVAC (heating, ventilation and air-conditioning) and refrigeration systems at least once a year or per manufacturer's specifications.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E31. Use a building energy management system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E32. Use programmable thermostats to automatically regulate thermostat settings and set-backs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E33. Set thermostat between 66 and 70 degrees F in winter (and lower when building is unoccupied) and between 74 and 78 degrees F in summer (and higher when building is unoccupied).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E34. Install and use ceiling fans for air circulation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E35. Use natural ventilation instead of air conditioning. Where possible, open windows at opposite ends of space (and turn off cooling system) to facilitate cross breezes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E36. Prohibit personal space heaters.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E37. Install variable frequency drives (VFDs) on pumps and motors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E38. Use economizers on air conditioning systems to increase air circulation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
E39. Use controls that regulate ventilation based on occupancy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E40. Select ENERGY STAR qualified units when replacing or installing light (under 200,000 BTU/hour) commercial packaged HVAC equipment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E41. Switch all electric heating systems including furnaces, boilers, and water heaters to natural gas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E42. Shade sun-exposed windows and walls by planting shade trees and shrubbery, or using awnings and sunscreens.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E43. Apply window film or other treatments to reduce solar heat gain on south and west facing single-pane windows if no natural shading is present.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E44. When replacing or upgrading windows and doors, install energy efficient models.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E45. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alternative Energy			
E46. Purchase renewable energy certificates (RECs).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E47. Purchase clean, renewable energy through a competitive supplier.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E48. Install on-site renewable energy systems such as photovoltaic, solar water heating, or geothermal systems. \$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E49. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
PERFORMANCE MEASUREMENT			
All businesses are REQUIRED to measure performance in at least one way:			
E50. Track monthly energy use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E51. Develop a carbon reduction plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E52. Estimate the energy and financial savings from converting to more efficient fluorescent lamps or other efficient lighting fixtures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E53. Obtain a "walk through" energy audit that identifies basic and low-cost energy saving opportunities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E54. Conduct retro-commissioning or obtain an "investment grade" audit that focuses on capital intensive opportunities and provides a high degree of engineering and data analysis.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E55. Complete a CO2 or eco-footprint calculator to determine your organization's greenhouse gas emissions and other environmental impacts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E56. Measure performance of other energy efficiency and renewable energy actions in this section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

F. Stormwater Management & Efficient Water Use

POLICY		YES	NO	n/a
F1.	REQUIRED: Establish stormwater management and water conservation policies. Use the actions in this section to guide the development of these policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS				
Manage stormwater runoff: Through the 6 REQUIRED measures plus: At least 4 additional measures for SMALL businesses At least 7 additional measures for LARGE businesses				
F2.	REQUIRED: Use a broom when cleaning outdoor areas. Alternatively, use equipment that collects dirty water (and dispose water through the sanitary sewer system and not through storm drains).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F3.	REQUIRED: Keep trash cans, dumpsters, and recycling containers covered and ensure tight fitting lids.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F4.	REQUIRED: Regularly maintain on-site stormwater management structures (only for businesses with stormwater management structures on their property).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F5.	REQUIRED: Keep a spill kit handy to catch/collect spills from leaking company or employee vehicles, or for any accidental liquid material spills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F6.	REQUIRED: Check facility's water drain and HVAC condensate drain lines for illicit connections.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F7.	REQUIRED: Do not wash cars, equipment, or other items outside where run-off water flows straight to the storm drain; direct wash water to landscaped areas or a sanitary sewer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F8.	Set up an annual program to educate staff and relevant contractors about the benefits of reducing runoff from your site.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F9.	Keep company vehicles well maintained to prevent leaks and minimize emissions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F10.	Establish "ground staining" inspection routine in parking lots for oil and chemical leaks from vehicles (and encourage employees to do the same).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

		YES	NO	n/a
F11.	Keep receiving/loading docks, dumpsters, and parking areas free of litter, debris, oil, chemicals, and other contaminants.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F12.	Post signs at key areas (e.g., loading docks, dumpster areas, outside spigots) describing proper practices to prevent pollutants from reaching storm drains.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F13.	Provide an outdoor ashtray or cigarette butt can for smokers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F14.	Redirect downspouts toward stabilized landscaped areas where possible. Do not channel directly onto paved areas such as driveway, sidewalk, or street.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F15.	Label all storm drains on your property with "No Dumping - Drains to Local Creek" message.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F16.	Regularly check for, remove, and properly dispose of litter, debris, and soil from storm drains on your property.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F17.	Use shut-off valves at storm drains or keep temporary storm drain plugs at loading docks or outdoor areas for quick spill response.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F18.	Use permeable pavement, or planted area instead of hardscape.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F19.	Install rain barrels and/or cisterns at downspouts to catch rainwater for irrigation use.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F20.	Establish or redesign landscaped areas to be rain gardens.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F21.	Install a green roof.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F22.	Plant/maintain trees to help intercept, clean, and cool rainwater and reduce the amount of water that runs off buildings, hard surfaces, and roads.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F23.	Replace turf areas with conservation landscaping using native plants to reduce water, fertilizer, and mowing.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F24.	Adopt a road near your business and sponsor a litter cleaning program with employees to routinely clean the roadside.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F25.	Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
Conserve water: Through the 1 REQUIRED measure plus: At least 2 additional measures for SMALL businesses At least 3 additional measures for LARGE businesses			
F26. REQUIRED: Regularly check for and repair all water leaks in your facility.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F27. Post signs in restrooms and kitchen to encourage water conservation and reporting of leaks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F28. Use dishwasher only when full and post signage to remind employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F29. Replace toilets which use three or more gallons per flush with toilets using 1.6 gallons per flush or less, or dual flush toilets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F30. Install toilet retrofit kits that reduce water usage.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F31. Replace urinals with efficient 1.0 gallons or less per flush or waterless models.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F32. Use water efficient showerheads and faucets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F33. Adjust boiler and cooling tower blowdown rate to maintain total dissolved solids at levels recommended by manufacturer's specifications.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F34. Replace single-pass, water-cooled equipment such as air conditioning units, with air-cooled equipment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F35. Capture condensate from air conditioning systems for reuse.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F36. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conserve landscaping water: Through the 1 REQUIRED measure plus: At least 3 additional measures for SMALL businesses At least 5 additional measures for LARGE businesses			
F37. REQUIRED: Do not water between 10 a.m. and 3 p.m.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
F38. Test irrigation sprinklers 4 times per year to ensure proper operation and coverage, and repair all broken or defective sprinkler heads/nozzles, lines, and valves.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F39. Adjust sprinklers for proper coverage and avoid runoff onto paved surfaces.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F40. Use drip irrigation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F41. Install a self-adjusting, weather-based irrigation controller that automatically tailors watering schedules to match local weather, plant types, and other site-specific conditions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F42. Reduce the frequency of watering, but water longer, to encourage percolation and deep root growth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F43. Select native plant species adapted to local conditions, particularly those that are drought tolerant.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F44. Hydrozone: Group plants with similar water requirements together on the same irrigation line, separating plants with different water requirements on separate irrigation lines.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F45. Use reclaimed water for irrigation and other approved uses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F46. Use positive shut off nozzles on all hoses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F47. Mow grass to a minimum of 3" height and leave grass clippings on lawn ("grasscycling").	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F48. Annually mulch all non-turf areas or use non-invasive ground cover to increase moisture retention, reduce weeds, and prevent exposed soil from washing landscaped areas into storm drains.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F49. Amend soils with compost to reduce runoff and promote plant health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F50. Include moisture retentive additives in ornamental planters to reduce watering requirements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F51. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
PERFORMANCE MEASUREMENT			
All businesses are REQUIRED to measure performance in at least one way:			
F52. Track water use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F53. Estimate the volume of stormwater managed through best practices (e.g., permeable pavers, rain gardens, cisterns, conservation landscaping, etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F54. Measure performance of other stormwater management and/or water conservation actions in this section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

G. Transportation & Travel

POLICY	YES	NO	n/a
G1. REQUIRED: Establish transportation and travel policies. Use the actions in this section to guide the development of these policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROGRAMS AND ACTIONS			
Implement transportation and travel measures: Through the 2 REQUIRED measures plus: At least 5 additional measures for SMALL businesses At least 10 additional measures for LARGE businesses			
G2. REQUIRED: Regularly distribute, and provide a display for, information on transit, car/van pooling, and other commute alternatives.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G3. REQUIRED: Promote the County's Guaranteed Ride Home and Regional Ride-Sharing programs.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G4. Appoint a transportation benefits coordinator to interact with Montgomery County Commuter Services and periodically distribute information about commuting alternatives and transit services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G5. Provide incentive for employees to live near where they work by participating in the State of Maryland's Smart Keys 4 Employees program.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G6. Offer employer-paid transit benefits and receive a 50% tax credit through the Maryland Commuter Tax Credit program.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G7. Enable your employees to set aside up to \$230 a month of their pre-tax salary for transit and vanpooling.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G8. When recruiting and training personnel, highlight company benefits that encourage non-single occupancy vehicle travel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G9. Schedule Commuter Information Days and offer special incentives to employees who take positive actions toward adopting non-single occupancy vehicle travel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G10. Obtain at least a 25 percent employee registration rate in the Regional Ride-Sharing program.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G11. Obtain 50 percent or greater employee registration rate in the Regional Ride-Sharing program.	\$ <input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

		YES	NO	n/a	
G12.	Obtain at least a 25 percent employee registration rate in the Guaranteed Ride Home program.	\$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G13.	Obtain 50 percent or greater employee registration rate in the Guaranteed Ride Home program.	\$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G14.	Offer telecommuting opportunities and/or flexible schedules, job sharing, and compressed work weeks.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G15.	Offer on-site lockers and showers, or make arrangements for the use of nearby facilities, to encourage walking, jogging, or bicycling to work.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G16.	Provide bicycle racks.	\$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G17.	Offer secure bicycle storage for staff and customers.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G18.	Provide incentives for alternative mode commuting that are greater than for solo driving.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G19.	Offer incentives such as rebates on bicycles bought for commuting, bicycle accessories and maintenance, walking shoes, etc.	\$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G20.	Set up car and van pools and take advantage of discounted parking rates in County parking garages. Offer employees incentives for car or van pooling.	\$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G21.	Offer a shuttle service to and from bus, train, and/or Metrorail stops.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G22.	Provide a employer owned van for employee vanpooling.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G23.	Organize "pool parties" to enable employees to meet other prospective carpoolers and vanpoolers at their work site.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G24.	Obtain 80 percent or greater participation in the County's Annual Commuter Survey, and meet with the County to plan ways to increase non-single vehicle occupancy commuting.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G25.	Pay employees for a portion of their commuting time on transit if they document their work during that period of time.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G26.	Establish no-idling procedures that require fleet and personal vehicles to be turned off when loading and unloading.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
G27. Reduce vehicle miles traveled by patronizing local businesses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G28. Coordinate delivery routes to minimize/eliminate unnecessary trips.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G29. Establish a procedure that includes regular tire pressure checks on company vehicles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G30. Provide access to a tire air compressor on the premises for company and employee vehicles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G31. Convert company vehicles to low emission vehicles (electric, hybrid, natural gas or alternative fuels from waste oils).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G32. Replace company fleet vehicles with car sharing membership program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G33. Provide car sharing membership to all employees as a benefit for their use outside of work to encourage reduced private vehicle ownership.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G34. Offer electric vehicle recharge ports for visitors and staff using electric vehicles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G35. While on business travel, encourage employees to take the train, bus, or subway when feasible instead of a rental car. If a rental car is necessary, use fuel efficient vehicles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G36. Utilize videoconferencing and other technological solutions that reduce employee travel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G37. Patronize hotels that are certified by an environmentally preferable hotel program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G38. Discourage flying when other options such as rail travel or videoconferencing are readily available.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G39. Offset company's vehicle travel CO2 emissions through certified/verified carbon offsets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G40. Offset company's air travel CO2 emissions through certified/verified carbon offsets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G41. Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)



Green Business Certification Program

Montgomery County, Maryland

	YES	NO	n/a
PERFORMANCE MEASUREMENT			
All businesses are REQUIRED to measure performance in at least one way:			
G42. Complete a Traffic Mitigation Plan and annually report your progress. (NOTE: This is a legal REQUIREMENT for certain businesses.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G43. Determine greenhouse gas emission reductions resulting from reduced car and airplane travel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G44. Estimate the financial savings from no-idling measures and/or technology enhancements to your vehicle fleet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G45. Measure performance of other transportation and travel actions in this section.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use this space to provide supporting information on the items above. (4,000 max characters)

APPENDIX 8 - SAMPLE GREEN JOB LIST

Defining Environmental Technology



environment

Technician

ADVANCED TECHNOLOGY ENVIRONMENTAL AND ENERGY CENTER

**A report from a forum sponsored by the
Advanced Technological Education Program
of the National Science Foundation and
by the Advanced Technology Environmental
and Energy Center**

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•
Eastern Iowa Community College District

•
**Partnership for Environmental
Technology Education**

•
University of Northern Iowa

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Advanced Technological Education Program at the
National Science Foundation (NSF).
The opinions expressed in this report are those of the
authors and do not necessarily represent NSF policy.

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INTRODUCTION

On December 10th and 11th in 2007, the Advanced Technology Environmental and Energy Center (ATEEC) conducted a national forum for defining the environmental technology field. The forum goal was to validate and update occupational information from ATEEC's 2001 report titled *Defining Environmental Technology in the New Millennium*. The environmental technology industry has continually evolved since the original *Defining Environmental Technology* report in 1996 and the update in 2001. The advent of new technology, the increase in national and regional regulatory compliance requirements, and the changing demands of industry call for a realignment of academia, industry, business, and government. New environmental technology career categories are emerging, and skill sets traditionally associated with environmental technology are cutting across industries.

The 2007 forum's objectives included validating, revising, and/or updating the following:

- Title and definition of the field of environmental technology;
- Definition of technician;
- Environmental technology occupational categories;
- Technician-level occupational titles; and
- Job functions typically performed in each occupational category.

ATEEC collaborated with the Partnership for Environmental Technology Education (PETE) to select participants for the forum. ATEEC invited experienced practitioners and educators in environmental technology with a broad perspective of the various occupational areas included in this field. The participants who attended the forum included business, industry, and government agency

representatives, as well as two- and four-year college environmental technology educators. ATEEC attempted to gather as broad a regional representation of the country as possible, a variety of environmental technology areas, and industries that would employ environmental technicians.

The audience for the 2007 *Defining Environmental Technology* report includes:

- Counselors, faculty, and administrators of academic institutions at all levels but particularly in two-year colleges and high schools;
- Technicians and employers of technicians (e.g., companies, government agencies);
- Leaders of professional societies; and
- Federal, state, and local government officials responsible for the quality and quantity of the nation's technical workforce.

A primary purpose of this report is to enhance counselor, teacher, and student awareness of environmental careers at the technician level. Ultimately, the report should contribute to addressing the workforce development needs of business, industry, and government by providing educators with information needed to develop relevant curriculum that prepares students for environmental technology careers.

The report is also being used to provide direction for ATEEC, a Center of Excellence partially funded through a grant from the National Science Foundation. The Center brings together institutions from across the nation to promote and assist environmental technology programs. ATEEC's core partners are PETE, the University of Northern Iowa, and the National Science Foundation.

The Forum

The 2007 Defining Forum participants reviewed the 2001 report, *Defining Environmental Technology in the New Millennium*, prior to the forum workshop and considered these questions:

- Does the “environmental technology” title and definition accurately describe the field? If not, how would you revise it?
- What definition of “technician” accurately describes the position?
- How would you categorize occupations in the environmental technology field?
- What specific technician-level occupations are typically found in each occupational category?
- What technician-level job functions are typically performed in each occupational category?
- What are the emerging employment trends in the environmental field?
- What is the role of community colleges in technician education and training?

The forum began on December 10th at the O’Hare Hilton hotel in Chicago. Participants were welcomed and presented with information on ATEEC’s mission and goals. The group then reviewed the agenda, objectives, and work processes for the forum.

The first action item was the participants’ review of the 2001 “environmental technology” definition; minor revisions were made to that definition. Additionally, the participants decided to add a definition of “technician” from the 1996 report, with minor revisions. It was noted that the educational background for technicians can range from a high school diploma plus on-the-job training to a bachelor’s degree. Typically, technicians complete a two-year associate degree in an applied technology program.

Next, the participants worked to validate or revise each of the environmental technology occupational categories listed in the 2001 report. Consensus was reached on the following occupational categories. The additional category of “Sustainability” was devised to reflect a rapidly emerging occupational field with existing jobs, but which is not yet fully defined.

- Air Quality
- Emergency Preparedness & Response
- Energy Technologies & Services
- Environmental Information Management Systems
- Environmental Laboratory Services
- Environmental Site Management
- Natural Resources Management
- Safety & Health
- Solid & Hazardous Waste Management
- Wastewater Management
- Water Supply & Quality
- Sustainability

ATEEC’s mission is the advancement of environmental and energy technology education through curriculum, professional, and program development and improvement.

Environmental technology is a career field that applies the principles of mathematics, science, engineering, communications, and economics to ensure human health and safety, and to manage and protect natural resources.

Additional copies of this report can be downloaded at ATEEC’s Web site: www.ateec.org.

The participants then began working in small groups, where they felt their specific expertise would be of most value. The majority of the small-group work was spent in creating, validating, updating, and refining technician-level job titles and broad job functions. Again, the 2001 report was used as a basis for validation. The groups then shared their results and reached a large-group consensus in those areas.

Additionally, during the large-group discussion, the participants identified “cross-cutting” areas—functional areas that cut across most environmental technology occupational categories. For example, many environmental technology jobs require a background in geospatial sciences, so that technicians can collect, manage, and integrate spatial and attribute data using geographic information systems (GIS).

The remainder of the workshop was spent identifying emerging areas and trends in the environmental technology field and how high schools and community colleges can facilitate technician education and training.

Following the forum in Chicago, participants went online to spend further time in reviewing and revising the materials they had developed. Additional experts in the field were then invited to review and comment on the initial documentation from the forum, resulting in a validation and consensus of expert opinions.

The Results

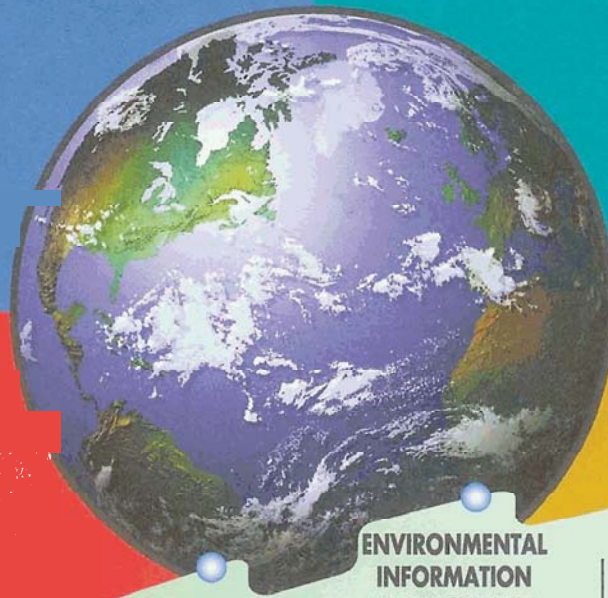
The next section of this document contains the occupational chart for “Defining Environmental Technology,” providing a valuable snapshot of the field. Included on the chart are the environmental technology definition and technician definition, as well as representative technician-level job titles for each of the occupational categories. Following the chart are more detailed listings of the occupational areas and general job functions within each. The last section of the report presents the identified cross-cutting areas, emerging trends, and community college responsibilities.

Cross-Cutting Knowledge & Skills

- Business continuity planning
- Communication devices
- Communication technologies
- Communications (written & oral)
- Computer hardware & software use
- Data management / documentation
- Emergency planning
- Emergency preparedness
- Geospatial technology
- Globalization and systems
- Health & safety
- Instrumentation & technology
- Nanotechnology / manufacturing / biotechnology
- Pollution prevention / waste minimization
- Quality Assurance / Quality Control (QA/QC)
- Regulatory affairs
- Sampling & monitoring
- Science, technology, engineering, & math
- Sustainability
- Teamwork
- Troubleshooting / problem solving / critical thinking / research
- Workplace ethics

What is Environmental Technology?

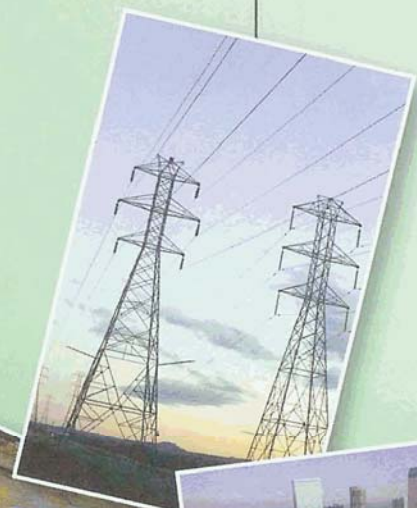
Environmental Technology is a career field that applies the principles of math, science, technology, engineering, communication, economics, and law to ensure product and worker health and safety. This career field involves the management, conservation, and protection of the natural environment and resources through regulatory compliance while promoting sustainability.



DEFINING

OCCUPATIONAL CATEGORIES

AIR QUALITY	EMERGENCY PREPAREDNESS & RESPONSE	ENERGY TECHNOLOGIES & SERVICES*	ENVIRONMENTAL INFORMATION MANAGEMENT SYSTEMS	ENVIRONMENTAL LABORATORY SERVICES	ENVIRONMENTAL SITE MANAGEMENT
<ul style="list-style-type: none"> Air process tech Air quality tech Ambient air monitoring tech Auditor Greenhouse gas emission (carbon footprint) specialist Indoor air quality tech Instrumentation tech Source sampling tech 	<ul style="list-style-type: none"> Emergency planning tech Emergency preparedness & response trainer Emergency response tech Hazardous materials tech Public safety / security officer Risk management tech 	<ul style="list-style-type: none"> Buying & selling energy tech Energy assessment tech Energy efficient building construction, project engineering, & implementation tech Exploration tech Generation (alternative) & utility-scale construction tech Operations & maintenance tech Regulatory affairs tech Transmission & distribution tech Transportation (mobile) source tech 	<ul style="list-style-type: none"> Environmental education & outreach tech Environmental management systems tech Environmental database tech Environmental regulatory tech Geospatial tech Procurement & tracking tech (lifecycle analysis or product stewardship) 	<ul style="list-style-type: none"> Biological / microbiological lab tech / analyst Chemist / analytical lab tech Instrumentation tech Quality assurance / quality control specialist Sample collection & prep tech Soil / geotechnical properties tech / analyst 	<ul style="list-style-type: none"> Asbestos abatement worker / supervisor / inspector Decontamination tech Disaster site tech Environmental site assessor Field services tech Geology tech Geospatial tech Inorganic / organic contamination Land survey tech Land use planning / redevelopment tech Lead abatement worker / supervisor / inspector Mine reclamation tech Mobile lab tech Mold/mildew remediation tech Nonpoint source pollution tech Permitting / licensing tech Remediation tech Underground storage tank tech



*Refer to the new "Defining Energy Technologies & Services" report for further breakdown of occupations & functions.
 **Indicates an emerging occupational field, with existing jobs, but not yet fully defined

Environmental Technology

What is a technician?

A technician communicates and applies knowledge, skills, and abilities to perform scientific, technical, and regulatory tasks.

OCCUPATIONAL TITLES

NATURAL RESOURCES MANAGEMENT

Aquatic / terrestrial habitat tech
 Botany / biology tech
 Ecology tech
 Fire management tech
 Fisheries tech
 Forestry tech
 Geology tech
 Geospatial tech
 Horticulture / landscape tech
 Marine science tech
 Natural resources tech
 Parks & recreation tech
 Range tech
 Smart growth tech
 Soil conservation tech
 Stormwater management tech
 Watershed management tech
 Wetlands tech
 Wildlife tech

SAFETY & HEALTH

Chemical hygiene officer
 Compliance officer
 Ergonomist
 Hazardous material tech
 Health & safety tech
 Health physics / radiation safety tech
 Industrial hygiene tech
 Loss control / prevention representative
 Safety & health auditor
 Safety & health trainer / industrial trainer
 Safety coordinator
 Safety specialist
 Site safety manager

SOLID & HAZARDOUS WASTE MANAGEMENT

Biohazard tech
 Hazardous waste tech
 Landfill tech
 Nuclear waste tech
 Recycling tech
 Solid waste tech
 Treatment, storage & disposal facility tech
 Waste reduction tech
 Waste-to-energy tech

WASTEWATER MANAGEMENT

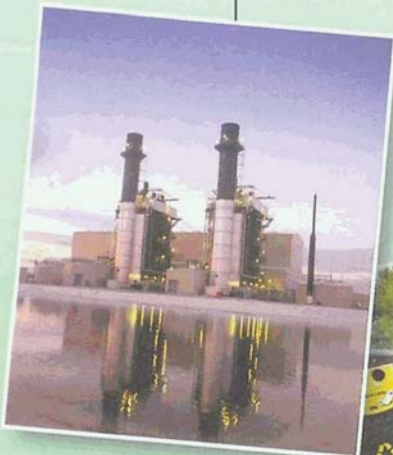
Biosolids management tech
 Cluster system operator
 Geospatial tech
 Graywater systems treatment manager
 Groundwater remediation systems tech
 Industrial pretreatment operator
 Industrial / municipal wastewater treatment operator
 Permitting / licensing tech
 Stormwater management tech
 Subsurface disposal tech
 Supervisory Control & Data Acquisition (SCADA) tech
 Tertiary / advanced wastewater systems tech
 Water security tech
 Wastewater collection system tech
 Wastewater lab tech

WATER SUPPLY & QUALITY

Desalination tech
 Drinking water lab tech
 Drinking water tech
 Geospatial tech
 Groundwater tech / operator
 Hydrology tech
 Industrial / municipal water system operator
 Irrigation tech
 Permitting / licensing tech
 Sanitary survey tech
 Supervisory Control & Data Acquisition (SCADA) tech
 Surface water tech / operator
 Water conservation tech
 Water rights tech
 Water security tech
 Watershed protection tech
 Water supply / distribution tech
 Water supply quality educator / trainer
 Well drilling tech
 Wellhead protection tech

SUSTAINABILITY**

Carbon offset analyst
 Carbon trading specialist
 Climate change adaptation analyst
 Climate change mitigation analyst
 Coastal zone management tech
 Ecological footprint analyst
 Efficiency specialist
 Efficient landscaping tech
 Emergency preparedness / response / natural disaster tech
 Energy efficiency specialist
 Energy resource manager
 Geospatial tech
 Global equity specialist
 Greenhouse gas emissions
 Green product specialist
 Home energy rater tech
 LEED tech
 Lifecycle analysis / product stewardship tech
 Permaculture design tech
 Smart growth tech
 Sustainability coordinator
 Sustainability educator / trainer
 Sustainability systems analyst
 Sustainable design tech
 Sustainable process & procedures manager
 Transportation & logistics specialist
 Urban agriculture tech
 Water resources tech



AIR QUALITY

- Collect and analyze indoor and outdoor air samples.
- Install, calibrate, operate, troubleshoot, decontaminate, repair, and maintain air sampling and monitoring equipment.
- Collect and assess meteorological information.
- Label, preserve, and store samples.
- Develop and follow Standard Operating Procedures (SOPs).
- Follow established quality control procedures.
- Follow chain-of-custody procedures for sample collection and handling. Select and use proper personal protective equipment and safety procedures.
- Generate, calculate, validate, and interpret air sampling and monitoring data.
- Maintain accurate records of air sampling, monitoring, repair, and calibration of equipment.
- Prepare reports of air sampling and monitoring activities for customers and/or regulatory agencies. Assist in air permit application preparation and compliance reporting.
- Apply appropriate local, state, and federal environmental regulations to specific projects.
- Evaluate and monitor health and safety conditions.
- Initiate emergency response actions. Calculate air emissions of facility or process.
- Conduct greenhouse gas emissions inventories, calculate carbon footprint, and implement measures to reduce emissions. Construct process flow diagrams.
- Input data to modeling programs.
- Conduct facility air emissions inventory.
- Investigate fugitive air emissions.
- Research air pollution prevention alternatives.
- Operate and maintain air pollution control devices.
- Determine efficiency of air pollution control devices. Initiate corrective action for operational malfunctions of air monitoring and/or pollution control equipment. Maintain inventory of supplies for air monitoring and/or pollution control equipment.
- Properly dispose of wastes generated by air monitoring and/or air pollution control equipment.
- Perform literature searches.
- Assist in recommending/implementing practices to reduce or eliminate air pollutants.
- Train employees in air sampling/monitoring techniques, and health and safety issues.
- Develop and maintain customer/community relationships.
- Maintain professional certifications.
- Interpret indoor air quality assessments, determine possible resulting health impacts, and recommend mitigation options.

Occupational Titles

- Air Process Technician
- Air Quality Technician
- Ambient Air Monitoring Technician
- Auditor
- Greenhouse Gas Emission (carbon footprint) Specialist
- Instrumentation Technician
- Source Sampling Technician

EMERGENCY PREPAREDNESS AND RESPONSE

Occupational Titles

- ☒ Emergency Planning Technician
- ☒ Emergency Preparedness and Response Trainer
- ☒ Emergency Response Technician
- ☒ Hazardous Materials Technician
- ☒ Public Safety / Security Officer
- ☒ Risk Management Technician

- Respond to hazardous materials incidents and emergencies.
- Assess, contain, control, and clean up hazardous/regulated material spills and releases.
Evacuate affected areas.
Assess meteorological conditions.
- Utilize the “buddy system.”
- Select and use proper personal protective equipment.
Maintain and inspect personal protective equipment.
- Install, calibrate, operate, troubleshoot, maintain, and repair sampling and monitoring equipment.
Interpret monitoring data.
- Operate heavy equipment and tools.
- Assist in the set-up, use, and dismantling of decontamination facility.
Assist in containerizing materials.
- Dispose of hazardous/regulated material spill wastes.

Complete hazardous materials incident reports.

- Activate and/or perform assigned duties within the incident command system.
- Interact with regulatory authorities, other emergency response organizations, and the public.
- Recognize chemical and physical properties of hazardous materials.
Recognize incompatible materials.
- Label, package, and transport hazardous materials.
Develop and manage spatial and attribute database/map.
- Collect inventory data and track regulated materials.
Submit reports to off-site personnel and regulatory agencies.
- Apply appropriate local, state, and federal environmental regulations to specific projects.
- Conduct facility inspections.
Assess facility processes for potential vulnerability, and plan corrective measures.
Develop emergency action plans.
- Train employees on emergency action plan contents and emergency response actions.
- Conduct emergency response drills.
- Serve as a member of an emergency response team.
- Maintain professional certifications.
Maintain awareness of all hazards and threats (e.g., spills and releases, security breaches, fire, explosions, natural disasters, structural collapse, and workplace violence).
Develop county all-hazard plans.
- Update existing training programs and materials to include applicable information on bioterrorism, terrorism, pandemic, weapons of mass destruction, personal safety/preparedness, etc.

EMERGENCY PREPAREDNESS AND RESPONSE (cont)

- Develop interoperability of all agencies to prepare, plan, respond, and recover from all hazards.
- Develop and exercise crisis management, business continuity, and continuity of operations plans.
- Develop programs to address workplace violence threats including processes, procedures, and training.
- Conduct vulnerability analysis for workplace risk or hazards.
- Ensure plans are consistent with National Incident Management Framework.
- Plan for post-traumatic stress disorder assistance and counseling.
Develop mutual aid agreements with appropriate agencies and vendors as needed to ensure multi-agency coordination.
- Develop and implement mass communication systems with appropriate agencies
- Use geospatial technologies as appropriate for emergency preparedness and response.
- Train/instruct others in the proper use of personal protective equipment.
- Safely store hazardous materials.
- Maintain documentation related to health and safety issues.

ENERGY TECHNOLOGIES AND SERVICES**

Occupational Titles

- ☒ Buying and Selling Energy Technician
- ☒ Energy Assessment Technician
- ☒ Energy Efficient Building Construction, Project Engineering, and Implementation Technician
- ☒ Exploration Technician
- ☒ Generation (alternative) and Utility-Scale Construction Technician
- ☒ Operations and Maintenance Technician
- ☒ Regulatory Affairs Technician
- ☒ Transmission and Distribution Technician
- ☒ Transportation (mobile) Source Technician

** Refer to the new Defining Energy Technologies & Services report for further breakdown of occupations and functions.

ENVIRONMENTAL INFORMATION MANAGEMENT SYSTEMS

- Input data to information management system.
- Collect, compile, analyze, and archive environmental data and records.
Manage laboratory data.
Implement and review quality assurance/quality control practices and guidelines.
Document and report best practices.
Maintain documentation (e.g., employee training, health and safety issues, and job performance).
- Perform basic statistical analysis.
- Develop and maintain inventory tracking systems for environmental equipment and supplies, and regulated/hazardous materials.
Update and transmit environmental information to customers and/or regulatory agencies.
Identify most appropriate information management technologies.
- Develop automated information management systems.
Search Web sites, Internet directories, and literature for relevant environmental information.
- Maintain security and integrity of proprietary and/or public information resources.
- Collect, manage, and integrate spatial and attribute data using geographic information systems (GIS) and global positioning systems (GPS).
Create and interpret maps.
- Determine appropriate projections and coordinate system.
- Perform imagery geo-referencing.
- Identify and apply basic educational principles to information management.
- Analyze and identify environmental impact.

- Analyze and identify pollution prevention, waste management, and remediation strategies.
Manage and maintain database.
Recognize and apply appropriate environmental regulations to information management.
Apply ISO 140001 requirements to manage environmental systems.



ENVIRONMENTAL LABORATORY SERVICES

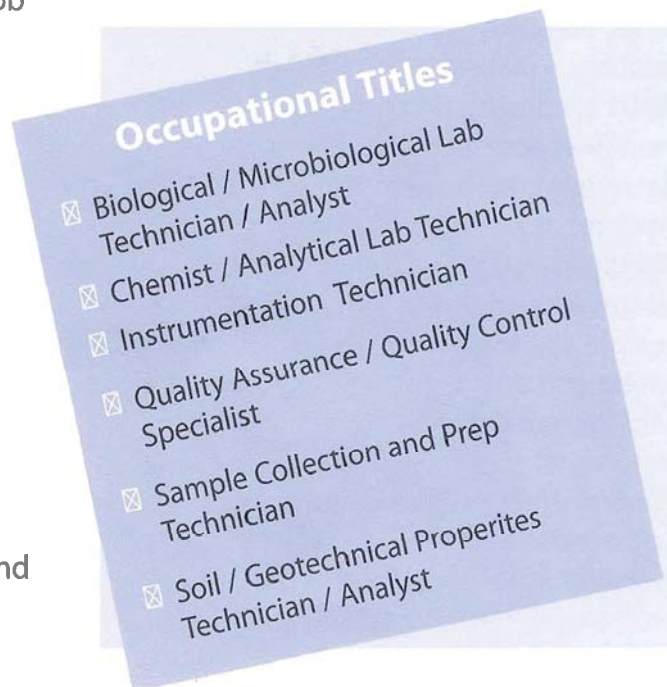
- Collect air, water, wastewater, soil, sludge, or other samples for laboratory analysis.
- Receive laboratory samples and ship sampling containers to customers.
- Instruct customers in proper sampling, preservation, and shipping techniques. Label, preserve, store, and prepare samples for analysis.
- Install, calibrate, operate, troubleshoot, repair, and maintain laboratory equipment.
- Maintain maintenance records for laboratory equipment.
 - Select and use proper laboratory glassware.
- Measure, weigh, composite, and dilute samples.
 - Perform wet chemistry procedures.
- Titrate, extract, and digest samples.
 - Prepare laboratory standards and solutions.
- Operate basic laboratory instrumentation (e.g., pH, conductivity, colorimetric, and specific ion meters).
 - Operate advanced laboratory instrumentation (e.g., spectrophotometer, gas chromatograph, and high performance liquid chromatography).
 - Operate microscope.
 - Prepare microbiological media.
 - Qualify and quantify organisms or contaminants.
 - Wash, decontaminate, or sterilize laboratory equipment.
- Label and dispose of laboratory waste.
- Maintain inventory of laboratory supplies.
- Operate computers and software.
- Generate, calculate, validate, interpret, and record laboratory data.
 - Document laboratory procedures and results.
- Develop and follow SOPs.
- Follow established quality control procedures.
- Follow chain-of-custody procedures for sample collection and handling.
- Prepare laboratory reports and compliance paperwork for customers and regulatory agencies.
- Apply local, state, and federal environmental regulations to specific projects.
 - Testify in court proceedings.
- Develop and comply with chemical hygiene safety plan.
- Perform literature searches.
- Implement laboratory business plan.
- Develop and maintain customer relationships.
 - Train other employees in laboratory procedures and techniques.
- Maintain laboratory technician/analyst certifications.
- Select and use proper personal protective equipment for work environment.
 - Identify and implement good laboratory practices.
- Maintain laboratory equipment calibration program.
 - Maintain laboratory procedures to current approved standard methods and/or other regulatory approved methods.

Occupational Titles

- ☒ Biological / Microbiological Lab Technician / Analyst
- ☒ Chemist / Analytical Lab Technician
- ☒ Instrumentation Technician
- ☒ Quality Assurance / Quality Control Specialist
- ☒ Sample Collection and Prep Technician
- ☒ Soil / Geotechnical Properties Technician / Analyst

ENVIRONMENTAL LABORATORY SERVICES (cont)

- Input data to information management system.
- Collect, compile, analyze, and archive environmental data and records.
Manage laboratory data.
Implement and review quality assurance/quality control practices and guidelines.
- Document and report best practices.
- Maintain documentation (e.g., employee training, health and safety issues, and job performance).
- Perform basic statistical analysis.
- Develop and maintain inventory tracking systems for environmental equipment and supplies, and regulated/hazardous materials.
- Update and transmit environmental information to customers and/or regulatory agencies.
- Identify most appropriate information management technologies.
- Develop automated information management systems.
- Search Web sites, Internet directories, and literature for relevant environmental information.
- Maintain security and integrity of proprietary and/or public information resources.
Collect, manage, and integrate spatial and attribute data using geographic information systems (GIS) and global positioning systems (GPS).
Create and interpret maps.
- Determine appropriate projections and coordinate system.
- Perform imagery geo-referencing.
- Identify and apply basic educational principles to information management.
Analyze and identify environmental impact.
- Analyze and identify pollution prevention, waste management, and remediation strategies.
- Manage and maintain database.
Recognize and apply appropriate environmental regulations to information management.
- Apply ISO 140001 requirements to manage environmental systems.



ENVIRONMENTAL SITE MANAGEMENT

- Conduct abatement and remediation activities for soil, ground water, surface water, asbestos, and lead.
- Install, calibrate, operate, troubleshoot, repair, and maintain sampling and remediation equipment. Collect and analyze air, water, soil, sludge, asbestos-containing materials, lead paint, and other samples using field or mobile laboratory equipment.
- Label, preserve, store, and ship samples and hazardous materials.
- Assist in constructing site sampling plan; modify as necessary due to site conditions.
- Decontaminate sampling and remediation equipment.
- Handle investigative and remediation wastes properly.
- Restore site to pre-investigative conditions. Assess and document site hydrologic and geologic conditions, and human-made features. Confirm underground utility locations. Drill boreholes for environmental investigation. Evaluate and monitor health and safety conditions.
- Assist in preparation of site health and safety plan.
- Select and use proper personal protective equipment. Assist in site exposure monitoring. Initiate emergency response actions.
- Apply appropriate geospatial technologies (e.g., GIS, GPS, remote sensing). Survey property boundaries, features, and sampling locations using GPS or rod and transit.
- Construct and interpret blueprints/maps.
- Record site conditions, sampling protocol, and field notes.
- Photograph site conditions and activities. Prepare written reports of site conditions and activities. Recognize physical and chemical properties of hazardous materials.
- Recognize incompatible materials. Purge underground storage tanks of materials and vapors.
- Remove underground storage tanks using heavy equipment and power tools.
- Apply appropriate local, state, and federal environmental regulations to projects. Interact with contractors, property owners, site managers, regulatory agencies, and the public.
- Research site history and investigate potential for environmental contamination.
- Support redevelopment/land use activities. Collect and apply environmental, economic, and social impact data related to redevelopment.
- Develop and follow SOPs.
- Follow established quality control procedures. Follow chain-of-custody procedures for sample collection and handling.
- Train site workers in SOPs, and health and safety issues.
- Maintain professional certifications. Maintain chain-of-custody records for all samples.

ENVIRONMENTAL SITE MANAGEMENT (cont)

Occupational Titles

- As Inspector
- Decontamination Technician
- Disaster Site Technician
- Environmental Site Assessor
- Field Services Technician
- Geology Technician
- Inorganic / Organic Contamination
- Land Survey Technician
- Land Use Planning / Redevelopment Technician
- Lead Abatement Worker / Supervisor / Inspector
- Mine Reclamation Technician
- Mobile Lab Technician
- Mold / Mildew Remediation Technician
- Nonpoint Source Pollution Technician
- Permitting / Licensing Technician
- Remediation Technician
- Underground Storage Tank Technician

FUNCTIONS

JOB

NATURAL RESOURCES MANAGEMENT

- Inventory, evaluate, and assist in development of resource management strategies for areas with unique scenic, recreational, historical, cultural, geological, habitat, species, or other resource values. Conserve natural resources.
- Assist in development of plans for the protection, maintenance, rehabilitation, or enhancement of natural resources.
- Assist in operational forestry.
- Assist in forest nursery programs. Inventory forest stands.
- Assist in preparation of fire suppression and prescribed burning plans.
- Carry out prescribed burning activities. Assist in development of fire management plans. Fight forest fires.
- Assist in laying out timber sales (e.g., marking trees to be logged).
- Compile, verify, and analyze timber appraisals.
- Cruise timber (i.e., measure height and circumference of trees).
- Scale (i.e., measure) and cut logs.
- Conduct and interpret surface and ground water inventories, studies, and watershed analyses.
- Examine and interpret water quality and quantity from streams and aquifers.
- Implement plans to improve aquatic habitats.
- Implement farm pond management techniques. Sample and identify aquatic organisms. Identify and delineate wetlands based on plant/animal species and hydrology. Implement wetland restoration and construction activities. Operate boats.
- Perform fish population studies using seining, trawling, and electroshock equipment.
- Operate fish hatchery equipment.
- Practice techniques of aquaculture.
- Stock lakes and streams with fish.
- Participate in tag/release and tracking studies for fish and wildlife.
- Identify and participate in the introduction of rare/endangered species to an ecosystem
- Implement urban wildlife management strategies.
- Rehabilitate injured wildlife for release.
- Trap and relocate wildlife.
- Calculate rates of sediment production.
- Determine soil and bedrock types and characteristics. Identify fossil and rock samples.
- Implement soil conservation practices.
- Implement erosion control strategies.
- Create geo-reference imagery.
- Collect, manage, and integrate spatial and attribute data using applicable geospatial technologies.
- Determine appropriate map projections and coordinate systems.
- Use aerial photography.
- Use geological maps and reports.
- Assist in habitat restoration.
- Identify and control noxious weeds.
- Propagate and plant woody and non-woody plant species.
- Handle pesticides and herbicides.
- Perform ecosystem sampling and monitoring.
- Install, calibrate, operate, maintain, troubleshoot, and repair equipment.
- Analyze and interpret sampling and monitoring data.
- Decontaminate sampling and monitoring equipment.
- **Label, preserve, store, and ship samples.** Follow chain-of-custody procedures for sample collection and handling.
- Follow established quality control procedures.

NATURAL RESOURCES MANAGEMENT (cont)

Occupational Titles

- ☒ Aquatic / Terrestrial Habitat Technician
- ☒ Botany / Biology Technician
- ☒ Ecology Technician
- ☒ Fire Management Technician
- ☒ Fisheries Technician
- ☒ Forestry Technician
- ☒ Geology Technician
- ☒ Geospatial Technician
- ☒ Horticulture / Landscape Technician
- ☒ Marine Science Technician
- ☒ Natural Resources Technician
- ☒ Parks & Recreation Technician
- ☒ Range Technician
- ☒ Smart Growth Technician
- ☒ Soil Conservation Technician
- ☒ Stormwater Management Technician
- ☒ Watershed Management Technician
- ☒ Wetlands Technician
- ☒ Wildlife Technician

- Perform park maintenance.
- Develop and deliver public information and environmental education programs.
- Participate in the assessment of environmental impact of proposed development projects.
- Apply appropriate local, state, and federal environmental regulations to specific projects.
- Enforce local, state, and federal natural resource regulations.
Assist in making recommendations to federal, state, local, and private organizations.
- Assist in preparation of environmental documents.
- Select and use proper personal protective equipment.
- Compile field notes, maintain records, and write reports.
Perform literature searches.
- Develop and follow SOPs.
Inventory and assess critical natural resources.
Identify and delineate wetlands based on plant/animal species, hydrology, and soils.
- Identify and control noxious weeds and other invasive species.
Handle and apply pesticides and herbicides according to established protocols.
- Measure ground water levels and flow direction.

SAFETY AND HEALTH

- Identify and evaluate workplace hazards, including unsafe acts and conditions.
- Implement control of workplace hazards through engineering practices, personal protective equipment, and policy changes.
- Develop and implement written plans (e.g., SOPs, sampling plans, safety and health plans, corrective action plans, lockout/tagout procedures, confined-space entry procedures).
- Conduct workplace air quality testing and monitoring for indoor air pollutants.
- Monitor noise levels in workplace.
- Monitor radiation levels in workplace.
- Assist in worker exposure monitoring (e.g., asbestos, lead, radiation, and toxic substances).
- Develop a working knowledge of industrial hygiene.
- Install, calibrate, operate, troubleshoot, repair, and maintain sampling and monitoring equipment.
- Interpret monitoring data.
- Maintain records and write reports for use internally or by regulatory authorities.
- Follow established quality control procedures.
- Follow chain-of-custody procedures for sample collection and handling.
- Select facility equipment and materials based on regulatory standards and health and safety concerns.
- Select proper personal protective equipment for workplace tasks.
- Maintain and inspect personal protective equipment.
- Conduct respirator fit testing.
- Assist in managing facility's medical monitoring program including maintaining HBV inoculations, spirometry, and audiometric testing.
- Instruct coworkers on environmental, safety, health, and ergonomic issues.
- Conduct and/or participate in safety meetings and on safety committee.
- Coordinate employee first aid/CPR and Automated External Defibrillator (AED) training.
- Serve as a member of facility emergency response team.
- Conduct workplace safety and health audits.
- Develop a working knowledge of facility's ventilation system.
- Determine which process materials and wastes are hazardous and investigate nonhazardous substitutions.
- Manage workplace hazardous materials and wastes, including shipping, receiving, labeling, storage, and disposal.
- Maintain chemical inventory and approve chemicals for use at facility.
- Implement facility's Hazard Communication program.
- Maintain and interpret Material Safety Data Sheets.
- Interact with regulatory authorities and public health and safety officials.
- Maintain facility compliance with safety and health standards.
- Develop a working knowledge of environmental management systems and certification programs.
- Assess and monitor ergonomic conditions in workplace.
- Implement ergonomics solutions in workplace.
- Investigate workplace incidents and accidents, and workers compensation claims.
- Track trend statistics for incidents and accidents.
- Champion and model safety practices through benchmarks.
- Maintain professional and AED certifications.
- Implement continuous process and improvement for health and safety based on new technology and research findings.

SAFETY AND HEALTH (cont)

Occupational Titles

- ☒ Chemical Hygiene Officer
- ☒ Compliance Officer
- ☒ Ergonomist
- ☒ Hazardous Material Technician
- ☒ Health and Safety Technician
- ☒ Health Physics / Radiation Safety Technician
- ☒ Industrial Hygiene Technician
- ☒ Loss Control / Prevention Representative
- ☒ Safety and Health Auditor
- ☒ Safety and Health Trainer / Industrial Trainer
- ☒ Safety Coordinator
- ☒ Safety Specialist
- ☒ Site Safety Manager

- Develop waste minimization plans, calculating return on investment.
- Integrate globally harmonized systems of classification and labeling of chemicals into hazard communication procedures.
- Develop emergency action plans and coordinate stocking of all emergency supplies.
- Maintain compliance with applicable state and federal health/safety regulations.
- Infuse health and safety training within the multi-cultural workforce.
- Manage biohazardous materials.
- Promote awareness of employee assistance programs for drug and alcohol support.
- Promote awareness of employee off-work injury and the impact to workplace productivity.
- Understand the National Incident Management System (NIMS).
- Ensure products, parts, and components are Restriction of Hazardous Substances (RoHS) compliant.
- Ensure recycled materials are Waste Electrical and Electronic Equipment (WEEE) compliant.
- Maintain OSHA log.
- Ensure regulatory notices (e.g., annual OSHA, worker compensation) are posted.
- File all regulatory reports, permits, and site licenses.
- Coordinate initial and refresher safety training including new employee orientation.
- Oversee (or manage) contractor safety program including confined space program.
- Maintain facility compliance with environmental programs (e.g., designated Underwater Storage Tank operator; Spill Prevention, Control, and Countermeasures (SPCC); stormwater and wastewater permits).
- Perform vulnerability or risk assessments.
- Assist in the development of a continuity of operations plan.
- Assist in the development of a workplace violence plan (may be part of the emergency action plan).
- Submit workers compensation claims.
- Coordinate medical care/treatment for injured workers.
- Facilitate "light-duty" return-to-work programs.
- Interact with workers compensation insurers' loss control and claims representatives.
- Maintain fire systems (e.g., fire extinguishers, alarms, sprinklers) per applicable codes.
- Assist with development of job descriptions with specific physical and chemical hazards for each job, and list potentially unsafe acts, conditions, etc. as previously itemized.

SOLID AND HAZARDOUS WASTE MANAGEMENT

- Identify applicable or potentially applicable environmental permits related to air, water, recycling of materials, and management of waste.
- Promote recycling and re-use of materials from the receiving dock through the shipping center, including the employee lunch rooms and lounges.
- Act as liaison with Local Emergency Preparedness Commission (LEPC) personnel.
- Interact with regulatory authorities and public health and safety officials.
- Work with professional staff to determine life-cycle costs associated with equipment upgrades and process modifications to ensure costs associated with improved safety and health are factored on top of potential energy savings, reduced waste, reduced labor costs, and other potential cost savings.
- Train/inform others on the proper use of personal protective equipment.
- Identify, inventory, characterize, and sort solid and hazardous waste streams.
- Label, package, store, dispose of, and/or recycle facility wastes.
- Collect samples of waste streams, using SOPs.
- Conduct facility audits and evaluate facility processes and materials for waste minimization potential.
- Recommend and implement practices to reduce or eliminate pollutants and waste from facility processes.
- Conduct cost-benefit analyses.
- Train employees in pollution prevention strategies.
- Train employees in hazardous waste handling and management.
- Assist in development and implementation of environmental management system for facility.
- Coordinate material recycling/waste exchange program.
- Investigate alternative markets and reuse potentials for waste materials.
- Install, calibrate, operate, troubleshoot, repair, and maintain equipment and pollution control devices.
- Operate waste handling equipment including heavy equipment, balers, compactors, grinders, separation and conveyance systems, and incinerators.
- Initiate corrective action to remedy operational malfunctions.
- Collect samples from landfill leachate and/or gas recovery system.
- Label, preserve, store, and ship samples.
- Decontaminate sampling equipment.
- Characterize wastes as hazardous or non-hazardous.
- Prepare shipping manifests.
- Maintain records of waste storage, shipping, and disposal.

Occupational Titles

- ☒ Biohazard Technician
- ☒ Hazardous Waste Technician
- ☒ Landfill Technician
- ☒ Nuclear Waste Technician
- ☒ Recycling Technician
- ☒ Solid Waste Technician
- ☒ Treatment, Storage, and Disposal Facility Technician
- ☒ Waste Reduction Technician
- ☒ Waste-To-Energy Technician

SOLID AND HAZARDOUS WASTE MANAGEMENT (cont)

- Apply appropriate local, state, and federal regulations for transportation of solid and hazardous waste.
- Select and use proper personal protective equipment.
- Develop and follow SOPs.
- Follow established quality control procedures.
- Follow chain-of-custody procedures for sample collection and handling.
- Manage household hazardous waste.
- Educate the public about solid/hazardous waste disposal and recycling options.
- Operate computers and software.
- Perform literature searches.
- Prepare reports.
- Maintain professional certifications.
- Apply appropriate NRC regulations for storage and containment of nuclear waste.
- Recognize safety issues and apply contingency plans associated with nuclear waste.
- Manage source materials suitable for waste-to-energy process.
- Apply ISO 14001 requirements to manage environmental systems.
- Ensure products, parts, and components are RoHS compliant.
- Ensure recycled materials are WEEE compliant.
- Identify local, state, and regional emergency response and reporting requirements.
- Adhere to Department of Transportation regulations as they pertain to packing and transporting hazardous waste.
- Collect recyclable materials.
- Evaluate materials for secondary use in production processes.
- Mass balance scenarios for regulated waste materials to equate or compare volumes purchased with volumes (weights) of product sold and production waste.
- Document compliance with appropriate local, state, and federal regulations for regulated and hazardous materials.
- Review plans for process modification with engineering and management personnel to determine impacts, if any, on waste streams.
- Identify applicable environmental permits and SOPs associated with waste management.
- Evaluate industrial waste recycling options periodically.
- Review potential for purchase or sale of materials in local, state, and federal recycling markets.

WASTEWATER MANAGEMENT

Occupational Titles

- ☒ Biosolids Management Technician
- ☒ Cluster System Operator
- ☒ Geospatial Technician
- ☒ Graywater Systems Treatment Manager
- ☒ Ground Water Remediation Systems Technician
- ☒ Industrial Pretreatment Operator
- ☒ Industrial / Municipal Wastewater Treatment Operator
- ☒ Permitting / Licensing Technician
- ☒ Stormwater Management Technician
- ☒ Subsurface Disposal Technician
- ☒ Supervisory Control and Data Acquisition (SCADA) Technician
- ☒ Tertiary / Advanced Wastewater Systems Technician
- ☒ Water Security Technician
- ☒ Wastewater Collection System Technician
- ☒ Wastewater Lab Technician

WASTEWATER MANAGEMENT (cont)

- Collect surface water, ground water, wastewater, process water, and drinking water samples.
- Label, preserve, and store samples.
- Analyze samples for physical, chemical, and biological parameters.
- Interpret sample analysis results.
- Monitor flow rates and tank levels by reading gauges, meters, and charts.
- Recognize and correct system upsets by adjusting process equipment.
- Decontaminate sampling equipment.
- Install, calibrate, operate, troubleshoot, repair, and maintain equipment.
- Operate heavy equipment/vehicles, hand/power tools, and boats.
- Operate publicly owned treatment works plant equipment.
- Operate industrial wastewater pretreatment equipment.
- Operate and maintain remote sensing equipment.
- Operate water filtration, aeration, disinfection, and purification equipment.
- Label and dispose of treatment by-products and wastes.
- Select and use proper personal protective equipment.
- Practice proper confined-space entry techniques.
- Handle hazardous chemicals.
- Initiate emergency response actions.
- Maintain chemical and supply inventory.
- Operate computers and software.
- Document site or process conditions, prepare reports, and maintain accurate records.
- Develop and follow SOPs.
- Follow established quality control procedures.
- Follow chain-of-custody procedures for sample collection and handling.
- Apply local, state, and federal environmental regulations to specific projects.
- Assess stormwater runoff characteristics.
- Assist in preparation of a site stormwater pollution prevention plan.
- Assist with development of written plans (e.g., sampling plan, health and safety plan, and lockout/tagout plan).
- Investigate erosion problems and assist in implementation of solutions.
- Perform ditch and culvert inspections and repairs.
- Investigate, maintain, and repair water and wastewater collection and distribution systems.
- Measure stream flow characteristics.
- Conduct lake studies.
- Assist in wetlands delineation.

WASTEWATER MANAGEMENT (cont)

- Assist in determining boundaries of a watershed.
- Assess soil, fill, and bedrock characteristics.
- Assist with environmental drilling and monitoring well installation.
- Measure ground water levels and flow direction.
- Collect, treat, and dispose of contaminated ground water.
- Monitor ground water remediation efforts.
- Apply and incorporate biosolids to land.
- Communicate effectively with contractors, customers, site owners, municipal officials, regulatory agencies, and the public.
- Maintain professional certifications.
- Implement stormwater management program.
- Apply geospatial technologies.
- Utilize Supervisory Control and Data Acquisition (SCADA) for system operation.
- Plan and deploy security measures.
- Apply Total Preventive Maintenance (TPM) to deploy predictive, preventive, and corrective maintenance.
- Implement and monitor industrial pre-treatment program.
- Notify regulatory agencies and public of noncompliance of licensing and permitting violations.
- Participate and advise water boards, commissions, and utilities.
- Understand budgeting and finance/asset management (both municipal and private sector).

WATER SUPPLY AND QUALITY

- Collect surface water, ground water, wastewater, process water, and drinking water samples.
- Label, preserve, and store samples.
- Analyze samples for physical, chemical, and biological parameters.
- Interpret sample analysis results.
- Monitor flow rates and tank levels by reading gauges, meters, and charts.
- Recognize and correct system upsets by adjusting process equipment.
- Decontaminate sampling equipment.
- Install, calibrate, operate, troubleshoot, repair, and maintain equipment.
- Operate heavy equipment, power tools, and boats.
- Operate publicly owned treatment works plant equipment.
- Operate industrial wastewater pretreatment equipment.
- Use and maintain remote sensing equipment.
- Operate water filtration, aeration, disinfection, and purification equipment.

Occupational Titles

- ☒ Desalination Technician
- ☒ Drinking Water Lab Technician
- ☒ Drinking Water Technician
- ☒ Geospatial Technician
- ☒ Ground Water Technician / Operator
- ☒ Hydrology Technician
- ☒ Industrial / Municipal Water System Operator
- ☒ Irrigation Technician
- ☒ Permitting / Licensing Technician
- ☒ Sanitary Survey Technician
- ☒ Supervisory Control and Data Acquisition (SCADA) Technician
- ☒ Surface Water Technician / Operator
- ☒ Water Conservation Technician
- ☒ Water Rights Technician
- ☒ Water Security Technician
- ☒ Watershed Protection Technician
- ☒ Water Supply / Distribution Technician
- ☒ Water Supply Quality Educator / Trainer
- ☒ Well Drilling Technician
- ☒ Wellhead Protection Technician

WATER SUPPLY AND QUALITY (cont)

- Label and dispose of treatment by-products and wastes.
- Select and use proper PPE.
- Practice proper confined-space entry techniques.
- Handle hazardous chemicals.
- Initiate emergency response actions.
- Maintain chemical and supply inventory.
- Operate computers and software.
- Document site or process conditions, prepare reports, and maintain accurate records.
- Develop and follow SOPs.
- Follow established quality control procedures.
- Follow chain-of-custody procedures for sample collection and handling.
- Apply local, state, and federal environmental regulations to specific projects.
- Assess stormwater runoff characteristics.
- Assist in preparation of a site stormwater pollution prevention plan.
- Assist with development of written plans (e.g., sampling plan, health and safety plan, and lockout/tagout plan).
- Investigate erosion problems and assist in implementation of solutions.
- Perform ditch and culvert inspections and repairs.
- Investigate, maintain, and repair water and wastewater collection and distribution systems.
- Measure stream flow characteristics.
- Conduct lake studies.
- Assist in wetlands delineation.
- Assist in determining boundaries of a watershed.
- Assess soil, fill, and bedrock characteristics.
- Assist with environmental drilling and monitoring well installation.
- Measure ground water levels and flow direction.
- Collect, treat, and dispose of contaminated ground water.
- Monitor ground water remediation efforts.
- Apply and incorporate biosolids to land.
- Interact with contractors, site owners, regulatory agencies, and the public.
- Maintain professional certifications.
- Implement a watershed protection plan.
- Implement a watershed public education program.
- Operate, monitor, and maintain well drilling equipment and appropriate logs.
- Develop cooperative agreements with water utilities.
- Operate and maintain well fields.
- Participate and advise water boards and commissions.
- Understand basic biological and chemical principles.
- Troubleshoot operational errors and make corrective decisions.
- Understand rate paying and budgeting principles.
- Analyze data, trends, reports, consumption, and/or test results to determine adequacy of facilities and system performance to include regulatory compliance.
- Comply with state backflow preventer programs to separate drinking water supply from industrial use and re-use supplies.
- Evaluate the use and re-use of graywater in the processes.
- Implement best management practices and strive for zero discharge.
- Consider participating in community monitoring forum to determine the presence of antibiotics, caffeine, and other unregulated substances in the water supplies at and near your facility.
- Monitor the water level/drawdown rates for the various aquifers at or near your facility.
- Hold public informational sessions to advise and participate with citizens and private sectors regarding long-term, high-quality water supplies.
- Apply geospatial technologies.
- Plan and deploy security measures.
- Communicate effectively with contractors, customers, site owners, municipal officials, regulatory agencies, and the public.
- Notify regulatory agencies and public of noncompliance of licensing and permitting violations.

SUSTAINABILITY*

Occupational Titles

- ☒ Carbon Offset Analyst
- ☒ Carbon Trading Specialist
- ☒ Climate Change Adaptation Analyst
- ☒ Climate Change Mitigation Analyst
- ☒ Coastal Zone Management Technician
- ☒ Ecological Footprint Analyst
- ☒ Efficiency Specialist
- ☒ Efficient Landscaping Technician
- ☒ Emergency Preparedness / Response/
- ☒ Natural Disaster Technician
- ☒ Energy Efficiency Specialist
- ☒ Energy Resource Manager
- ☒ Geospatial Technician
- ☒ Global Equity Specialist
- ☒ Greenhouse Gas Emissions Specialist
- ☒ Green Product Specialist
- ☒ Home Energy Rater Technician
- ☒ LEED Technician
- ☒ Lifecycle Analysis / Product Stewardship Technician
- ☒ Permaculture Design Technician
- ☒ Smart Growth Technician
- ☒ Sustainability Coordinator
- ☒ Sustainability Educator / Trainer
- ☒ Sustainability Systems Analyst
- ☒ Sustainable Design Technician
- ☒ Sustainable Process and Procedures Manager
- ☒ Transportation and Logistics Specialist
- ☒ Urban Agriculture Technician
- ☒ Water Resources Technician

- Use Quantitative Risk Assessment (QRA) to plan for sustainable resource management.
- Use Life Cycle Analysis (LCA) techniques to map resource use and product stewardship.

- Apply geospatial technologies to identify risks, create plans, propose solutions, and track progress.
- Apply sustainability metrics (environmental, economic, and social).
- Maintain appropriate certifications.
- Develop and maintain community relationships and partnerships to promote sustainability.
- Promote social equity and environmental justice in conjunction with economic viability/balance.
- Educate public in sustainability principles and practices.
- Keep current with sustainability literature, design, and conferences.
- Apply and utilize cost benefit analysis to sustainability decisions.
- Understand environmental, economic, and social systems interactions.
- Train employees on sustainability principles and practices.
- Research and advocate the use of sustainable products.
- Apply sustainability principles to urban planning.
- Perform emissions inventories, calculate and evaluate impacts, and communicate results.
- Identify the basics of LEED certification criteria.
- Identify the basics of home energy rating systems.
- Identify the basics of permaculture design.
- Apply ISO 140001 requirements to manage environmental systems.
- Ensure products, parts, and components are RoHS compliant.
- Ensure recycled materials are WEEE compliant.
- Assist in development of sustainability policies and plan for facilities, communities, and regions.
- Educate public in sustainability principles and practices.

*Indicates an emerging occupational field, with existing jobs, not yet fully defined

Cross-Cutting Knowledge and Skills

- ☒ Business continuity planning
- ☒ Communication devices
- ☒ Communication technologies
- ☒ Communications (written & oral)
- ☒ Computer hardware & software use
- ☒ Data management / documentation
- ☒ Emergency planning
- ☒ Emergency preparedness
- ☒ Geospatial technology (remote sensing, geographic information systems, global positioning systems)
- ☒ Globalization & systems
- ☒ Health and safety
- ☒ Instrumentation and technology
- ☒ Nanotechnology / manufacturing / biotechnology
- ☒ Pollution prevention / waste minimization
- ☒ Quality Assurance / Quality Control (QA/QC)
- ☒ Regulatory affairs
- ☒ Sampling & monitoring
- ☒ Science, technology, engineering, & math
- ☒ Sustainability
- ☒ Teamwork
- ☒ Troubleshooting / problem solving / critical thinking / research
- ☒ Workplace ethics

Emerging Areas / Trends

- ☒ Alternative fuels, including:
 - o Energy resources
 - o Fuel cells
 - o Hydrogen
 - o Nuclear
 - o Waste-to-energy
- ☒ Biomimickry
- ☒ Carbon capture / management
- ☒ Carbon footprint
- ☒ Emissions trading
- ☒ Energy tomorrow
- ☒ Food flavoring industry (e.g., popcorn workers lung)
- ☒ Globalization vs localization (e.g., regulations, economics)
- ☒ Homeland security
- ☒ Infrastructure (e.g., airports, bridges, roads, water rights, and management)
- ☒ Multicultural workforce (e.g., changing workforce demographics, 2010 meltdown)
- ☒ Myco-remediation
- ☒ Nanotechnology
- ☒ Organic farming / agriculture
- ☒ Permaculture design
- ☒ Pharmaceutical waste
- ☒ Sustainability, including:
 - o Sustainable behavior
 - o Sustainable communities (transit & services-oriented development)
 - o Sustainable development
- ☒ Workplace safety & health
- ☒ Zero waste

Community College Responsibilities and Contributions

- ☒ Develop 2+2+2 articulation agreements with high schools and 4-year institutions.
- ☒ Develop a program graduate survey tool to stay in touch with past graduates to assess changing job skills.
- ☒ Develop active program advisory committees
- ☒ Develop emerging trends programs.
- ☒ Develop/foster relationships with local industry.
- ☒ Develop shared program offerings with high schools for credit.
- ☒ Include environmental/sustainability/energy as a capstone course and/or infuse in other program offerings on campus.
- ☒ Integrate sustainability as a core competency throughout all programs.
- ☒ Lead by example (e.g., practice what you preach, walk the talk).
- ☒ Promote lifelong learning.
- ☒ Promote professional development for all college staff in regards to emerging trends/technologies.
- ☒ Provide community outreach on sustainability issues.
- ☒ Provide energy and environmental re-careering
- ☒ Provide inverse degrees.
- ☒ Survey community and industry to assess emerging trends and business needs.
- ☒ Train and retrain technicians.
- ☒ Upgrade technician to professional status.

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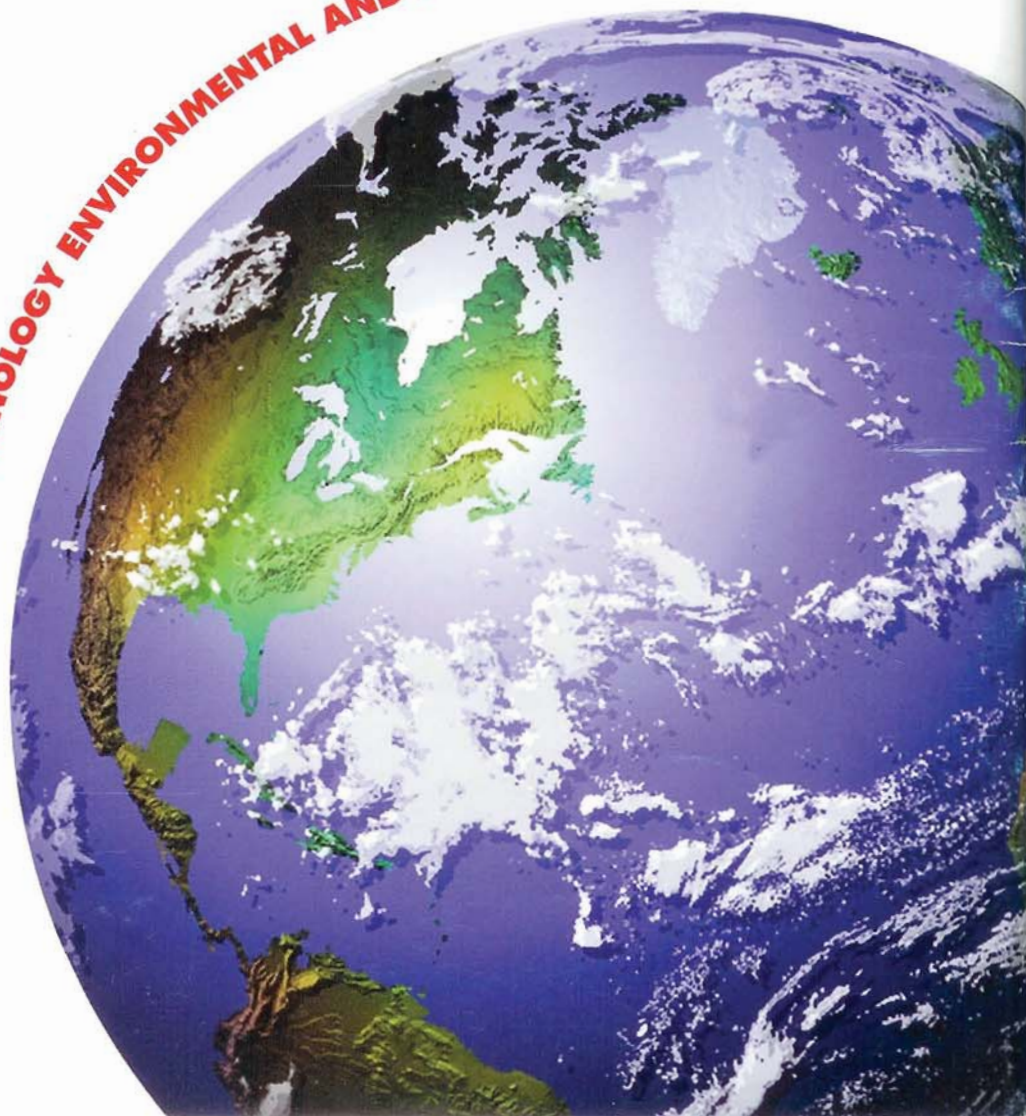


**Triple Bottom Line
of
Sustainability**



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ADVANCED TECHNOLOGY ENVIRONMENTAL AND ENERGY CENTER



APPENDIX E - SAMPLE
SUSTAINABILITY PLEDGE



Temple's Sustainability Pledge

"I pledge to live as sustainably as possible in all aspects of my life including but not limited to transportation alternatives, energy use, food choices, waste reduction and water conservation."

** Required*

Please select all that you commit to: *

I will participate in Temple's commuting options program, including the University Pass Program (students), Wage Works (employees), Bike Temple, car pooling, car sharing, or I will create my own sustainable commute that avoids single-occupancy car use at least once week.

I will set my thermostats (at home and at Temple) to reflect the University Energy Conservation Policy at 76°F (2+/-) during summer and 68°F (2+/-) during winter where possible.

I will turn off lights and electronic devices when I'm not using them and unplug electronic devices that I don't often use.

I will use compact fluorescent bulbs or LED fixtures wherever possible.

I will use the cold water settings to wash my clothes in order to conserve energy.

I will use blinds, shades, and/or curtains to help maintain a comfortable room temperature in a manner that conserves energy.

I will buy local, organic, or sustainably grown and harvested food when possible.

I will commit to implementing the three R's: reduce, reuse, and recycle.

I will use a reusable water bottle, reusable mug, and a reusable bag.

I will commit to turning the water off while brushing my teeth, shaving, washing my hands and washing my face.

I will encourage at least one additional person to take the Sustainability Pledge.

Other: _____

What is your Department or School within Temple? * _____

Are you a student, staff, or faculty (circle one)? * Student Faculty Staff

What is your email address? * _____

What is your name?: _____

Printed on paper with 30% recycled content
Please recycle

APPENDIX F - SAMPLE GREEN OFFICE PROGRAM

THE GREATER PHILADELPHIA GREEN BUSINESS COMMITMENT

TENANT CHECKLIST

I. LEADERSHIP AND EDUCATION

OBJECTIVE: RAISE AWARENESS OF SUSTAINABILITY EFFORTS AND ENVIRONMENTAL ISSUES WITHIN COMPANY AND BUSINESS COMMUNITY AT LARGE.

- | | Y | N | N/A |
|---|--------------------------|--------------------------|--------------------------|
| (1) Designate a green office advocate or working committee. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Assess and track your firm's/facility's (ies') Philadelphia region estimated baseline carbon footprint. (Use of the calculator provided by Pennsylvania Environmental Council is strongly encouraged; however, a member may assess its carbon footprint using the protocols identified below (see NOTE).) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Promote sustainability initiative and forthcoming changes, strategies, and objectives within company on a regular basis to raise consciousness and add transparency of the initiative. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) Develop and implement a written plan to reduce carbon footprint. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) Appoint management level sustainability officer. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (6) Establish and promote individual green pledge for employees. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (7) Actively encourage employees to adopt sustainable practices outside of work, and provide resources for doing so (such as discounted compact fluorescent (CF) light bulbs). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (8) Host regular green awareness events within the company. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (9) Prepare an internal annual report of progress and distribute to employees/shareholders. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (10) Distribute an external green e-newsletter on at least a quarterly basis. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (11) Prepare an external annual report on progress to be distributed publicly. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (12) Be in a LEED-certified building and/or certify your space as a LEED Commercial Interior. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (13) Post and maintain your current Greater Philadelphia Green Business Commitment Self-Certification Report (this checklist) on your external website. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (14) Post and maintain your current carbon footprint (summary data) on your external website. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

NOTE: Acceptable protocols are those developed by the World Resources Institute & World Business Council for Sustainable Development available at www.ghgprotocol.org, The Climate Registry at www.theclimateregistry.org/resources/protocols, or the California Climate Action Registry at www.climateregistry.org/tools/protocols/generalreporting

Red items indicate mandatory minimum requirements.

II. ENERGY

OBJECTIVE: REDUCE ENERGY USE AT FACILITY.

A. General

(1) Conduct an informal internal energy audit of your facility (ies) (assess and implement simple measures to reduce energy consumption). Y N N/A

(2) Purchase 10% of electricity demand as renewable energy credits (green power) from your utility.

(3) Purchase an additional 10% of electricity demand as renewable energy credits (green power) from your utility (20% total).

(4) Purchase an additional 10% of electricity demand as renewable energy credits (green power) from your utility (30% total).

(5) Have an outside firm conduct a formal energy audit of your facilities.

B. HVAC

(1) Maintain (and adhere to) a written policy that ensures blinds and curtains are closed during peak summer period (white reflects) to reduce A/C load.

(2) Institute and/or maintain a written maintenance program: Inspect permanent filters every 3 months and clean permanent filters with mild detergents when necessary (change replaceable filters every three months); check the entire system for coolant and air leaks, clogs, and obstructions of air intake and vents; keep the condenser coils free of dust and lint; keeps the evaporator coils free of excessive frost.

(3) Implement weatherizing policy and measures (i.e. weather stripping, caulking, sealing unused space, not heating/cooling unused space). Y N N/A

(4) If appropriate, apply window film to reduce solar heat gain.

(5) Install ceiling fans to promote air circulation and reduce the need for air conditioning or use fan-only mode on A/C.

C. Lighting

(1) Maintain (and adhere to) a written policy to turn off office lights when leaving for more than 15 minutes and post reminders.

(2) Replace incandescent bulbs with compact fluorescents or LED lights. Use halogen lamps only for low wattage task and spot lighting.

(3) Arrange your workspaces to take advantage of areas with natural sunlight, and design for increased natural lighting when remodeling (workspace within 30' of natural light).

(4) Use "task" lighting with energy efficient bulbs where extra light is needed, rather than over-lighting an entire area with ambient light.

(5) Replace standard fluorescent lights with low- or no-mercury fluorescent lights that are higher efficiency.

(6) Install optical reflectors or diffusers to increase lighting efficiency and reduce the number of fixtures, lamps.

(7) Disconnect unused ballasts in de-lamped fixtures and replace burned out lamps to avoid ballast damage.

Red items indicate mandatory minimum requirements.

II. ENERGY

OBJECTIVE: REDUCE ENERGY USE AT FACILITY.

C. Lighting

- | | Y | N | N/A |
|---|--------------------------|--------------------------|--------------------------|
| (8) Reduce ambient lighting to 1W/sf and 35 FC (except in specialty work areas). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (9) Clean lighting fixtures, diffusers and lamps so that they are lighting as effectively as possible (dirt can reduce lighting efficiency by up to 50%). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (10) Use daylight sensors in lighting systems. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (11) Replace magnetic ballasts with electronic ballasts and install T-8 or T-5 lamps. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (12) Install bypass/delay timers for off-hour lighting. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (13) Install occupancy sensors on lights in places of variable occupancy, such as restrooms, private offices, storage, etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (14) Increase natural lighting through installing sidelights or lowering cubicle and non-structural walls that block lighting to interior workstations. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

D. Office Equipment

- | | Y | N | N/A |
|--|--------------------------|--------------------------|--------------------------|
| (1) Set all office equipment to go to standby mode when not in use (e.g. energy saver buttons on copiers). Turn off equipment when not in use for long periods of time (end of workday). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Establish purchasing program to buy only EPEAT certified computers and LED monitors that consume approximately 1/3 less energy than larger CRT monitors. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Establish purchasing policy to only purchase Energy Star or energy efficient equipment and appliances. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) Install or use plug load controllers for office equipment that switches equipment off after working hours. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) Set refrigerator temperature between 38°F and 41°F and freezer between 10°F and 20°F. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (6) Install "instant-on" hot water. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

III. OPERATIONS & PROCUREMENT

OBJECTIVE: ENGAGE IN PURCHASING PRACTICES THAT MINIMIZE ENVIRONMENTAL IMPACTS WITHIN BUSINESS AND THROUGHOUT THE SUPPLY CHAIN.

A. Facilities / Janitorial

- | | Y | N | N/A |
|--|--------------------------|--------------------------|--------------------------|
| (1) Buy toilet paper, tissues and paper towels that have 35%-100% post-consumer recycled content. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Implement a “just in time” purchasing policy (inventory reduction purchasing) and a “first-in/first-out” chemical usage policy (using older chemicals first) to use old material first. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Replace aerosols with non-aerosol alternatives (such as pump sprays for fresheners and cleaners). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) Buy low or no VOC paints, coatings, adhesives, and sealants for renovation projects. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) When replacing furniture, phase in low-VOC furniture. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (6) Use green cleaning techniques and products, including low-toxic, biodegradable cleaners, and properly dispose of expired materials. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (7) When renovating, use eco-friendly flooring, such as CRI green label plus carpeting, CRI green label carpet pads, and floorscore certified flooring (bamboo, natural linoleum, cork, etc.). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

B. Office

- | | Y | N | N/A |
|---|--------------------------|--------------------------|--------------------------|
| (1) Institute a written policy regarding the rental of office equipment where appropriate. Businesses that lease equipment tend to use more durable items, salvage reusable parts, refurbish, recycle, or donate used equipment that can no longer be leased. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Purchase copy, computer or fax paper, letterhead, envelopes and business cards with at least 35% post consumer recycled content. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Purchase boxes and bags for retail use or shipping made from recycled paper or plastic (or reuse old boxes and bags). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) Where possible, use non-toxic water-based markers rather than toxic permanent ink markers/pens. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) Use recycled or remanufactured laser and copier toner cartridges. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (6) For shipping items, use shredded paper or corn starch pellets for packaging needs instead of purchasing styrofoam pellets, bubble wrap or other packaging materials; also, reuse, in your own packaging, packaging materials received. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (7) When purchasing new printers, buy ones with duplex capability. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (8) Print promotional materials with soy or other low-VOC inks. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

III. OPERATIONS & PROCUREMENT

OBJECTIVE: ENGAGE IN PURCHASING PRACTICES THAT MINIMIZE ENVIRONMENTAL IMPACTS WITHIN BUSINESS AND THROUGHOUT THE SUPPLY CHAIN.

C. General Practices

	Y	N	N/A		Y	N	N/A
(1) Maintain (and adhere to) a sustainable purchasing policy (Energy Star equipment and appliances; recycled content, biodegradable paper products; energy-efficient, low-mercury lamps; plastic products; food products; building/renovation materials). Consider and favor products that are recycleable at the end of their useful life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(7) Specify deliveries in reusable or returnable containers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Choose vendors who can articulate sustainable practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(8) When purchasing garbage pails or garbage bags, find ones that use recycled plastic (e.g. recycled HDPE trash liner bags instead of LDPE or LLDPE).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) Use unbleached and/or chlorine-free paper products (copy paper, promotional paper, paper towels, coffee filters, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(9) When possible, arrange to order environmentally friendly items from vendors who make deliveries for several items.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) Use local businesses for products and services whenever possible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(10) Ask vendors to take back packaging and used or damaged products for reuse and recycling.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) Choose vendors who take back products after their shelf life is over (e.g. fluorescent light bulbs).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(11) In order to improve indoor air quality, ban smoking from interior spaces and designate exterior smoking areas at least 25 feet from building entries, outdoor air intakes and operable windows, with cigarette butt disposal units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) Purchase items with the least packaging and work with vendors to minimize product packaging. Minimize packaging in your own products and services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(12) Serve locally-grown and/or organic food at corporate events when possible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IV. TRANSPORTATION

OBJECTIVE: REDUCE CARBON FOOTPRINT OF EMPLOYEE TRAVEL BY ENCOURAGING ALTERNATIVE COMMUTING AND FUEL ECONOMY.

A. Commuter

- | | Y | N | N/A | | Y | N | N/A |
|---|--------------------------|--------------------------|--------------------------|---|--------------------------|--------------------------|--------------------------|
| (1) Have a bike kit for employees who may have bicycle emergencies or problems. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (8) Encourage bicycling to work by offering rebates on bicycles bought for commuting, or provide employees a stipend or subsidy for bicycle maintenance. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Reserve with signage car/van pool and low-emissions/fuel efficient vehicle parking spaces. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (9) Offer secure areas for bicycle storage for both employees and customers. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Encourage commuter alternatives by informing employees, customers and others who visit your office about various transportation options (post bicycle route maps, transit schedules, commuter ride sign-ups, etc. in a visible area for employees). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (10) Offer lockers and showers for employees who walk, jog or bicycle to work. Provide your own, or subsidize the cost of locker rentals and shower passes at a nearby health club. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) If space locations are convenient, enroll your company in a car-sharing program. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (11) Offer electronic vehicle recharge ports for visitors and employees' electric vehicles. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) Operate a car pooling message board for employees who drive. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (12) Institute flextime and work-at-home days for employees who commute by car. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (6) Sign up for commuter benefits such as TransitChek for employees. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (13) Subsidize or otherwise incentivize employee purchase of hybrid vehicles. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (7) Distribute free or discounted public transportation passes (beyond discount offered by TransitChek), or offer other incentives (such as additional vacation days) for using public transit. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (14) Provide a commuter van or offer a shuttle service to and from bus, train and/or light rail stops; or be located within walking distance of transit stop. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

IV. TRANSPORTATION

OBJECTIVE: REDUCE CARBON FOOTPRINT OF EMPLOYEE TRAVEL BY ENCOURAGING ALTERNATIVE COMMUTING AND FUEL ECONOMY.

B. Business Travel

Y N N/A

(1) Have written policy to use hybrid cars during business travel when it is necessary to rent a car.

(2) Have written policy to use public transit or car share if possible when traveling from office in metro area.

(3) Use teleconferencing to cut down on amount of business travel.

(4) Buy carbon offsets for all business travel.

C. Fleet

Y N N/A

(1) Carefully plan delivery routes and errands to eliminate unnecessary trips.

(2) Purchase carbon dioxide offsets for company vehicles.

(3) Convert company vehicles to low-emission/fuel efficient vehicles (hybrid and/or using natural gas, electricity or alternative fuels).

(4) Make 50% of company fleet zero emissions vehicles (ZEV) or ACEEE 40 or less rated.

V. WASTE REDUCTION & RECYCLING

OBJECTIVE: REDUCE VOLUME OF WASTE GENERATED BY BUSINESS, RECYCLE AS MUCH WASTE AS POSSIBLE.

A. Food & Beverage

- | | Y | N | N/A | | Y | N | N/A |
|--|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|
| (1) Recycle food and beverage containers (all glass, #1 & #2 plastic and aluminum containers). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (5) Keep a stack of previously used paper near printers. Use it for drafts, scratch paper or internal memos or designate a draft tray on printers with multiple trays. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Supply water through a fountain, cooler or tap; eliminate bottled water. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (6) Recycle tyvek envelopes. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Use refillable containers of sugar, salt & pepper, half & half, etc. to avoid individual condiment packets. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (7) Write to or call senders requesting removal from mailing list to reduce junk mail. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) For catering and takeout, either use your own reusable dishes or encourage caterers to serve "family-style" in reusable serving dishes. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (8) Return labels from duplicate mailings and subscriptions requesting all but one be removed. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) In the lunch/break room, eliminate disposables (plastic utensils, coffee stirrers, paper towels) by using permanent ware (mugs, dishes, utensils, towels/rags, coffee filters, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (9) Write "refused" on unwanted first class mail and return to sender. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (6) Have on-site composting of organic waste or arrange for outside vendor to pick it up for composting. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (10) Purge your own mailing lists to eliminate duplication. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

B. Paper

- | | | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|
| (1) Recycle (or reuse) all paper products that your recycling vendor will accept. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (11) Institute a policy that switches to electronic forms, eliminate excess forms and make paper forms more efficient. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Maintain (and adhere to) a written policy of "green printing practices," including duplex printing, draft printing, and utilization of scrap paper. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (12) Where possible, reuse envelopes as both send and return envelopes: cover up old addresses and postage, affix new, and/or use two way or 'send and return' envelopes. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) If your facility still has an old printer without duplex capability, use only for single page documents and ensure multi-page documents are printed on duplex printer. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (13) Eliminate fax cover sheets by using "sticky" fax directory notes or use software that allows you to send and receive faxes directly from your computer without printing . | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) Encourage employees to read, highlight and comment on documents on the computer screen whenever possible. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (14) Institute written policy encouraging the use of the size reduction feature in photocopying (e.g. print two pages of book on one page). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Red items indicate mandatory minimum requirements. | | | | (15) Minimize misprints by posting a diagram showing how to load special paper, such as letterhead. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | (16) Recycle toner cartridges, cell phones and dry cell batteries. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

V. WASTE REDUCTION & RECYCLING

OBJECTIVE: REDUCE VOLUME OF WASTE GENERATED BY BUSINESS, RECYCLE AS MUCH WASTE AS POSSIBLE.

C. Policies

Y N N/A

(1) Make it easy for employees to recycle by placing clearly marked collection bins in convenient locations. Post signs and/or train employees regarding recycling policies and procedures in the office.

(2) Donate or exchange unwanted but usable items (furniture, supplies, electronics, scrap materials, computer disks, etc.) to schools, churches, hospitals, libraries, non-profit organizations, museums, teacher resource organizations, etc.; or enroll in a waste exchange program.

(3) Conduct a waste audit of your facilities.

Red items indicate mandatory minimum requirements.

VI. WATER MANAGEMENT

OBJECTIVE: REDUCE BUSINESS'S AGGREGATE WATER USE AND DISCHARGE OF POLLUTANTS INTO STORMWATER RUNOFF.

A. Exterior

Y N N/A

(1) If you need to use water to clean concrete or asphalt surfaces, use "dry sweeping," water efficient "spray brooms," or low flow (<3 gpm) spray nozzles with automatic shut-off rather than a garden hose.

(2) If company owns any vehicles, routinely check for leaks and keep a spill kit handy to catch/collect spills from leaking company or employee vehicles.

B. Interior

Y N N/A

(1) Post signs in restrooms and kitchen areas encouraging water conservation.

(2) Regularly check for and repair all leaks in your facility (toilet leaks can be detected in tank toilets with leak detecting tablets. Train your staff to monitor and respond immediately to leaking equipment.

(3) Understand your water bill and review it monthly for indications of leaks, spikes or other problems.

VII. INNOVATION

BUSINESSES MAY ATTAIN UP TO TWO EXTRA "INNOVATION" CREDITS FOR EACH CATEGORY IF THEY HAVE INSTITUTED PRACTICES WHICH ARE NOT ON THE CHECKLIST BUT WHICH FURTHER THE OBJECTIVE OF THE CATEGORY.

THE GREATER PHILADELPHIA GREEN BUSINESS COMMITMENT

OWNER CHECKLIST

I. LEADERSHIP AND EDUCATION

OBJECTIVE:

RAISE AWARENESS OF SUSTAINABILITY EFFORTS AND ENVIRONMENTAL ISSUES WITHIN COMPANY AND BUSINESS COMMUNITY AT LARGE.

- | | Y | N | N/A |
|---|--------------------------|--------------------------|--------------------------|
| (1) Designate a green office advocate or working committee. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Assess and track your firm's/facility's (ies') Philadelphia region estimated baseline carbon footprint. (Use of the calculator provided by Pennsylvania Environmental Council is strongly encouraged; however, a member may assess its carbon footprint using the protocols identified below (see NOTE).) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Promote sustainability initiative and forthcoming changes, strategies, and objectives within company on a regular basis to raise consciousness and add transparency of the initiative. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) Develop and implement a written plan to reduce carbon footprint. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) Appoint management level sustainability officer. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (6) Establish and promote individual green pledge for employees. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (7) Actively encourage employees to adopt sustainable practices outside of work, and provide resources for doing so (such as discounted compact fluorescent (CF) light bulbs). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (8) Host regular green awareness events within the company. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (9) Prepare an internal annual report of progress and distribute to employees/shareholders. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (10) Distribute an external green e-newsletter on at least a quarterly basis. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (11) Prepare an external annual report on progress to be distributed publicly. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (12) Be in a LEED-certified building and/or certify your space as a LEED Commercial Interior. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (13) Post and maintain your current Greater Philadelphia Green Business Commitment Self-Certification Report (this checklist) on your external website. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (14) Post and maintain your current carbon footprint (summary data) on your external website. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

NOTE: Acceptable protocols are those developed by the World Resources Institute & World Business Council for Sustainable Development available at www.ghgprotocol.org, The Climate Registry at www.theclimateregistry.org/resources/protocols, or the California Climate Action Registry at www.climateregistry.org/tools/protocols/generalreporting

Red items indicate mandatory minimum requirements.

II. ENERGY

OBJECTIVE: REDUCE ENERGY USE AT FACILITY.

A. General

(1) Conduct an informal internal energy audit of your facilities (assess and implement simple measures to reduce energy consumption). Y N N/A

(2) Purchase 10% of electricity demand as renewable energy credits (green power) from your utility. Y N N/A

(3) Purchase an additional 10% of electricity demand as renewable energy credits (green power) from your utility (20% total). Y N N/A

(4) Purchase an additional 10% of electricity demand as renewable energy credits (green power) from your utility (30% total). Y N N/A

(5) Have an outside firm conduct a formal energy audit of your facilities. Y N N/A

(6) Improve building envelope with increased insulation and high-performance windows that exceed current building standards. Y N N/A

(7) Create energy on-site, such as through photovoltaic panels, wind turbines or ground source heat pumps. Y N N/A

B. HVAC

(1) Maintain (and adhere to) a written policy that ensures blinds and curtains are closed during peak summer period (white reflects) to reduce A/C load. Y N N/A

(2) Institute and/or maintain a written maintenance program: Inspect permanent filters every 3 months and clean permanent filters with mild detergents when necessary (change replaceable filters every three months); check the entire system for coolant and air leaks, clogs, and obstructions of air intake and vents; keep the condenser coils free of dust and lint; keeps the evaporator coils free of excessive frost. Y N N/A

Red items indicate mandatory minimum requirements.

(3) Implement weatherizing policy and measures (i.e. weather stripping, caulking, sealing unused space, not heating/cooling unused space). Y N N/A

(4) If appropriate, apply window film to reduce solar heat gain. Y N N/A

(5) Install ceiling fans to promote air circulation and reduce the need for air conditioning or use fan-only mode on A/C. Y N N/A

(6) Program HVAC system to reduce operations when building is unoccupied or use occupancy sensors to adjust set points. Y N N/A

(7) Use, install, or replace HVAC equipment with Energy Star rated HVAC equipment. Y N N/A

(8) Shade sun-exposed windows and walls to mitigate the effect of direct sunlight during the summer. Use awnings, sunscreens, shade trees or shrubbery (only applicable for air-conditioned spaces). Y N N/A

(9) Install an energy management system (EMS) for central air conditioning and heating systems. Y N N/A

C. Lighting

(1) Maintain (and adhere to) a written policy to turn off office lights when leaving for more than 15 minutes and post reminders. Y N N/A

(2) Replace incandescent bulbs with compact fluorescents or LED lights. Use halogen lamps only for low wattage task and spot lighting. Y N N/A

(3) Arrange your workspaces to take advantage of areas with natural sunlight, and design for increased natural lighting when remodeling (workspace within 30' of natural light). Y N N/A

II. ENERGY

OBJECTIVE: REDUCE ENERGY USE AT FACILITY.

C. Lighting

- | | Y | N | N/A |
|--|--------------------------|--------------------------|--------------------------|
| (4) Use "task" lighting with energy efficient bulbs where extra light is needed, rather than over-lighting an entire area with ambient light. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) Replace standard fluorescent lights with low- or no-mercury fluorescent lights that are higher efficiency. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (6) Install optical reflectors or diffusers to increase lighting efficiency and reduce the number of fixtures, lamps. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (7) Disconnect unused ballasts in de-lamped fixtures and replace burned out lamps to avoid ballast damage. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (8) Reduce ambient lighting to 1W/sf and 35 FC (except in specialty work areas). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (9) Keep lighting fixtures, diffusers and lamps clean so that they are lighting as effectively as possible (dirt can reduce lighting efficiency by up to 50%). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (10) Use daylight sensors in lighting systems. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (11) Replace magnetic ballasts with electronic ballasts and install T-8 or T-5 lamps. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (12) Install bypass/delay timers for off-hour lighting. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (13) Install occupancy sensors on lights in places of variable occupancy, such as rest-rooms, private offices, storage, etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (14) Increase natural lighting through installing sidelights or lowering cubicle and non-structural walls that block lighting to interior workstations. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (15) Use photocells for exterior lighting and/or areas with significant natural daylight. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (16) Use LED fixtures for all emergency/exit lighting. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

D. Office Equipment

- | | Y | N | N/A |
|--|--------------------------|--------------------------|--------------------------|
| (1) Set all office equipment to go to standby mode when not in use (e.g. energy saver buttons on copiers). Turn off equipment when not in use for long periods of time (end of workday). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Establish purchasing program to buy only EPEAT certified computers and LED monitors that consume approximately 1/3 less energy than larger CRT monitors. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Establish purchasing policy to only purchase Energy Star or energy efficient equipment and appliances. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) Install or use plug load controllers for office equipment that switches equipment off after working hours. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) Set refrigerator temperature between 38°F and 41°F and freezer between 10°F and 20°F. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (6) Insulate all hot water pipes, hot water heaters and storage tanks. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (7) Install "instant-on" hot water. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

III. OPERATIONS & PROCUREMENT

OBJECTIVE:

ENGAGE IN PURCHASING PRACTICES THAT MINIMIZE ENVIRONMENTAL IMPACTS WITHIN BUSINESS AND THROUGHOUT THE SUPPLY CHAIN.

A. Facilities / Janitorial

- | | Y | N | N/A |
|---|--------------------------|--------------------------|--------------------------|
| (1) Buy toilet paper, tissues and paper towels that have 35%-100% post-consumer recycled content. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Implement a "just in time" purchasing policy (inventory reduction purchasing) and a "first-in/first-out" chemical usage policy (using older chemicals first) to use old material first. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Replace aerosols with non-aerosol alternatives (such as pump sprays for fresheners and cleaners). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) Buy low or no VOC paints, coatings, adhesives, and sealants for surface coating projects. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) When replacing furniture, phase in low-VOC furniture. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (6) Use green cleaning techniques and products, including low-toxic, biodegradable cleaners, and properly dispose of expired materials. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (7) When renovating, use eco-friendly flooring, such as CRI green label plus carpeting, CRI green label carpet pads, and floorscore certified flooring (bamboo, natural linoleum, cork, etc.). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (8) Reduce or eliminate the use of chemical pesticides by implementing an integrated pest management (IPM) program which utilizes planting locations, pest resistant plants, proper irrigation and cultivation procedures, biological controls and less toxic pesticides to prevent pest harborage. If using a pest control contractor, specify IPM techniques in contract. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

B. Office

- | | Y | N | N/A |
|--|--------------------------|--------------------------|--------------------------|
| (1) Institute a written policy regarding the leasing of office equipment where appropriate. Businesses that lease out equipment tend to use more durable items, salvage reusable parts, and refurbish, recycle, or donate used equipment that can no longer be leased. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Purchase copy, computer or fax paper, letterhead, envelopes and business cards with at least 35% post consumer recycled content. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Purchase boxes and bags for retail use or shipping made from recycled paper or plastic (or reuse old boxes and bags). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) Where possible, use non-toxic water-based markers rather than toxic permanent ink markers/pens. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) Use recycled or remanufactured laser and copier toner cartridges. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (6) For shipping items, use shredded paper or corn starch pellets for packaging needs instead of purchasing styrofoam pellets, bubble wrap or other packaging materials; also, reuse, in your own packaging, packaging materials received. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (7) When purchasing new printers, buy ones with duplex capability. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (8) Print materials with soy or other low-VOC inks. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

III. OPERATIONS & PROCUREMENT

OBJECTIVE:

ENGAGE IN PURCHASING PRACTICES THAT MINIMIZE ENVIRONMENTAL IMPACTS WITHIN BUSINESS AND THROUGHOUT THE SUPPLY CHAIN.

C. General Practices

	Y	N	N/A		Y	N	N/A
(1) Maintain (and adhere to) a sustainable purchasing policy (Energy Star equipment and appliances; recycled content, biodegradable paper products; energy-efficient, low-mercury lamps; plastic products; food products; building/renovation materials). Consider and favor products that are recyclable at the end of their useful life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(7) Specify deliveries in reusable or returnable containers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Choose vendors who can articulate sustainable practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(8) When purchasing garbage pails or garbage bags, find ones that use recycled plastic (e.g. recycled HDPE trash liner bags instead of LDPE or LLDPE).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) Use unbleached and/or chlorine-free paper products (copy paper, promotional paper, paper towels, coffee filters, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(9) When possible, arrange to order goods from vendors who make deliveries of multiple items in a single delivery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) Use local businesses for products and services whenever possible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(10) Ask vendors to take back packaging and used or damaged products for reuse and recycling.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) Choose vendors who take back products after their shelf life is over (e.g. fluorescent light bulbs).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(11) In order to improve indoor air quality, ban smoking from interior spaces and designate exterior smoking areas at least 25 feet from building entries, outdoor air intakes and operable windows, with cigarette butt disposal units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) Purchase items with the least packaging and work with vendors to minimize product packaging. Minimize packaging in your own products and services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(12) Serve locally-grown and/or organic food at workplace events when possible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IV. TRANSPORTATION

OBJECTIVE:

REDUCE CARBON FOOTPRINT OF EMPLOYEE TRAVEL BY ENCOURAGING ALTERNATIVE COMMUTING AND FUEL ECONOMY.

A. Commuter

	Y	N	N/A		Y	N	N/A
(1) Have a bike kit for employees who may have bicycle emergencies or problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(8) Encourage bicycling to work by offering rebates on bicycles bought for commuting, or provide employees a stipend or subsidy for bicycle maintenance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Reserve, with signage, car/van pool and low-emissions/fuel efficient vehicle parking spaces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(9) Offer secure areas for bicycle storage for both employees and customers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) Encourage commuter alternatives by informing employees, customers and others who visit your office about various transportation options (post bicycle route maps, transit schedules, commuter ride sign-ups, etc. in a visible area for employees).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(10) Offer lockers and showers for employees who walk, jog or bicycle to work. Provide your own, or subsidize the cost of locker rentals and shower passes at a nearby health club.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) If space locations are available, enroll your company in a car-sharing program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(11) Offer electronic vehicle recharge ports for visitors and employees' electric vehicles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) Operate a car pooling message board for employees who drive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(12) Institute flextime and work-at-home days for employees who commute by car.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) Sign up for commuter benefits such as TransitChek for employees.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(13) Subsidize or otherwise incentivize employee purchase of hybrid vehicles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(7) Distribute free or discounted public transportation passes (beyond discount offered by TransitChek), or offer other incentives (such as additional vacation days) for using public transit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(14) Provide a commuter van or offer a shuttle service to and from bus, train and/or light rail stops; or be located within walking distance of transit stop.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IV. TRANSPORTATION

OBJECTIVE:

REDUCE CARBON FOOTPRINT OF EMPLOYEE TRAVEL BY ENCOURAGING ALTERNATIVE COMMUTING AND FUEL ECONOMY.

B. Business Travel

Y N N/A

(1) Have written policy to use hybrid cars during business travel when it is necessary to rent a car.

(2) Have written policy to use public transit or car share if possible when traveling from office in metro area.

(3) Use teleconferencing to cut down on amount of business travel.

(4) Buy carbon offsets for all business travel.

C. Fleet

Y N N/A

(1) Carefully plan delivery routes and errands to eliminate unnecessary trips.

(2) Purchase carbon dioxide offsets for company vehicles.

(3) Convert company vehicles to low-emission/fuel efficient vehicles (hybrid and/or using natural gas, electricity or alternative fuels).

(4) Make 50% of company fleet zero emissions vehicles (ZEV) or ACEEE 40 or less rated.

V. WASTE REDUCTION & RECYCLING

OBJECTIVE:

REDUCE VOLUME OF WASTE GENERATED BY BUSINESS, RECYCLE AS MUCH WASTE AS POSSIBLE.

A. Food & Beverage

- | | Y | N | N/A | | Y | N | N/A |
|--|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|
| (1) Recycle food and beverage containers (all glass, #1 & #2 plastic and aluminum containers). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (5) Keep a stack of previously used paper near printers. Use it for drafts, scratch paper or internal memos or designate a draft tray on printers with multiple trays. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Supply water through a fountain, cooler or tap; eliminate bottled water. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (6) Recycle tyvek envelopes. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Use refillable containers of sugar, salt & pepper, half & half, etc. to avoid individual condiment packets. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (7) Write to or call senders requesting removal from mailing list to reduce junk mail. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) For catering and takeout, either use your own reusable dishes or encourage caterers to serve "family-style" in reusable serving dishes. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (8) Return labels from duplicate mailings and subscriptions requesting all but one be removed. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) In the lunch/break room, eliminate disposables (plastic utensils, coffee stirrers, paper towels) by using permanent ware (mugs, dishes, utensils, towels/rags, coffee filters, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (9) Write "refused" on unwanted first class mail and return to sender. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (6) Have on-site composting of organic waste or arrange for outside vendor to pick it up for composting. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (10) Purge your own mailing lists to eliminate duplication. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

B. Paper

- | | | | | | | | |
|--|--------------------------|--------------------------|--------------------------|---|--------------------------|--------------------------|--------------------------|
| (1) Recycle (after full use/reuse) all paper products that your recycling vendor will accept. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (11) Institute a policy that switches to electronic forms, eliminate excess forms and make paper forms more efficient. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Maintain (and adhere to) a written policy of "green printing practices," including duplex printing, draft printing, and utilization of scrap paper. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (12) Where possible, reuse envelopes as both send and return envelopes: cover up old addresses and postage, affix new, and/or use two way or 'send and return' envelopes. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) If your facility still has an old printer without duplex capability, use only for single page documents and ensure multi-page documents are printed on duplex printer. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (13) Eliminate fax cover sheets by using "sticky" fax directory notes or use software that allows you to send and receive faxes directly from your computer without printing. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) Encourage employees to read, highlight and comment on documents on the computer screen whenever possible. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (14) Institute written policy encouraging the use of the size reduction feature in photocopying (e.g. print two pages of book on one page). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | (15) Minimize misprints by posting a diagram showing how to load special paper, such as letterhead. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | (16) Recycle toner cartridges, cell phones and dry cell batteries. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Red items indicate mandatory minimum requirements.

V. WASTE REDUCTION & RECYCLING

OBJECTIVE:

REDUCE VOLUME OF WASTE GENERATED BY BUSINESS, RECYCLE AS MUCH WASTE AS POSSIBLE.

Y N N/A

C. Policies

- (1) Make it easy for employees to recycle by placing clearly marked collection bins in convenient locations. Post signs and/or train employees regarding recycling policies and procedures in the office.
- (2) Donate or exchange unwanted but usable items (furniture, supplies, electronics, scrap materials, computer disks, etc.) to schools, churches, hospitals, libraries, non-profit organizations, museums, teacher resource organizations, etc.; or enroll in a waste exchange program.
- (3) Conduct a waste audit of your facilities.

VI. WATER MANAGEMENT

OBJECTIVE:

REDUCE BUSINESS'S AGGREGATE WATER USE AND DISCHARGE OF POLLUTANTS INTO STORMWATER RUNOFF.

A. Exterior

	Y	N	N/A		Y	N	N/A
(1) If you need to use water to clean concrete or asphalt surfaces, use "dry sweeping," water efficient "spray brooms," or low flow (<3 gpm) spray nozzles with automatic shut-off rather than a garden hose.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(7) Institute policy not to wash cars in business parking lot. Only wash cars at a designated car wash.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) If company owns any vehicles, routinely check for leaks and keep a spill kit handy to catch/collect spills from leaking company or employee vehicles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(8) Clean concrete or asphalt surfaces by vacuuming or using equipment that collects and reuses dirty water.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) Keep receiving, parking, landscaping and dumpster areas clean and free from litter, oil drips and debris and keep dumpsters covered when not in use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(9) Post signs at trouble stormwater spots (e.g., loading docks, dumpster areas, outside hoses) describing proper stormwater practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) Have a written maintenance procedure for all storm water retention and detention basins.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(10) Ensure that your sprinkler and irrigation systems use water-saving best practices, including: optimizing spacing and avoiding runoff onto paved surfaces; using water efficient drip irrigation or soaker hoses where feasible; using water during non-daylight hours; using rain shutoff devices; regularly repairing all broken/defective valves; test systems 4x/year.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) Regularly check and maintain storm drain openings and basins that are located on your property. Keep litter, debris and soil away from storm drains.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(11) Plant gardens and ground cover that minimize water use and erosion: native or adapted, drought tolerant ground cover or shrubs instead of turf; permeable pavers; plant drought-tolerant turf if necessary; group plants with similar water requirements together on the same irrigation line ("hydro-zoning"). If possible, plant and maintain a street tree or sidewalk garden with drought-tolerant plants next to your business to allow for more natural absorption of water and less run-off.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) Label all storm water drains with a message such as "No dumping - Protect our Bay and Ocean."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(12) Install a rain garden to manage stormwater runoff from impervious surfaces on your property (i.e. parking lot, roof).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VI. WATER MANAGEMENT

OBJECTIVE:
REDUCE BUSINESS'S AGGREGATE WATER USE AND DISCHARGE OF
POLLUTANTS INTO STORMWATER RUNOFF.

B. Interior

- | | Y | N | N/A |
|---|--------------------------|--------------------------|--------------------------|
| (1) Post signs in restrooms and kitchen areas encouraging water conservation. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Regularly check for and repair all leaks in your facility (toilet leaks can be detected in tank toilets with leak detecting tablets. Train your staff to monitor and respond immediately to leaking equipment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Understand your water bill and review it monthly for indications of leaks, spikes or other problems. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) Change window cleaning schedule from "periodic" to "as needed." | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) Install low flow aerators with flow rates not to exceed 2.2 gpm for sink faucets and lavatory sinks and 2.5 gpm for kitchen sinks, and 2.5 gpm (or lower) low flow showerheads. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (6) Install low flow, self-closing faucets, either infrared or spring-loaded. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (7) Reduce water pressure to no higher than 70 psi by installing pressure-reducing valves with pressure gauge. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (8) Replace all pre-1992 toilets with 1.6 gpf toilets. Provide additional urinals in men's restrooms & reduce number of toilets. Replace non-efficient toilets (>3.5 gpf) with ultra high efficiency toilets (< 1.2 gpf). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (9) Replace all urinals with models that flush at no more than 1.0 gpf. Replace non-efficient urinals with new ultra low-flow (<0.5 gpm) or install waterless urinals. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (10) Replace air-cooled air conditioning units with water-cooled models. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

VII. INNOVATION

BUSINESSES MAY ATTAIN UP TO TWO EXTRA "INNOVATION" CREDITS FOR EACH CATEGORY IF THEY HAVE INSTITUTED PRACTICES WHICH ARE NOT ON THE CHECKLIST BUT WHICH FURTHER THE OBJECTIVE OF THE CATEGORY.

APPENDIX G - BOROUGH'S GREEN PURCHASING POLICY

RESOLUTION NO. 11-22-10-01f

RESOLUTION CREATING A GREEN PURCHASING POLICY

WHEREAS, The Borough Council and Administration strive to save tax dollars, assure clean air and water, improve working and living environments to build a community which would thrive well into the new century; and

WHEREAS, The Borough Council and Administration wishes to build a model of government which benefits our residents now and far into the future with green community initiatives that are easy to replicate and economically feasible; and

WHEREAS, The Borough Council and Administration seeks to improve energy efficiency, reduce health hazards, increase purchase of energy star and recyclable products where economically feasible and in accordance with Local Public Contracts Law.

NOW, THEREFORE BE IT RESOLVED, That the following guidelines are established as general recommendations when purchasing:

1. Aim to use products that have least negative impact on the environment as possible, both when they are manufactured and when they are used.
2. Aim to use products that are not harmful or toxic to consumers, users, to the environment, or to working environments.
3. Aim to use products that do not unnecessarily consume energy and natural resources.
4. The preference for energy star and recyclable appliances will be reflected in the borough's updated employee manual.


Council President


Council Member

Introduced: November 22, 2010
Adopted: November 22, 2010

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Attachment B

BOROUGH OF NORTH PLAINFIELD MASTER PLAN 2015 HOUSING ELEMENT AND FAIR SHARE PLAN

Prepared for:

Planning Board
Borough of North Plainfield
263 Somerset Street
North Plainfield, NJ 07060

Prepared by:

Phillips Preiss Grygiel LLC
Planning and Real Estate Consultants
33-41 Newark Street
Hoboken, New Jersey 07030

Adopted October 28, 2015

The original copy of this document was signed and sealed
in accordance with N.J.S.A. 45:14 A-1 et seq.

A handwritten signature in black ink, appearing to read "Paul Grygiel", is written over a solid horizontal line.

Paul Grygiel
New Jersey Professional Planner License # 5518

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Acknowledgments

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- Dawn Gaebel, Secretary
- Maryann Thorpey, Assistant Secretary
- Brian D. Schwartz, Esq., Planning Board Attorney

I. Introduction

This Housing Element and Fair Share Plan has been prepared on behalf of the Borough of North Plainfield, Somerset County, in accordance with the New Jersey Municipal Land Use Law per N.J.S.A. 40:55D-28b(3), the Fair Housing Act (N.J.S.A. 52:27D-301 et seq.) and the Second Round Substantive Rules (N.J.A.C. 5:93 et seq.) of the New Jersey Council on Affordable Housing (COAH). This document supersedes and replaces the Borough's 2008 Housing Element and Fair Share Housing Plan.

The Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., requires that a municipal master plan include a Housing Element in order for the municipality to exercise the power to zone and regulate land use. The Housing Element and Fair Share Plan are adopted by the Borough Planning Board and endorsed by the governing body prior to the submission of a municipal petition to the New Jersey Council on Affordable Housing (COAH) or the courts for substantive certification of the Housing Element and Fair Share Plan pursuant to N.J.A.C. 5:96-1 et seq. The Housing Element and Fair Share Plan are drawn to achieve the goal of meeting the Borough's obligation to plan and regulate land use to provide for a fair share of the regional need for affordable housing.

There are three components to a municipality's affordable housing obligation: the Rehabilitation share, the Prior Round Obligation¹ and the Third Round Obligation. The previous two iterations of COAH's Third Round rules have been invalidated by the Court. As a result of its March 10, 2015 ruling, In the Matter of the Adoption of N.J.A.C. 5:96 and 5:97 by the New Jersey Council on Affordable Housing, the New Jersey Supreme Court ruled that the courts would accept Mt. Laurel cases and, as such, the municipal affordable housing obligation will be determined by the trial court on a case-by-case basis. The Supreme Court directed that trial courts use the methodologies from the First and Second Rounds as developed by COAH and approved by court decisions. Importantly, the Court preserved Prior Round Obligations.

North Plainfield remains committed to meeting its constitutional obligation to provide through its land use regulations a realistic opportunity for a fair share of the region's present and prospective needs for housing for low- and moderate-income families. North Plainfield has fulfilled its Prior Round Obligation and Third Round Obligation and will address a reasonable portion of its Rehabilitation obligation, while asking for a waiver from addressing the full obligation.

¹ In 1994, the Council on Affordable Housing (COAH) adopted N.J.A.C. 5:93, et seq., which established criteria for the calculation of each municipality's low- and moderate-income housing obligation. The obligation was cumulative for the period between 1987 and 1999 (i.e., COAH's First and Second Rounds), which is commonly referred to as the Prior Round. The Prior Round Obligation in this document refers to the period between 1987 and 2015.

II. Affordable Housing in New Jersey

In 1975 the Supreme Court of New Jersey in South Burlington County N.A.A.C.P. v. Township of Mount Laurel, 67 N.J. 151 (1975), ruled that the developing municipalities in the State of New Jersey exercising their zoning power, in general, had a constitutional obligation to provide a realistic opportunity for the construction of their fair share of the region's low- and moderate-income housing needs. In 1983, the Supreme Court refined that constitutional obligation in South Burlington County N.A.A.C.P. v. Township of Mount Laurel, 92 N.J. 158 (1983), to apply to those municipalities having any portion of their boundaries within the growth area as shown on the State Development Guide Plan. In 1985, the New Jersey Legislature adopted, and the Governor signed, the Fair Housing Act ("FHA") N.J.S.A. 52:2D-301 et seq. which transformed the judicial doctrine which became known as the "Mount Laurel doctrine" into a statutory one and provided an alternative administrative process in which municipalities could elect to participate in order to establish a Housing Element and Fair Share Plan ("HEFSP") that would satisfy its constitutional obligation by creating an administrative agency known as the Council on Affordable Housing ("COAH") to develop regulations to define the obligation and implement it. COAH proceeded to adopt regulations for first round obligations applicable from 1987 to 1993 and second round obligations that created a cumulative obligation from 1987 to 1999.

COAH first proposed third round substantive and procedural rules in October, 2003. 35 N.J.R. 4636(a); 35 N.J.R. 4700(a). Those rules remained un-adopted and COAH re-proposed both the substantive and procedural third round rules (N.J.A.C. 5:94 and 5:95) in August of 2004 and adopted the same effective on December 20, 2004 (the "2004 Regulations"). The 2004 Regulations were challenged and on January 25, 2007, the Appellate Division invalidated various aspects of those regulations and remanded considerable portions of the rules to COAH with direction to adopt revised rules. In the Matter of the Adoption of N.J.A.C. 5:94 and 5:95 by the New Jersey Council on Affordable Housing, 390 N.J. Super. 1 (App. Div.), certif. denied, 192 N.J. 72 (2007) (the "2007 Case"). On January 22, 2008, COAH proposed and published revised third round regulations in the New Jersey Register. 40 N.J.R. 237.

On May 6, 2008, COAH adopted the revised third round regulations and advised that the new regulations would be published in the June 2, 2008 New Jersey Register, thereby becoming effective. On May 6, 2008, COAH simultaneously proposed amendments to the revised third round rules it had just adopted. Those amendments were published in the June 16, 2008 New Jersey Register, 40 N.J.R. 3373 (Procedural N.J.A.C. 5:96); 40 N.J.R. 3374 (Substantive N.J.A.C. 5:97). The amendments were adopted on September 22, 2008 and made effective on October 20, 2008.

N.J.A.C. 5:96 and 5:97 as adopted in 2008 were challenged in an appeal entitled In the Matter of the Adoption of N.J.A.C. 5:96 and 5:97 by the New Jersey Council on Affordable Housing, 416 N.J. Super. 462 (App. Div. 2010) (the "2010 Case"). In its October 8, 2010 decision, the Appellate Division determined, among other things, that the growth share methodology was invalid and that COAH should adopt regulations utilizing methodologies similar to the ones utilized in the first and second rounds, i.e. 1987-1999. On September 26, 2013, the Supreme Court of New Jersey affirmed the Appellate Division's invalidation of the third iteration of the third round regulations, sustained their determination

that the growth share methodology was invalid, and directed COAH to adopt new regulations based upon the methodology utilized in the first and second rounds. In the Matter of the Adoption of N.J.A.C. 5:96 and 5:97 by the New Jersey Council on Affordable Housing, 215 N.J. 578 (2013) (the “2013 Case”). COAH proceeded to propose such regulations in accordance with the schedule and amended schedule established by the New Jersey Supreme Court in the 2013 Case. On October 20, 2014, COAH deadlocked with a 3-3 vote and failed to adopt the revised third round regulations.

Due to COAH’s failure to adopt the revised regulations and subsequent inaction, Fair Share Housing Center (“FSHC”), a party in the 2010 Case and the 2013 Case, filed a motion with the New Jersey Supreme Court to enforce litigant’s rights. On March 10, 2015 the New Jersey Supreme Court issued its decision on FSHC’s motion to enforce litigant’s rights. The Supreme Court in the 2015 Case found that the COAH administrative process had become non-functioning and, as a result, returned primary jurisdiction over affordable housing matters to the trial courts. In the Matter of the Adoption of N.J.A.C. 5:96 and 5:97 by the New Jersey Council on Affordable Housing, 221 N.J. (2015) (the “2015 Case”). In doing so, the Supreme Court declined to adopt a specific methodology or formula to calculate the third round affordable housing obligations of the municipalities. The Court did provide some guidance by reiterating its endorsement of the previous methodologies employed in the First and Second Round Rules as the template to establish third round affordable housing obligations. The Court also preserved Prior Round Obligations.

The March 2015 Supreme Court decision recognized that a number of municipalities attempted to address their affordable housing obligations in 2008 by preparing a housing element and fair share plan and petitioning COAH for substantive certification of the plan. Through no fault of its own, North Plainfield, like a number of other municipalities, did not receive substantive certification of its 2008 plan due to inaction by COAH and subsequent legal challenges. Such towns are considered “participating municipalities” and were afforded an opportunity to prepare a new housing element and fair share plan to address its affordable housing obligations.

III. Housing Element/ Fair Share Plan Requirements

In accordance with the Municipal Land Use Law (*N.J.S.A 40:55D-1, et seq.*), a municipal Master Plan must include a housing element as the foundation for the municipal zoning ordinance. Pursuant to the Fair Housing Act, a municipality's housing element must be designed to provide access to affordable housing to meet present and prospective housing needs, with particular attention to low- and moderate-income housing. The housing element must contain at least the following, as per the FHA at *N.J.S.A 52:27D-310*:

- 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;
- A projection of the municipality's housing stock, including the probable future construction of low- and moderate-income housing, for the next ten years, taking into account, but not necessarily limited to, construction permits issued, approvals of applications for development, and probable residential development trends;
- An analysis of the municipality's demographic characteristics, including, but not necessarily limited to, household size, income level, and age;
- An analysis of the existing and probable future employment characteristics of the municipality;
- A determination of the municipality's present and prospective fair share of low- and moderate-income housing and its capacity to accommodate its present and prospective housing needs, including its fair share of low- and moderate-income housing; and
- A consideration of the lands 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.

IV. Housing Stock and Demographic Analysis

Housing Stock Inventory

In 2013, there were 7,868 housing units in North Plainfield, of which 516, or 6 percent, were vacant. Of the 7,352 occupied units, 56 percent were owner occupied and 44 percent were renter occupied. Table 1, Housing Units by Occupancy Status, 2013, illustrates this occupancy status in 2013.

Table 1. Housing Units by Occupancy Status, 2013

	Housing Units	Owner Occupied	Renter Occupied
Occupied	7,352	4,154	3,198
Vacant	516	-	-
Total	7,868	-	-

Source: American Community Survey, 2009-2013

Approximately 48 percent of the total housing stock consists of single-family detached units. Structures with three or more units make up 30 percent of the total housing stock. See Table 2, Housing Units by Number of Units in Structure, 2013, for a detailed explanation of housing units in 2013.

Table 2. Housing Units by Number of Units in Structure, 2013

Number of Units	Total	Percent
1, Detached	3,801	48.3%
1, Attached	219	2.8%
2	1,491	19.0%
3 or 4	497	6.3%
5 to 9	618	7.9%
10 to 19	337	4.3%
20+	905	11.5%
Mobile Home	0	0.0%
Other	0	0.0%
Total	7,868	100.0%

Source: American Community Survey, 2009-2013

Table 3, Housing Units by Age, 2013 illustrates the age of the Borough's housing stock. As one would expect from an older, largely built-out community, a large portion of the housing (i.e., 30 percent) was constructed before 1940. However, the majority of the housing (i.e., 63 percent) was constructed in the years between 1940 and 1979. Less than 4 percent of the Borough's housing was constructed in the years following 1990.

Table 3. Housing Units by Age, 2013

Year Built	Total Units	Percent
2010 or later	0	0.0%
2000-2010	77	1.0%
1990-2000	205	2.6%
1980-1989	307	3.9%
1970-1979	607	7.7%
1960-1969	1,644	20.9%
1950-1959	1,546	19.6%
1940-1949	1,122	14.3%
Before 1940	2,360	30.0%
Total	7,868	100.0%

Source: American Community Survey, 2009-2013

Table 4, Housing Units by Number of Rooms for North Plainfield and Somerset County, 2013, shows that in North Plainfield, 22 percent of housing units have between one and three rooms; 50 percent have between four and six rooms; and 29 percent have seven or more rooms. In Somerset County, 10 percent of housing units have between one and three rooms; 42 percent have between four and six rooms; and 48 percent have seven or more rooms. The mean number rooms per unit in North Plainfield is 5.2, which indicates that housing stock in the Borough has, on average, fewer rooms than that of housing units County-wide (i.e., 6.4 rooms per unit).

Table 4. Housing Units by Number of Rooms for North Plainfield and Somerset County, 2013

Rooms	Number of Units in North Plainfield	Percent of Units in North Plainfield	Number of Units in Somerset County	Percent of Units in Somerset County
1	206	2.6%	1,331	1.1%
2	215	2.7%	1,301	1.1%
3	1,275	16.2%	9,059	7.3%
4	1,180	15.0%	14,665	11.8%
5	1,430	18.2%	18,446	14.9%
6	1,286	16.3%	19,244	15.5%
7	1,112	14.1%	16,292	13.2%
8	704	8.9%	16,869	13.6%
9+	460	5.8%	26,578	21.5%
Total	7,868	100.0%	123,785	100.0%
Mean Rooms per Unit	5.2		6.4	

Source: American Community Survey, 2009-2013

Tables 5 and 6, Housing Values, Owner Occupied, 2000 and 2013, respectively, show that the median housing value of owner occupied housing in North Plainfield increased 86 percent between 2000 and 2013. During this same time, the median value of owner occupied housing in Somerset County increased by 79 percent. In 2000, North Plainfield's median housing value of \$150,700 was 32 percent lower than that of Somerset County's median value of \$222,400. In 2013, North Plainfield's median housing value of \$280,800 was 30 percent lower than that of the median value of \$398,800 for Somerset County.

Table 5. Housing Values, Owner Occupied, 2000

Housing Value	Number in North Plainfield	Percent in North Plainfield	Number in Somerset County	Percent in Somerset County
Less than \$50,000	93	2.2%	722	0.9%
\$50,000 to \$99,999	326	7.7%	3,965	4.7%
\$100,000 to \$149,999	1,659	39.3%	14,984	17.8%
\$150,000 to \$199,999	1,767	41.8%	17,502	20.8%
\$200,000 to \$299,999	339	8.0%	20,315	24.1%
\$300,000 to \$499,999	37	0.9%	18,122	21.5%
\$500,000 to \$999,999	4	0.1%	7,089	8.4%
\$1,000,000 or more	0	0.0%	1,454	1.7%
Total	4,225	100.0%	84,153	100.0%
2000 Median Value	\$150,700		\$222,400	

Source: 2000 U.S. Census

Table 6. Housing Values, Owner Occupied, 2013

Housing Value	Number in North Plainfield	Percent in North Plainfield	Number in Somerset County	Percent in Somerset County
Less than \$50,000	47	1.1%	951	1.1%
\$50,000 to \$99,999	84	2.0%	787	0.9%
\$100,000 to \$149,999	188	4.5%	1,599	1.8%
\$150,000 to \$199,999	400	9.6%	2,981	3.3%
\$200,000 to \$299,999	1,787	43.0%	19,103	21.2%
\$300,000 to \$499,999	1,528	36.8%	33,576	37.3%
\$500,000 to \$999,999	120	2.9%	26,385	29.3%
\$1,000,000 or more	0	0.0%	4,681	5.2%
Total	4,154	100.0%	90,063	100.0%
2013 Median Value	\$280,800		\$398,800	

Source: American Community Survey, 2009-2013

Monthly rental costs in North Plainfield are somewhat lower than that of Somerset County, with almost 77 percent of Borough renters paying over \$1,000 per month in rent. In North Plainfield, the largest percentage of renters (i.e., 50 percent) pay between \$1,000 and \$1,499 per month in rent. See Table 7, Comparison of North Plainfield and Somerset County, Monthly Rental Cost, 2013, for additional details.

Table 7. Comparison of North Plainfield and Somerset County, Monthly Rental Cost, 2013

Monthly Rent	Number in North Plainfield	Percent in North Plainfield	Number in Somerset County	Percent in Somerset County
Less than \$200	0	0.0%	158	0.6%
\$200 - \$299	28	0.9%	332	1.4%
\$300 - \$499	47	1.6%	624	2.5%
\$500 - \$749	69	2.3%	753	3.1%
\$750 - \$999	546	18.1%	2,460	10.0%
\$1,000 - \$1,499	1,506	49.9%	9,968	40.7%
\$1,500 or more	825	27.3%	10,216	41.7%
Total	3,021	100.0%	24,511	100.0%
Median Rent	\$1,219	-	\$1,386	-

Source: American Community Survey, 2009-2013

In 2013, 49 percent of North Plainfield owner occupied households contributed 30 percent or more of their income towards monthly housing costs, whereas 26 percent of North Plainfield owner occupied households expended less than 20 percent of their income on monthly housing costs. See Table 8, Monthly Housing Costs as Percentage of Household Income in the Past 12 Months – Owner Occupied Units, for further information.

Table 8. Monthly Housing Costs as Percentage of Household Income in the Past 12 Months – Owner Occupied Housing Units, 2013

	Less than 20 percent	20 to 29 percent	30 percent or more
Less than \$20,000	0.0%	0.0%	4.0%
\$20,000 - \$34,999	0.0%	0.5%	6.4%
\$35,000 - \$49,999	1.0%	2.1%	8.8%
\$50,000 - \$74,999	2.3%	5.5%	13.7%
\$75,000 or more	22.6%	16.6%	16.5%
Zero or Negative Income	0.0%		

Source: American Community Survey, 2009-2013

In 2013, approximately 50 percent of North Plainfield renter occupied households contributed 30 percent or more of their income to monthly housing costs. In contrast, 22 percent of North Plainfield renter occupied households contributed less than 20 percent of their income on monthly housing costs. See Table 9, Monthly Housing Costs as a Percentage of Household Income in the Past 12 Months – Renter Occupied Units, 2013, for further information.

Table 9. Monthly Housing Costs as a Percentage of Household Income in the Past 12 Months – Renter Occupied Housing Units, 2013

	Less than 20 percent	20 to 29 percent	30 percent or more
Less than \$20,000	0.0%	0.9%	14.9%
\$20,000 - \$34,999	0.0%	0.9%	18.5%
\$35,000 - \$49,999	1.2%	3.7%	11.1%
\$50,000 - \$74,999	6.2%	8.1%	5.0%
\$75,000 or more	15.0%	8.5%	0.2%
Zero or Negative Income	1.1%		
No Cash Rent	4.6%		

Source: American Community Survey, 2000-2013

North Plainfield has 58 housing units that lack complete plumbing facilities and 454 units that are overcrowded (defined as having 1.01 or more persons per room). The Borough also has 105 units that have no telephone service available and 104 units that lack complete kitchen facilities. See Table 10, Selected Quality Indicators, Occupied Housing Stock, 2013, for further information.

Table 10. Selected Quality Indicators, Occupied Housing Stock, 2013

	Overcrowded	No Telephone Service Available	Lacking Complete Plumbing Facilities	Lacking Complete Kitchen Facilities
Units	454	105	58	104

Source: American Community Survey, 2009-2013

General Population Characteristics

The population of North Plainfield has increased overall between 1980 and 2010. Though the Borough’s population decreased slightly between 1980 and 1990 (i.e., -1.5%), it grew by 12 percent between 1990 and 2000. In 2010, the Borough’s population was observed at 21,936 persons. See Table 11, Population Change, 1980-2010, for more information.

Table 11. Population Change, 1980-2010

	1980	1990	Percent Change (1980-1990)	2000	Percent Change (1990-2000)	2010	Percent Change (2000-2010)
North Plainfield	19,108	18,820	-1.5%	21,103	12.1%	21,936	3.9%
Somerset County	203,129	240,279	18.3%	297,490	23.8%	323,444	8.7%

Source: 1980, 1990, 2000, and 2010 U.S. Census

From 2000 through 2010, there were shifts in the age distribution of North Plainfield. The age group 15 to 24 increased from 2,625 persons to 2,849 persons (i.e., 9 percent). The age group 25 to 34 decreased from 3,837 persons to 3,589 persons (i.e., -7 percent). The largest decrease was for the age group 75 and older, which decreased from 1,038 persons to 815 persons (i.e., -22 percent). The largest increase was for the age group 55 to 64, which increased from 1,434 persons to 2,259 persons (i.e., 58 percent). See Table 12, Comparison of Age Distribution, 2000-2010, for additional details.

Table 12. Comparison of Age Distribution, 2000-2010

Age Group	2000	Percent	2010	Percent	Percent Change
Under 5	1,654	7.8%	1,611	7.3%	-2.6%
5-14	2,990	14.2%	2,869	13.1%	-4.0%
15-24	2,625	12.4%	2,849	13.0%	8.5%
25-34	3,837	18.2%	3,589	16.4%	-6.5%
35-44	3,872	18.3%	3,650	16.6%	-5.7%
45-54	2,695	12.8%	3,267	14.9%	21.2%
55-64	1,434	6.8%	2,259	10.3%	57.5%
65-74	958	4.5%	1,027	4.7%	7.2%
75+	1,038	4.9%	815	3.7%	-21.5%
Totals	21,103	100.0%	21,936	100.0%	-

Source: 2000 and 2010 U.S. Census

Household Characteristics

A household is defined by the U.S. Census Bureau as those persons who occupy a single room or group of rooms constituting a housing unit; however, these persons may or may not be related. As a subset of households, a family is identified as a group of persons including a householder and one or more persons related by blood, marriage or adoption, all living in the same household. In 2013, there were 7,350 households in North Plainfield, with an average of 2.94 persons per household and an average of 3.40 persons per family. Approximately 71 percent of the households are comprised of married

couples with or without children. Almost 29 percent of the North Plainfield households are non-family households, which includes individuals.

Income Characteristics

Persons residing in North Plainfield have, on average, lower incomes than that of Somerset County. Annual median income for Borough households in 2013 was \$64,503, whereas annual median income for households County-wide was \$99,020. Table 13, Household and Family Income by Income Brackets for North Plainfield and Somerset County, 2013, further illustrates these findings by noting the number of households in each of the income categories.

Table 13. Household and Family Income by Income Brackets for North Plainfield and Somerset County, 2013

	North Plainfield		Somerset County	
	Households	Percent	Households	Percent
Less than \$10,000	221	3.0%	2,888	2.5%
\$10,000 - \$14,999	206	2.8%	2,311	2.0%
\$15,000 - \$24,999	654	8.9%	5,545	4.8%
\$25,000 - \$34,999	632	8.6%	6,816	5.9%
\$35,000 - \$49,999	1,000	13.6%	9,474	8.2%
\$50,000 - \$74,999	1,551	21.1%	15,943	13.8%
\$75,000 - \$99,999	1,176	16.0%	15,481	13.4%
\$100,000 - \$149,999	1,147	15.6%	22,760	19.7%
\$150,000 - \$199,999	456	6.2%	14,210	12.3%
\$200,000 or more	309	4.2%	20,102	17.4%
Total	7,352	100.0%	115,531	100.0%
Median Income	\$64,503		\$99,020	

Source: American Community Survey, 2009-2013

Although the Census data does not provide a breakdown of household income by household size, COAH's 2013 Regional Income Limits for Hunterdon/Middlesex/Somerset County (Region 3) for a household of one person was \$73,500. As such, the moderate-income threshold for a household of one person was \$58,800 (i.e., 80 percent of \$73,500). In attempting to approximate the number of low- and moderate-income households in the Borough, using a household size of one is a conservative approach that represents just a minimum threshold. Table 13 above shows that the percentage of households in the Borough for which income was below this minimum threshold was approximately 37 percent.

The percentage of persons and households below the poverty level, as defined by the 2013 American Community Survey, equates to 11 percent of all North Plainfield residents. This is higher than that of the County as a whole, wherein 5 percent of County residents were living below the poverty level in 2013.

Employment Characteristics

Table 14, Employment Status, 2013, indicates the number of Borough residents 16 years and over who are in the labor force, the type of labor force (i.e., civilian or armed forces) and employment status. Approximately 78 percent of North Plainfield residents 16 and over are in the in the labor force, and among those in the labor force, all are in the civilian labor force. Of the residents in the civilian labor force, approximately 92 percent are employed and approximately 8 percent are unemployed.

Table 14. Employment Status, 2013

	Number in North Plainfield	Percent in North Plainfield
Population 16 years and over	16,995	-
In Labor Force	13,268	78.1%
Civilian Labor Force	13,268	78.1%
<i>Employed</i>	12,183	91.8%
<i>Unemployed</i>	1,085	8.1%
Armed Forces	0	0.0%
Not in Labor Force	3,727	21.9%

Source: American Community Survey, 2009-2013

Table 15, Employment by Occupation, North Plainfield, 2013, identifies the occupations of employed persons in the Borough. While North Plainfield residents work in a variety of industries, 27 percent of employed residents work in Management, Business, Science, and Arts-related occupations; 26 percent work in Sales and Office-related occupations; and 20 percent work in Service-related occupations.

Table 15. Employment by Occupation, North Plainfield, 2013

Sector Jobs	Number	Percent
Management, Business, Science, and Arts Occupations	3,251	26.7%
Service	2,412	19.8%
Sales and Office	3,223	26.5%
Natural Resources, Construction, and Maintenance	912	7.5%
Production, Transportation, and Moving	2,385	19.6%
Total	12,183	100.0%

Source: American Community Survey, 2009-2013

Table 16, Distribution of Employment by Industry, Borough Residents, 2013, shows the distribution of employment by industry for employed North Plainfield residents. The four industries to capture the largest segments of the population were the Educational, Health, and Social Services sector at 21 percent; the Manufacturing sector at 15 percent; the Retail Trade sector at 13 percent; and the Professional, Scientific, Management, Administrative, and Waste Management Services sector at 10 percent.

Table 16. Distribution of Employment by Industry, Borough Residents, 2013

Sector Jobs	Number	Percent
Agriculture, Forestry, Fishing and Hunting, and Mining	38	0.3%
Construction	575	4.7%
Manufacturing	1,786	14.7%
Wholesale Trade	301	2.5%
Retail Trade	1,538	12.6%
Transportation and Warehousing, and Utilities	1,008	8.3%
Information	451	3.7%
Financing, Insurance, Real Estate, Renting, and Leasing	695	5.7%
Professional, Scientific, Management, Administrative, and Waste Management Services	1,202	9.9%
Educational, Health and Social Services	2,571	21.1%
Arts, Entertainment, Recreation, Accommodation and Food Services	986	8.1%
Public Administration	684	5.6%
Other	348	2.9%
Total	12,183	100.0%

Source: American Community Survey, 2009-2013

Of employed Borough residents, approximately 81 percent are private wage and salary workers; 14 percent are government workers; and 4 percent are self-employed. See Table 17, Distribution by Class of Worker, 2013, for additional details.

Table 17. Distribution by Class of Worker in North Plainfield, 2013

	Number	Percent
Private Wage and Salary Workers	9,898	81.2%
Government Workers	1,737	14.3%
Self-employed in own not incorporated business workers	531	4.4%
Unpaid family workers	17	0.1%
Total	12,183	100.0%

Source: American Community Survey, 2009-2013

The New Jersey Department of Labor and Statistics tracks covered employment throughout the State. See Table 18, Public Sector Employment in North Plainfield by Industry Sector, 2002, 2007, 2011, for additional details. According to the New Jersey Department of Labor and Statistics, there were 2,686 private sector jobs in North Plainfield in 2011. Educational Services; Retail Trade; and Health Care and Social Assistance were the largest sectors of in-town employment, with 668, 596, and 298 jobs,

respectively. Table 18 also shows the number of employees by sector in North Plainfield in 2002 and 2007. The largest decreases in local employment between 2002 and 2011 were in the Retail Trade (177 jobs) and Construction (89 jobs) sectors, which experienced decreases of 23 percent and 42 percent, respectively. The sector that saw the largest local increase in employment between 2002 and 2011 was the Educational Services sector, with an increase of 143 jobs (or 27 percent).

Table 18. Public Sector Employment in North Plainfield by Industry Sector, 2002, 2007, 2011

	2002		2007		2011	
	COUNT	SHARE	COUNT	SHARE	COUNT	SHARE
PRIVATE SECTOR JOBS						
Agriculture, Forestry, Fishing and Hunting, and Mining	2	0.1%	0	0.0%	0	0.0%
Mining, Quarrying, and Oil and Gas Extraction	0	0.0%	0	0.0%	0	0.0%
Utilities	2	0.1%	0	0.0%	0	0.0%
Construction	210	7.0%	167	5.0%	121	4.5%
Manufacturing	40	1.3%	13	0.4%	46	1.7%
Wholesale Trade	72	2.4%	45	1.4%	29	1.1%
Retail Trade	773	25.6%	928	27.9%	596	22.2%
Transportation and Warehousing	23	0.8%	48	1.4%	20	0.7%
Information	7	0.2%	5	0.2%	12	0.4%
Finance and Insurance	109	3.6%	118	3.6%	77	2.9%
Real Estate and Rental and Leasing	60	2.0%	61	1.8%	59	2.2%
Professional, Scientific and Technical Services	152	5.0%	114	3.4%	107	4.0%
Management of Companies and Enterprises Administration & Support	0	0.0%	0	0.0%	4	0.1%
Waste Management and Remediation	86	2.8%	148	4.5%	93	3.5%
Educational Services	525	17.4%	526	15.8%	668	24.9%
Health Care and Social Assistance	350	11.6%	500	15.1%	298	11.1%
Arts, Entertainment, and Recreation	1	0.0%	3	0.1%	40	1.5%
Accommodation and Food Services	175	5.8%	156	4.7%	153	5.7%
Other Services (Excluding Public Administration)	238	7.9%	152	4.6%	153	5.7%
Public Administration	193	6.4%	338	10.2%	210	7.8%
TOTAL PRIVATE SECTOR	3,018	100.0%	3,322	100.0%	2,686	100.0%

Source: State of New Jersey Department of Labor and Workforce Development Local Employment Dynamics; <http://onthemap.ces.census.gov/>

Growth Trends and Projections

Residential Trends and Projections

According to the New Jersey Construction Reporter, between 2004 and 2014, North Plainfield issued 10 residential certificates of occupancy: nine were for one- and two-family dwelling units and one was for a multifamily dwelling unit. See Table 19, Residential Certificates of Occupancy, 2004-2014, for additional details.

Table 19. Residential Certificates of Occupancy, 2004-2014

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
1 & 2 Family	1	1	0	0	0	0	2	5	0	0	0	9
Multifamily	1	0	0	0	0	0	0	0	0	0	0	1
Total	2	1	0	0	0	0	2	5	0	0	0	10

Source: New Jersey Construction Reporter

North Plainfield is essentially a fully developed community, with environmental constraints on the remaining undeveloped tracts zoned for residential use. As evidenced by Table 19, the Borough has had on average only one new dwelling unit constructed each year over the past decade. Given the lack of vacant, developable land in the municipality, it is not anticipated there will be much new housing development in coming years other than redevelopment of existing developed properties. One such property is described in Chapter V, the Villa Maria site.

Non-Residential Trends and Projections

According to the New Jersey Construction Reporter, between 2003 and 2013, North Plainfield issued certificates of occupancy for a total of ±274,035 square feet of non-residential building space. See Table 20, Non-Residential Certificates of Occupancy, 2003-2013, for additional details. The majority of the non-residential growth can be attributed to:

- A total of 262,250 square feet of multifamily/dormitory space in 2003 and 2004; and
- A total of 11,785 square feet of office space in 2010, 2012 and 2013.

Table 20. Non-Residential Certificates of Occupancy, 2003-2013

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Office	0	0	0	0	0	0	0	4,297	0	3,648	3,840	11,785
Retail	0	0	0	0	0	0	0	0	0	0	0	0
A-1	0	0	0	0	0	0	0	0	0	0	0	0
A-2	0	0	0	0	0	0	0	0	0	0	0	0
A-3	0	0	0	0	0	0	0	0	0	0	0	0
A-4	0	0	0	0	0	0	0	0	0	0	0	0
A-5	0	0	0	0	0	0	0	0	0	0	0	0
Multifamily/ Dormitories	261,000	1,250	0	0	0	0	0	0	0	0	0	262,250
Hotel/ Motel	0	0	0	0	0	0	0	0	0	0	0	0
Education	0	0	0	0	0	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0	0	0	0	0	0
Hazardous	0	0	0	0	0	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	0	0	0	0	0	0	0
Storage	0	0	0	0	0	0	0	0	0	0	0	0
Signs, Fences, Utility & Misc.	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	261,000	1,250	0	0	0	0	0	4,297	0	3,648	3,840	274,035

Source: New Jersey Construction Reporter

Capacity for Growth

North Plainfield is essentially fully developed. A map is attached showing the existing land use categories as identified in the 2014 North Plainfield Master Plan, as well as environmental constraints as determined by the New Jersey Department of Environmental Protection. While there are a number of parcels identified as vacant in the 2014 Master Plan, most of these are also encumbered by flood hazard areas, water bodies and/or wetlands. This map does not even factor in required buffer areas for these environmental features, which would further restrict development potential.

As this map shows, there is only one sizable tract (Villa Maria, discussed in the following chapter) and various smaller parcels that are identified as vacant and that have development potential. A number of these parcels are isolated lots in residential neighborhoods that are too small for affordable housing development, while others are irregularly shaped or otherwise constrained. Therefore, any existing vacant or potentially redeveloped parcels have been taken into account in this document, with affordable housing proposed for the one site that can realistically accommodate a significant amount of development.

V. Fair Share Plan

North Plainfield's Affordable Housing Efforts

The Borough of North Plainfield has made good faith efforts to address its affordable housing obligations. In 2008, the Planning Board adopted a housing element and fair share plan and the governing body petitioned COAH for substantive certification of the plan. The 2008 housing plan addressed North Plainfield's obligations as they were determined at that time, while recognizing the Borough has limited resources to spend on the largest part of its obligation, the rehabilitation component. For example, North Plainfield has a development fee ordinance intended to bolster the Borough's affordable housing trust fund, but with minimal development activity, the trust fund has not received any development fees.

However, affordable housing units have been created and rehabilitated in North Plainfield in recent years, and the 2008 housing plan and this fair share plan identify realistic mechanisms for new affordable housing construction and rehabilitation projects.

Satisfaction of the Rehabilitation Obligation

A municipality's rehabilitation obligation is based upon the estimated amount of substandard housing occupied by low- and moderate-income households. In 2008, COAH determined the Borough's rehabilitation obligation to be 282 units. This figure has not been definitively calculated for 2015. Whether the obligation is higher or even somewhat lower, North Plainfield is requesting a waiver from addressing its full rehabilitation obligation.

North Plainfield receives State aid pursuant to P.L. 1978 (N.J.S.A. 52:27d-178 et seq.). COAH's Substantive Rules have in the past allowed such municipalities to:

“...seek a waiver from addressing its entire rehabilitation component in one six year period of substantive certification. A municipality seeking such a waiver shall demonstrate that it cannot rehabilitate the entire rehabilitation component in six years and/or that an extraordinary hardship exists, related to addressing the entire rehabilitation component in six years.”
(N.J.A.C. 5:93-5.2(m))

North Plainfield has a significant rehabilitation share, but limited resources. As a minimum of \$10,000 per unit is required to obtain credit for rehabilitation, and the cost can often be much higher than the minimum, a municipal expenditure of over \$2.5 million will be required to address North Plainfield's obligation as of 2008, unless other funding sources can be utilized. The Borough receives State aid and does not have the financial resources of other communities, most of which have much lower rehabilitation obligations. Further, North Plainfield is essentially fully developed and thus does not expect to collect anywhere near the amount of affordable housing development fees to fund a rehabilitation program that addresses this obligation. Therefore a waiver is warranted for North Plainfield from addressing its full obligation.

It should be noted, however, a number of substandard dwelling units in North Plainfield have been rehabilitated in the past few years.

Since 1988 a non-profit housing corporation, "Friends of the Carpenter," has administered a rehabilitation program for substandard dwelling units in North Plainfield occupied by low- and moderate-income households. This program is funded by the Borough of North Plainfield and provides interest-free loans to homeowners that meet income guidelines. The loan principal is forgiven at a rate of 10 percent a year, and is fully forgiven at the end of 10 years. The minimum loan amount through this program is \$10,000. The following is a list of properties included in this program and the year the loan was made:

1. 37 Duer Street, 1988
2. 38 Duer Street, 1988
3. 151 Manning Avenue, 1988
4. 214 Brook Avenue, 1989
5. 41 Harmony Street, 1989
6. 76 Summit Avenue, 1989
7. 223 Delacy Drive, 1991
8. 26 Stone Street, 1993
9. 205 Willow Avenue Ext., 1995
10. 98 Fairview Avenue, 1997
11. 468 Greenbrook Road, 1997
12. 369 West End Avenue, 1997
13. 36 Harmony Street, 1999
14. 31 Myrtle Avenue, 1999
15. 63 Myrtle Avenue, 1999
16. 208 Grove Street, 2000
17. 34 Rockview Avenue, 2000
18. 166 Sandford Avenue, 2014

Friends of the Carpenter has rehabilitated a number of other units throughout North Plainfield as well, but as the amount spent was less than \$10,000 per unit, credits are not being sought for these additional units.

In addition, North Plainfield participates in the Somerset County Community Development Block Grant Program, which has rehabilitated a number of housing units in recent years. These are as follows:

1. 28 Stone Street, 2001
2. 162 Netherwood Avenue, 2001
3. 457 Catalpa Avenue, 2003
4. 590 Mountainview Avenue, 2003
5. 153 Sycamore Avenue, 2003

6. 147 Delacy Avenue, 2005
7. 284 Leonard Place, 2005
8. 255 Carol Road, 2005
9. 512 Rockview Avenue, 2005

Therefore, the Borough is entitled to **27 credits** for rehabilitated dwelling units. North Plainfield will continue to promote rehabilitation of existing units through the above programs, which will be funded through its affordable housing trust fund and other sources.

Satisfaction of the Prior Round Obligation

The Prior Round Obligation for North Plainfield has not yet been definitively determined. The Borough has entered into a shared services agreement with over 200 municipalities to retain an expert (Econsult Solutions) to determine their affordable housing obligations, but these figures are not expected to be available before the end of December 2015. In the interim, based on review of development trends and potential obligation numbers, it is reasonable to assume North Plainfield has a Prior Round Obligation (i.e. for the period 1987 to 2015) of 0 units.

The Borough of North Plainfield is eligible for **29 credits** towards the Prior Round Obligation, plus potential bonus credits (which cannot be calculated until definitive Prior Round and Third Round Obligations are set). These projects are detailed below and summarized in Table 21. Any credits above the Prior Round Obligation are considered surplus credits that can be applied to the Borough's Third Round Obligation.

Group Homes

There are six existing group homes with a total of 23 bedrooms in North Plainfield:

1. **The Arc of Somerset County – Block 13, Lot 5:** This four-bedroom group home is located on Mobus Avenue and opened in 1987.
2. **Community Options, Inc. – Block 7, Lot 11:** This four-bedroom group home is located on Jefferies Place and opened in 1997.
3. **Devereux Foundation – Block 156.01, Lot 11:** This three-bedroom group home is located on Maple Terrace and opened in 1999.
4. **Community Options, Inc. – Block 147, Lot 3:** This four-bedroom group home is located on Myrtle Avenue and opened in 1997.
5. **Everas Community Services, Inc. – Block 154.01, Lot 2:** This four-bedroom group home is located on West End Avenue and opened in 2014.
6. **Keystone Community Living, Inc. – Block 194, Lot 17:** This four-bedroom group home is located on Lawrence Avenue and opened in 2012.

N.J.A.C. 5:93-1.3 defines a group home for the developmentally disabled as licensed and/or regulated by the New Jersey Department of Human Services as an “alternative living arrangement.” Per N.J.A.C. 5:93-5.8 alternative living arrangements may be used to address a municipal housing obligation. The unit of credit is the bedroom and each unit may be used to address a municipality’s rental obligation.

Per N.J.A.C. 5:97-3.5, units created and occupied after December 15, 1986 may receive rental bonuses for the Prior Round Obligation. Thus, the above homes may be eligible for rental bonuses.

Other Affordable Units

Friends of the Carpenter has created new affordable housing by purchasing, rehabilitating and reselling dwellings to low- and moderate-income households. The locations of these units are as follows:

1. 163 Duer Street
2. 118 Grove Street
3. 212 Grove Street
4. 55 Mountain Avenue
5. 85 Mountain Avenue
6. 645 Townsend Place

Table 21. Entitlement to Prior Round Affordable Housing Credits for Constructed Projects

CREDITS APPLIED TOWARDS PRIOR ROUND OBLIGATION				
<i>Affordable Development</i>	<i>Type</i>	<i>Units</i>	<i>Potential Bonus Credits</i>	<i>Total Credits Plus Bonuses</i>
Group Homes	Alternative Living Arrangements	23 bedrooms	yes	23 + to be determined
Friends of the Carpenter	New Affordable Units	6 units	yes	6 + to be determined

Satisfaction of the Third Round Obligation

The Third Round Obligation for North Plainfield has not yet been definitively determined. As noted, the Borough has entered into a shared services agreement with over 200 municipalities to retain an expert (Econsult Solutions) to determine their affordable housing obligations, but these figures are not expected to be available before the end of December 2015. In the interim, based on review of development trends and the lack of available vacant or redevelopable land in North Plainfield as documented in the attached map, it is clear that regardless of what the regional obligation is determined to be, the Borough has limited capacity to accommodate new housing development. Thus its Third Round Obligation should be set based on capacity.

There is only one sizable tract (Villa Maria, discussed below) and various smaller parcels that are identified as vacant and that have development potential. A number of these parcels are isolated lots in residential neighborhoods that are too small for affordable housing development while others are irregularly shaped or otherwise constrained. Given these constraints, it is assumed approximately 16 acres are reasonably redevelopable for inclusionary housing. With an assumed density of 10 units per acre, 160 units of housing could be built, with a 20 percent setaside of affordable units. Therefore, North Plainfield has a Third Round Obligation (i.e. for the period 2015 to 2025) of 32 units.

The Borough of North Plainfield is eligible for **37 credits**, plus potential bonus credits and surplus credits from the Prior Round. These projects are detailed below and summarized in Table 22.

Future Projects

1. **Villa Maria Site – Grove Street, Somerset Street and Interhaven Avenue - Block 110, Lots 2.02 through 2.14:** The North Plainfield Council created an R-9 Residential zoning district to require the provision of low- and moderate-income housing units as part of any redevelopment of the only sizable tract in North Plainfield that is likely to be redeveloped: the former Villa Maria property. This 14.32 acre site is located in the north-central portion of the Borough of North Plainfield between Grove Street, Somerset Street and Interhaven Avenue. The property is currently developed with multiple vacant buildings and related improvements. It was previously used as a nursing home and rehabilitation facility, which closed in 2002. The oldest buildings on the Villa Maria site were originally constructed in the Nineteenth Century as part of a tuberculosis sanitarium. The site is in an area with established infrastructure and is readily available for redevelopment.

The R-9 zone’s regulations include requirements for the creation of both family and age-restricted low- and moderate-income housing units. These requirements allow a total of 160 age-restricted units in the R-9 zone, including nine affordable units. In addition, 15 non-age-restricted low- and moderate-income units are required to be provided, for a total of 175 units, including 24 affordable units. Due to factors, including but not limited to the recent Great Recession, no new construction has yet taken place on this property. Depending on North Plainfield’s Third Round Obligation the Borough may be eligible for rental bonuses at this project.

2. **Extension of Controls – Chatham Row:** Friends of the Carpenter constructed 13 affordable housing units in the mid-1980s in a project known as Chatham Row. The 30-year controls on affordability for these units will be expiring in the coming years. This Fair Share Plan proposes extensions of the controls on affordability for those units, so that they may remain available to low- and moderate-income households.
3. **Inclusionary Zoning Requirements:** While there are no other large vacant parcels available for redevelopment at this time, it is possible that existing developed areas may be proposed for redevelopment. Article IXA of the Borough’s Revised General Ordinances, “Growth-Share Affordable Housing Obligation,” requires a set-aside of affordable units for new housing developments. This ordinance was adopted in response to the “growth share” methodology in COAH’s 2008 Substantive Rules and thus will need to be amended. The revised ordinance should require any housing development of five units or more to produce low- and moderate-income housing on-site or elsewhere in the Borough or pay a fee in lieu of providing affordable units.

Table 22. Entitlement to Third Round Affordable Housing Credits for Approved/Planned Projects

CREDITS APPLIED TOWARDS THIRD ROUND OBLIGATION				
<i>Affordable Development</i>	<i>Type</i>	<i>Units</i>	<i>Anticipated Bonus Credits</i>	<i>Total Credits Plus Bonuses</i>
Villa Maria Site	Inclusionary Development	15 family units, 9 age-restricted units	yes	24 + to be determined
Chatham Row	Extension of Controls	13 units	none	13
Inclusionary Housing Ordinance	Inclusionary Zoning	unknown	yes	unknown
Surplus credits	Prior Round Credits Beyond Obligation	to be determined	none	unknown

Spending Plan

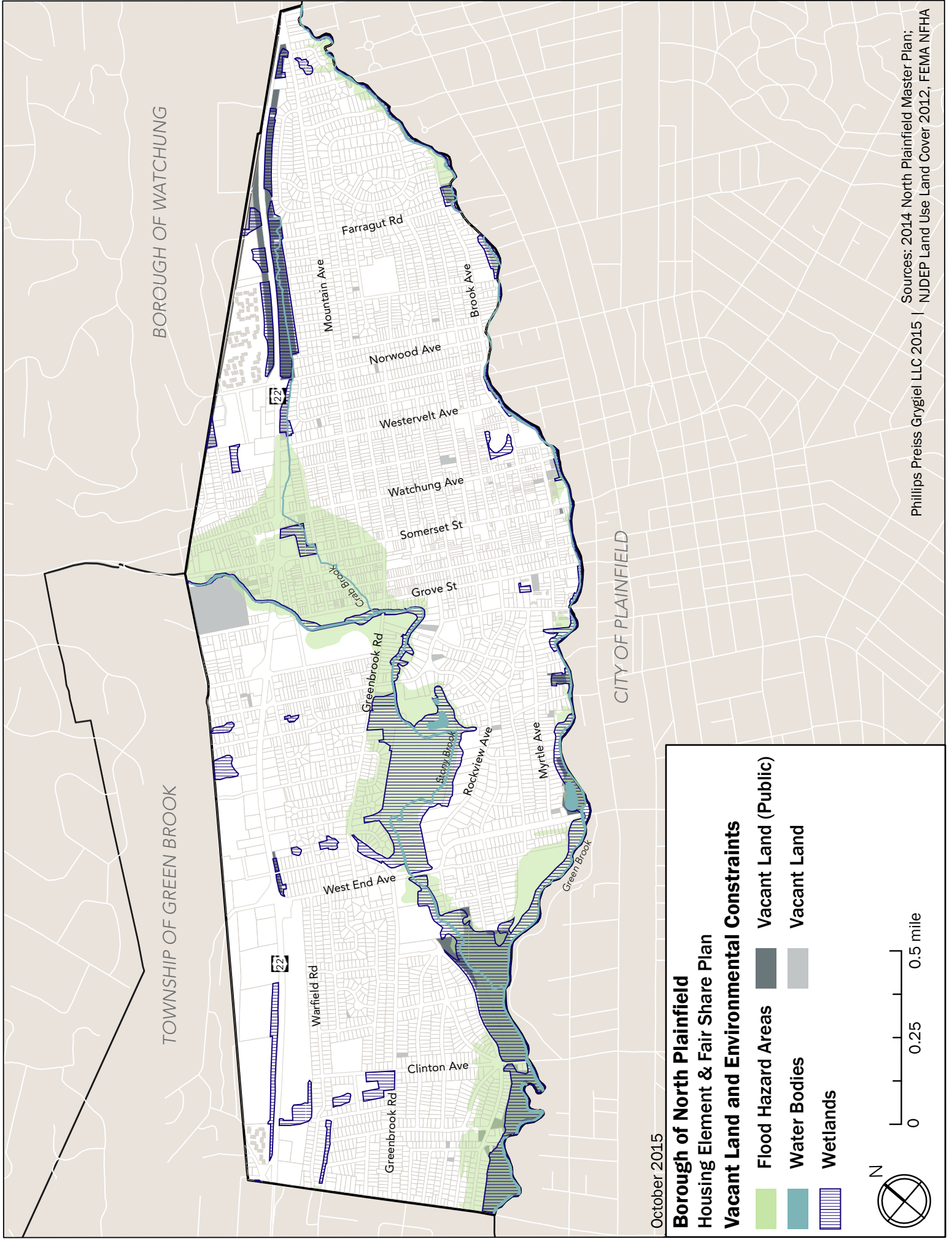
The Borough of North Plainfield has a development fee ordinance which is intended to provide a dedicated revenue source for affordable housing. All development fees, payments in lieu of constructing affordable units on site, funds from the sale of units with extinguished controls, and interest generated by the fees are deposited in a separate interest-bearing affordable housing trust fund for the purposes of affordable housing. These funds shall be spent for purposes including a housing rehabilitation program, costs associated with affordable housing construction, providing affordability assistance to low-income households and professional services related to the planning for affordable housing.

Summary

This Fair Share Plan provides realistic opportunities for the provision of new affordable housing units and rehabilitation of existing substandard units, in light of the Borough’s limited resources – both in monetary terms and with regard to the limited amount of vacant land in the municipality. Table 23 summarizes the affordable housing mechanisms that address North Plainfield’s Prior Round and Third Round obligations.

Table 23. The Borough of North Plainfield Entitlement to Affordable Housing Credits

CREDITS APPLIED TOWARDS PRIOR ROUND OBLIGATION				
<i>Affordable Development</i>	<i>Type</i>	<i>Units</i>	<i>Potential Bonus Credits</i>	<i>Total Credits Plus Bonuses</i>
Group Homes	Alternative Living Arrangements	23 bedrooms	yes	23 + to be determined
Friends of the Carpenter	New Affordable Units	6 units	yes	6 + to be determined
CREDITS APPLIED TOWARDS THIRD ROUND OBLIGATION				
<i>Affordable Development</i>	<i>Type</i>	<i>Units</i>	<i>Anticipated Bonus Credits</i>	<i>Total Credits Plus Bonuses</i>
Villa Maria Site	Inclusionary Development	15 family units, 9 age-restricted units	yes	24 + to be determined
Chatham Row	Extension of Controls	13 units	none	13
Inclusionary Housing Ordinance	Inclusionary Zoning	unknown	yes	unknown
Surplus credits	Prior Round Credits Beyond Obligation	to be determined	none	unknown



BOROUGH OF WATCHUNG

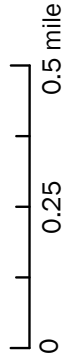
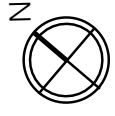
TOWNSHIP OF GREEN BROOK

CITY OF PLAINFIELD

October 2015

**Borough of North Plainfield
Housing Element & Fair Share Plan
Vacant Land and Environmental Constraints**

- Flood Hazard Areas
- Water Bodies
- Wetlands
- Vacant Land (Public)
- Vacant Land



Sources: 2014 North Plainfield Master Plan;
Phillips Preiss Grygiel LLC 2015 | NJDEP Land Use Land Cover 2012, FEMA NFHA