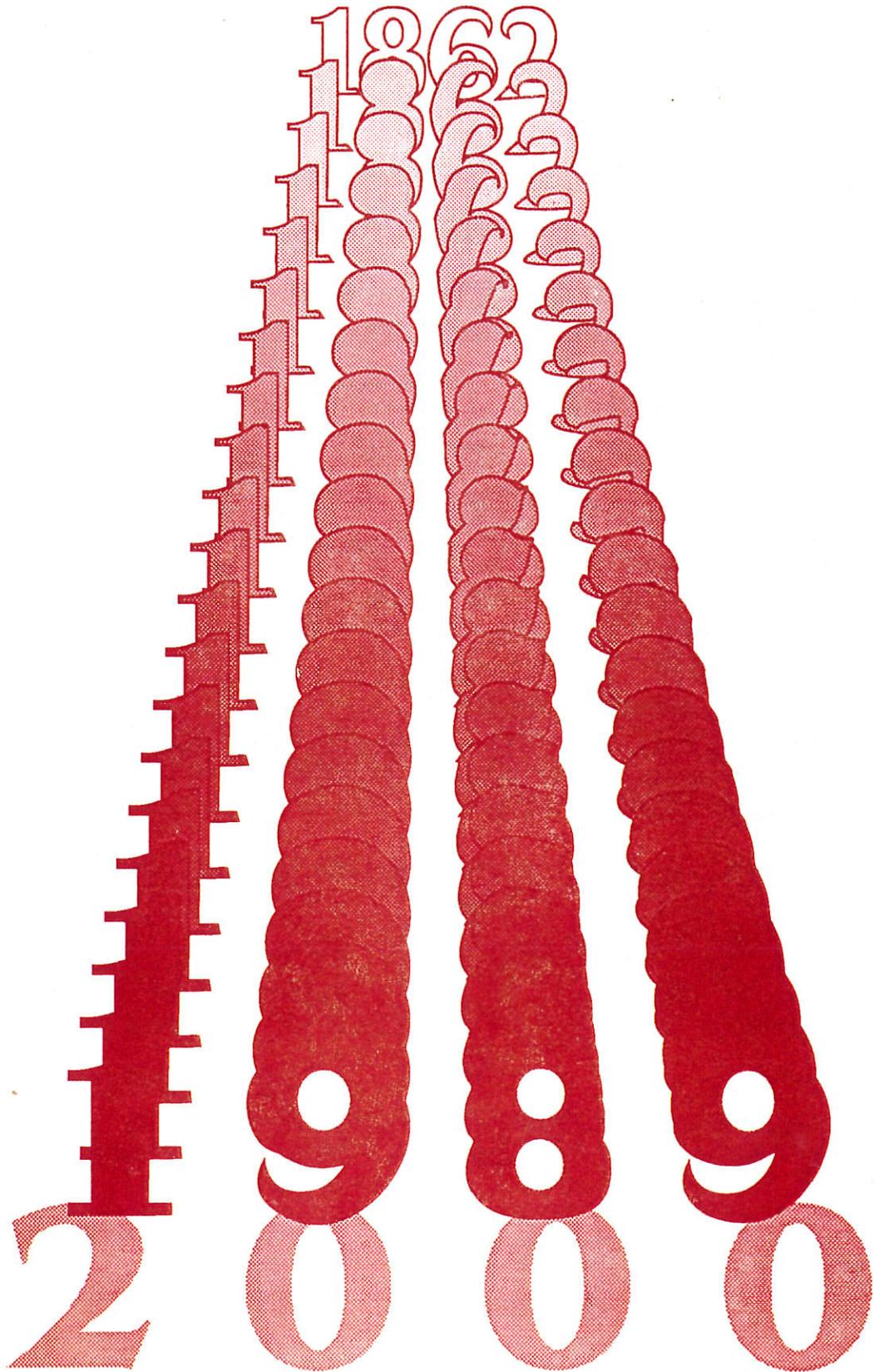


# *1989 Master Plan*

*Township of West Orange, New Jersey*



**MASTER PLAN**  
**TOWNSHIP OF WEST ORANGE**  
**ESSEX COUNTY, NEW JERSEY**

**ADOPTED BY THE WEST ORANGE PLANNING BOARD**  
**MAY 10, 1989**

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with New Jersey Law.**

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TABLE OF CONTENTS

PAGE NO.

INTRODUCTION . . . . . 1

REGIONAL SETTING . . . . . 3

HISTORICAL BACKGROUND . . . . . 5

POPULATION . . . . . 9

NATURAL RESOURCES . . . . . 16

EXISTING LAND USE . . . . . 27

OBJECTIVES, PRINCIPLES, ASSUMPTIONS, POLICIES AND  
STANDARDS . . . . . 35

CIRCULATION PLAN ELEMENT . . . . . 39

COMMUNITY FACILITIES, UTILITIES, AND RECYCLING ELEMENT . . . 45

ECONOMIC PLAN ELEMENT . . . . . 57

HISTORIC PRESERVATION PLAN ELEMENT . . . . . 62

HOUSING PLAN ELEMENT AND FAIR SHARE PLAN . . . . . 65

RECREATION AND CONSERVATION PLAN ELEMENT . . . . . 78

LAND USE PLAN ELEMENT . . . . . 83

STATEMENT OF PLANNING RELATIONSHIPS . . . . . 87

APPENDIX

TABLES

ESSEX COUNTY HISTORIC SITES INVENTORY - WEST ORANGE

## LIST OF TABLES

### Table No.

1. Historical Population Trends 1900-1980
2. Natural Population Changes 1960-1986
3. Nature of Population Change 1960-1986
4. 1980 Population by Race
5. 1980 Educational Level
6. 1980 Relative Household Income
7. 1980 Relative Occupation Distribution
8. 1987 Annual Unemployment Rate
9. Population Estimates for West Orange, Essex County and New Jersey 1981-1986
10. Population Projections 1993 - West Orange & Essex County
11. Common Birds of West Orange
12. Mammals of West Orange
13. Threatened and Endangered Species of West Orange
14. Existing Land Use 1988
15. West Orange Zone Districts 1988
16. Prospect Avenue Corridor Recommended Improvements
17. West Orange Public School Enrollment 1962-1987
18. West Orange Public School Facilities
19. West Orange Public School System Capacity by Grade Level
20. West Orange Public School System. Projected Enrollment by Grade Level Organization
21. 1987 Business Summary for West Orange
22. Employment Growth for West Orange, Essex County, and New Jersey - 1976-1986
23. Private Sector Covered Employment 1976-1986
24. Private Sector Employment Growth by Job Category 1970-1987
25. Private Sector Employment Growth Essex County 1970 & 1987
26. West Orange Employment Projections to 2000
27. Commuting Patterns - West Orange & Essex County
28. Means of Transportation to Work - West Orange & Essex County
29. Economic Indicators - West Orange, Essex County, and New Jersey 1980
30. Age of Housing Units - West Orange
31. Building and Demolition Permits - West Orange 1970-1987
32. Condition of Housing - West Orange 1980
33. Housing Stock Projections - West Orange 2000
34. Population Profile - West Orange 1980
35. Household Profile - West Orange 1980
36. Income Characteristics and Projections - West Orange 1979-1993
37. Vacant Land Inventory
38. Low and Moderate Income Limits for Essex County 1988
39. Municipal Recreation Facilities - West Orange
40. Standards for Open Space and Recreation Facilities
41. Occupational Distribution 1970-1980 West Orange
42. 1980 Regional Occupational Distribution, West Orange & Essex County
43. Essex County Historic Sites Inventory - West Orange

## LIST OF FIGURES

<u>Figure No.</u>		<u>Page No.</u>
1.	Regional Location Map	4
2.	Relative Age Distribution 1980	12
3.	Relative Age Distribution 1987	12
4.	Steep Slopes	20
5.	Streams and Woodlands	21
6.	Areas of 100 Year Flood	22
7.	Freshwater Wetlands	25
8.	Existing Land Use 1988	28
9.	Existing Zoning Map 1988	34
10.	Public Transportation Routes	44
11.	Water Facilities Map	52
12.	Employment Projections	59
13.	Housing Projections	67
14.	Undeveloped Lands	77
15.	Master Plan Map	90
16.	Essex County Historic Sites Inventory - West Orange	150

## INTRODUCTION

In accordance with the New Jersey Municipal Land Use Law (N.J.S.A. 40:55D-28 et seq.), this Master Plan revises the West Orange Plan adopted in 1966 and amended in 1978. The revision updates technical information and provides the required elements to serve as the continued foundation of the Township's planning process. Its policies, derived from the purposes of the Land Use Law, will be the basis for local land use controls that protect the public health, safety, and general welfare.

West Orange has benefited from a comprehensive planning program that dates back to July 1920 when the Town Planning Commission was created. By August 1930, the Commission was replaced by the Town Planning Board. The Township's first Master Plan was adopted in January 1953. In 1966, a new Master Plan, prepared by Robert Catlin and Associates, was adopted.

In August 1975, New Jersey enacted the Municipal Land Use Law which is today the basis for West Orange's authority to plan for and control development. In response to the new law, West Orange amended its planning and land development regulations to incorporate the administrative and procedural provisions of the law. It also initiated the preparation of an amendment to update the 1966 Master Plan. The amendment was adopted in 1978 by the Planning Board.

The Municipal Land Use law requires that a municipality reexamine its Plan and development regulations at least once every six years. Accordingly, the West Orange Planning Board prepared Reexamination Reports in 1982 and again in 1988.

To comply with the Fair Housing Act of 1985 and the New Jersey Statewide Mandatory Source Separation and Recycling Act of 1987, the Township in July 1988, amended its Master Plan to include a Housing Plan Element and Fair Share Plan and a Recycling Plan Element.

This revision to the Master Plans builds upon previous planning work and emphasizes the need to manage further development to ensure that the community's character is maintained and that the quality of life available to present and future residents is preserved. It takes into consideration projected growth trends and policy changes at the County and State level which impact upon local planning and development.

The mapping of natural features that constrain development such as freshwater wetlands, flood hazard areas, woodlands, and steep slopes has been updated, and techniques to preserve open space and sensitive lands have been recommended. The Housing Element has been incorporated into the text and an Historic Preservation Element has been included to recognize the Township's heritage and identify architectural assets. The Land Use Element of the Plan draws upon a current field survey of land use and makes recommendations to guide the development of the Township's remaining land supply. The advice of public safety officials and municipal agencies has been sought to identify municipal needs for police, fire, first aid, recreation, and library services. The need for and status of drainage, sewer, water and circulation improvements has been reviewed with the Township's Department of Public Works, with Essex County, and with the responsible utilities.

The updated Master Plan is a comprehensive guide for continued growth management and land use regulation within the Township of West Orange.

## REGIONAL SETTING

West Orange is situated in the central portion of Essex County and contains approximately 12.15 square miles or 7,776 acres of land. It is west of New York City within the New York Metropolitan Area, and easily accessible to the highway and rail network which serves the northern New Jersey - New York Metropolitan complex.

West Orange's proximity to Newark and New York as well as its attractive location in the Watchung Mountains has played a major role in the Township's development. The first inhabitants were mostly farmers. Because of the Watchung's steep grades, they had to be almost entirely self-sustaining. As the region grew, West Orange was able to capitalize on its proximity to the urban centers of Newark and New York City and access to inexpensive rail transportation. These and other factors contributed to the emergence of a manufacturing economy in the early 1800's which continued into the early 20th Century. Today, manufacturing in West Orange has been replaced by service, financial, and retail enterprises.

West Orange is crossed east-west by Interstate Route 280 with interchanges at Northfield Avenue, Prospect Avenue, and Pleasant Valley Way. Route 280 provides travelers with easy access to the Garden State Parkway and the New Jersey Turnpike.

The Township borders on nine (9) developed suburban municipalities. These include: Montclair, Verona, Essex Falls, Roseland, Livingston, Millburn, Maplewood, South Orange and Orange.



## HISTORICAL BACKGROUND

### Early Settlement

Just two years after the founding of Newark in 1664, Robert Treat and John Gregory, two early settlers, purchased the land which is now West Orange from the Lenni Lenape Indians. Soon after, lots were put up for sale and families began to move into the area. By 1700, the Williams, Ball, Harrison, Lutman, Crane and Walls families had migrated from Connecticut and settled the area. Two small hamlets, Williamstown and Freemantown, were named for the original settlers. Williamstown, later known as Tory Corner, was located in the vicinity of Washington and Main Streets. The Williams family had sided with the British during the American Revolution-hence the name Tory Corner. During the same period, Eagle Rock Avenue, originally an old Indian trail, was known as Swine Field Road. The residents of Williamstown (Tory Corner) used this route to take their swine to summer pastures. To the south of Williamstown, was the settlement of Freemantown located at the intersection of Valley Road (now Main Street) and Freeman Street.

Steep grades encountered at ridges presented a natural barrier to early travel and separated the rich farming land to the west from the growing communities to the east. Consequently, early inhabitants needed to be self sustaining, making farming and the processing of farming products the principal activities. As early as 1700, sandstone and later trap rock brought quarry developers into the area. The Orange Quarry Company, located near the top of the first mountain and Eagle Rock Avenue, was the first of six quarries. Later quarries include one in the "Ramble" in Llewellyn Park and Schrupp's Quarry on the eastern slope of the second mountain between Schrupp Place and Mormon Terrace.

### The Early Nineteenth Century

Shortly after the turn of the century, in 1806, Orange Township was formed from Newark Township. In 1807, a citizen's group, taking notice of increased commerce, granted a charter to construct a road from Newark to Morristown. This road, known as the "Orange-Mount Pleasant Turnpike" ran along Main Street and turned north in front of St. Marks Church creating a steep but direct route to Livingston. Serving principally as a teamster route, several inns were located along the way which provided shelter for the horses and drivers. The wagon freight traffic flourished until early 1840's when rail service was brought into the area by the Morris and Essex Railroad. Consequently, most of the taverns disappeared.

Early in the 1800's, it had been recognized that the water in the East Branch of the Rahway River was suitable for processing felt and tanning leather. Consequently, shoes and hats were manufactured by individual or small establishments located along the river.

Eventually, competition killed the local shoe industry. Hats, on the other hand, capitalized on the cheap rail transportation to Newark and New York. As a result, the industry boomed, and Orange became known as one of the nation's leading hat manufacturing centers.

### Llewellyn Park

In 1853, Llewellyn S. Haskell, the founder of Llewellyn Park, purchased 40 acres of land and built a magnificent home on the ridge in the vicinity of the "steep precipice called Turk Eagle Rock".

Haskell eventually assembled parcels of land totalling about 800 acres and personally supervised the construction of Llewellyn Park. In 1857, he conveyed the access road and 50 acres to a trust for the recreation and enjoyment of the residents of the Park.

Prominent people made their homes in the Park. Today, as then, Llewellyn Park is a desirable residential section protected through deed covenants. Each property owner is restricted by certain rules and required to pay an acreage tax, which is used for repairing the roadways and general upkeep of the common property.

### The Founding of West Orange

Shortly after the establishment of Llewellyn Park, farmers unhappy about paying for Orange Town roads that did not reach their lands petitioned the New Jersey State Legislature. On March 11, 1862 the legislature created the Township of Fairmont from portions of Caldwell, Livingston, and sections of Orange lying west of what is now Prospect Avenue on top of the first mountain. On April 10, 1863, prompted by citizens dissatisfied with their public schools, the eastern slope of the first mountain was added to the adjoining Township of Fairmont and renamed the Township of West Orange. At this time, Doctor Edgar E. Marcy acquired a 200 acre tract of land between Northfield Road, Mount Pleasant Avenue and Prospect Avenue. The tract was cleared of trees creating an unobstructed view of the cities of Newark and New York to the east. Some of the prominent people who erected fine homes along the "ridge," or "brow," as it was sometimes called, were George B. McClellan and John Crosby Brown, a prominent New York banker.

At about the same time, Benjamin Small developed St. Cloud located on what had formerly been the farm of Daniel S. Williams. St. Cloud, consisting mostly of small cottages, became a summer colony for wealthy New Yorkers. In summer, fashionable carriages driven by coachman were commonplace on the local roads.

### The Railroad

In 1874, a spur railroad line of the Watchung, or Orange Branch of the Greenwood Lake Division of the Erie Railroad, was placed in operation connecting North Newark to Park Avenue in West Orange. The terminus was called Llewellyn. With the operation of the Erie Spur Line, the Erie and the Lackawanna Railroads battled for commuter patronage. Ultimately, the Lackawanna Railroad triumphed, leaving the Watchung Branch of the Erie as a freight road serving industries along its right-of-way.

The Lackawanna and the Erie Railroads were of little interest except to people who were within walking or riding distance of the lines. Both railroads were of no value to people residing beyond St. Cloud and the Ridge due to the travel limits of horse drawn vehicles.

### Edison

Thomas Alva Edison became a resident of West Orange in 1886 with his purchase of "Glenmont", a large estate home in Llewellyn Park. In the following year, he erected an experimental research laboratory in the vicinity of Cooks Pond, which today is located at the intersection of Valley Road and Lakeside Avenue. The laboratory consisted of one three story brick building and four one story buildings which are still standing today and have been maintained as a museum. Between 1887 and 1890, Edison's phonograph works were erected on Alden Street. During the same period, primarily as a result of the development of Edison Industries, the Orange Line of the Orange and Newark horse car railway was extended up Main Street in Orange, along Valley Road (now Main Street) to Dunn's Road House at Tory Corner.

With the growth of Edison Industries, the area along Main Street (Valley Road) and the area along the West Orange-Orange border become densely populated with the workers in Edison's factories.

Although the mountainside was still sparsely populated, the eastern section of town along Main Street quickly developed into a thriving community. Rail transportation enabled residents who were now working in local industries to commute to Newark and New York. Hotels and saloons stood at the junction of Eagle Rock and Harrison Avenues, to service the passengers waiting to transfer.

In the early 1900's, Edison Industries concentrated on developments in phonograph, film, storage batteries and visual devices. West Orange was the location of the first motion picture, the Great Train Robbery, in 1903. Seventeen hundred films were produced in the area prior to 1930.

In 1910, Edison began producing batteries in his Edison Storage Battery Plant located across the street from the Edison Plant. As the foremost heavy duty battery in the nation, Edison plants supplied batteries for American Submarines during World War II.

Edison Industries continued to be a drawing force until 1929 when the great depression caused the market for phonographs and records to fall sharply away. Edison retired as head of Thomas A. Edison Incorporated in 1930 and was succeeded by his son Charles.

### Recent Development

In the period following World War II, West Orange continued to develop. Its population grew rapidly during the post-war "baby boom", reaching a peak in 1970. Then, as the regional economy weakened and the "baby boom" generation matured, the population declined.

Today, West Orange is primarily a residential community with a large commuting population. Investment, bank, insurance, and service firms have replaced most of the manufacturing firms. Residents have access to a variety of retail and personal service facilities. One large mall, Essex Green, offers residents regional department store shopping.

During the 1980's, property values have increased substantially due to a strong regional economy, improved transportation systems, and West Orange's location within the New York Metropolitan region. As a result, West Orange has again experienced growth and development.

NOTE: Historical background information in this section was obtained from Historical Sketch of the Growth and Development of West Orange 1862-1937 by Samuel Crane Williams and from A History of West Orange by Victor Zakrzewski.

## POPULATION

West Orange's population peaked in the early 1970's and declined through 1982. Population decline has now stabilized and modest future population growth is expected. Growth rates and changing population characteristics are important in planning for the future needs of the municipality.

The composition of the Township population has been changing from an increasing birth rate, increasing elderly population and declining household size. West Orange has 17.9 percent of its population age 65 and over. By 1992 this group will have grown to 19.3 percent of the population. Since 1977, West Orange has also experienced an increasing youthful component of its population. This component is reversing the declining birth rate which occurred between 1960 and 1977.

Population trends within West Orange are influenced by a variety of factors including national, state and regional economic conditions, social changes and government policy. Changing birth rates, changing employment trends and consumer preferences, the availability of land and other factors can affect future development within the municipality.

It is recommended that as updated Census data for population and housing become available, the Planning Board monitor population growth and composition and periodically review its planning program to determine if it is meeting the changing needs and desires of present and future residents of West Orange.

### Sources of Data

The demographic data used in this analysis is derived from a variety of sources. The 1970 and 1980 U.S. Census provides data on general population characteristics in the form of characteristics of persons, households and families and of housing units. Historical and geographical comparisons are possible by using the Census data. Also, the New Jersey Department of Labor and Industry, Division of Planning and Research, Office of Demographic and Economic Analysis, annually compiles data and provides estimates on population characteristics of the State, metropolitan regions, counties and municipalities.

### Historical Population: 1900 - 1980

As shown in Table 1, "Historical Population Trends: 1900-1980, West Orange, Essex County, and New Jersey", West Orange has experienced a rapid and constant growth pattern since 1900, with the only exception being between 1970 and 1980. The first official Census taken in the municipality since it became West Orange Township was the U.S. Census of 1900, which recorded a total population of 6,889. The population of West Orange increased dramatically between 1900 and 1930, increasing 17,438 or 253.1 percent. Between 1930 and 1970, West Orange continued to experience population growth at a steady rate, averaging 18.8 percent annually. During the last decade 1970 - 1980, West Orange experienced a loss of population of 9.6 percent.

### Change in Population: 1960 - 1980

Population change is comprised of two components; natural increase or decrease (births versus deaths), and migration. During the period 1960 to 1970, both components resulted in population growth in West Orange. From 1970 to 1980, the Township population decreased from a reduction in the birth rate and from a fairly large out-migration of population. Data on births and deaths is compiled annually in the West Orange Clerk's Office, and can be utilized to calculate the natural increase or decrease in population. The impact of migration into (or out of) the municipality can then be calculated by comparing Census data or population estimates over a given time period with natural population increases or decreases. Both components are important in determining the overall trend of population growth.

### Births and Deaths: 1960 - 1986

The average birth rate (births per 1,000 population) declined in West Orange over the last two decades. The average birth rate during the 1960 - 1969 period was 15.3 percent, and for the decade 1970 - 1979 the average was 9.3 percent. This trend reflects the declining birth rates reported for the population of New Jersey and Essex County during the same time period. The birth rate for the State declined from 21.8 in 1960 to 16.7 in 1970 and then to a low 13.1 in 1980. The Essex County birth rates were 21.3 in 1960, 18.0 in 1970 and 14.3 in 1980. The most recent data, 1986, indicates an up-turn in birth rates for West Orange, the County and State. In 1986, the birth rate for West Orange was 11.6, Essex County increased to 15.2, and New Jersey reached 14.2.

The number of births in West Orange generally declined annually from 742 in 1961 to 340 in 1976. Since 1976, the number of births generally increased in the municipality reaching 474 in 1986. Table 2, "Natural Population Change: 1960 - 1986, West Orange", contains the recorded number of births and deaths and resulting natural increase or decrease in population on an annual basis.

Table 3, "Nature of Population Change: 1960 - 1986, West Orange", indicates that for the period 1960 to 1969 there were 2,308 more births than deaths in West Orange. From 1970 to 1976, there are 160 more deaths than births causing a natural decrease rather than a natural increase. Since 1980, the number of deaths has continued to surpass the number of births with a seven year total of 272 more deaths than births.

#### In- and Out-Migration: 1960 - 1986

In- and out-migration, has played a major role in the population growth rate of West Orange. In the period 1960 - 1970, 1,512 persons moved into the community representing a 3.8 percent increase. During the next decade, 1970 - 1980, 4,045 people moved out of the municipality causing a 9.3 percent decrease in the population. From 1980 to 1986, West Orange experienced an in-migration of 1,578 or a 4.0 percent increase, with the total population increasing to 40,816.

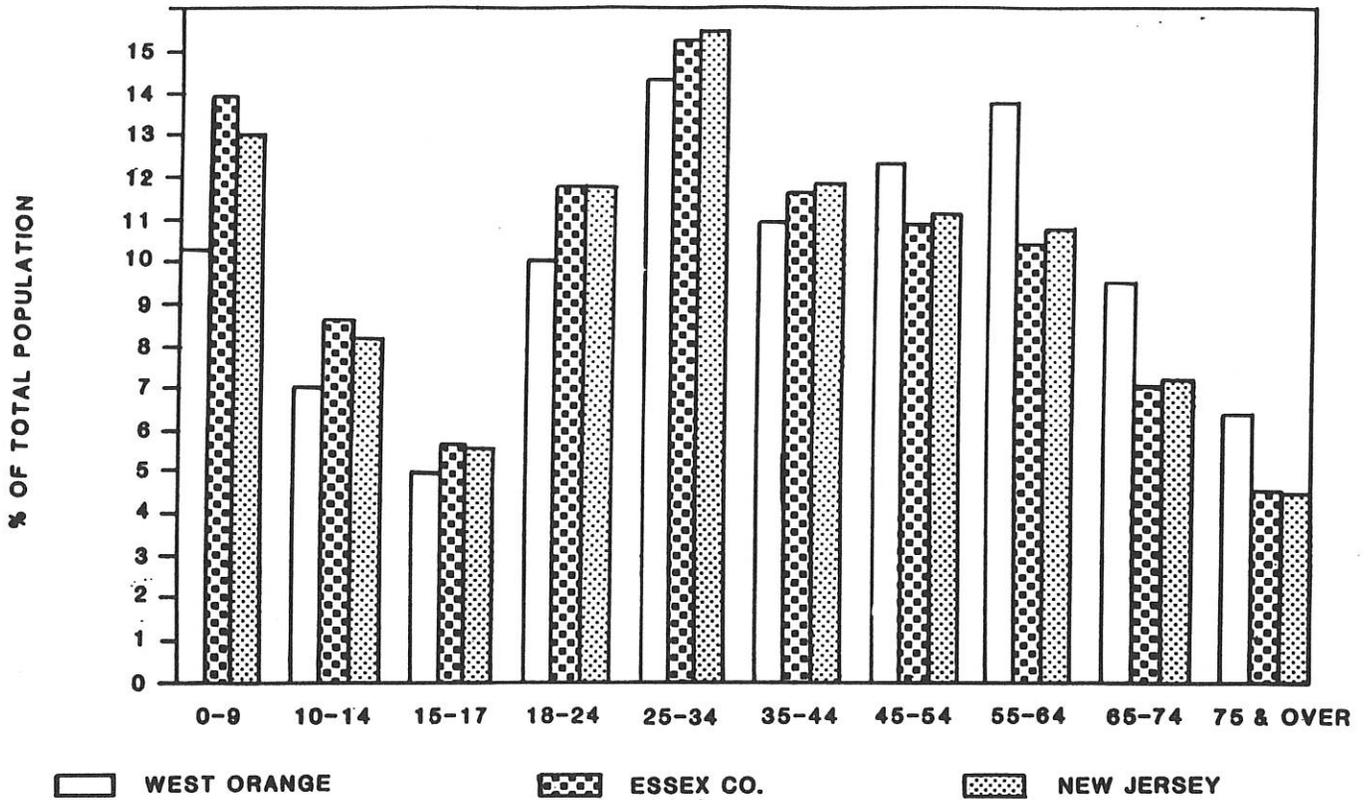
#### Population Characteristics

##### Age Distribution

The age distribution in West Orange is different from that of New Jersey and Essex County, as shown in Figures 2 & 3, "Relative Age Distribution: 1980 and 1987". Analysis of 1980 Census data and 1987 estimates indicates that West Orange has a significantly lower percentage of residents under the age of 9, and a slightly lower percentage of residents under age 15 than the State or Essex County. The most significant deviation from State and County percentages occurs in the group of persons aged 55 and over. In 1980, 29.7 percent of the population of West Orange was within this age group. The percentage increased to 30.5 percent of the total population in 1987. These percentages are significantly higher than the State and County percentages for the same period. This distribution produces a high median age of West Orange residents compared to the County and the State. The West Orange median age in 1980 was 37.9 years, Essex County was 31.5 years, and for New Jersey it was 32.2 years.

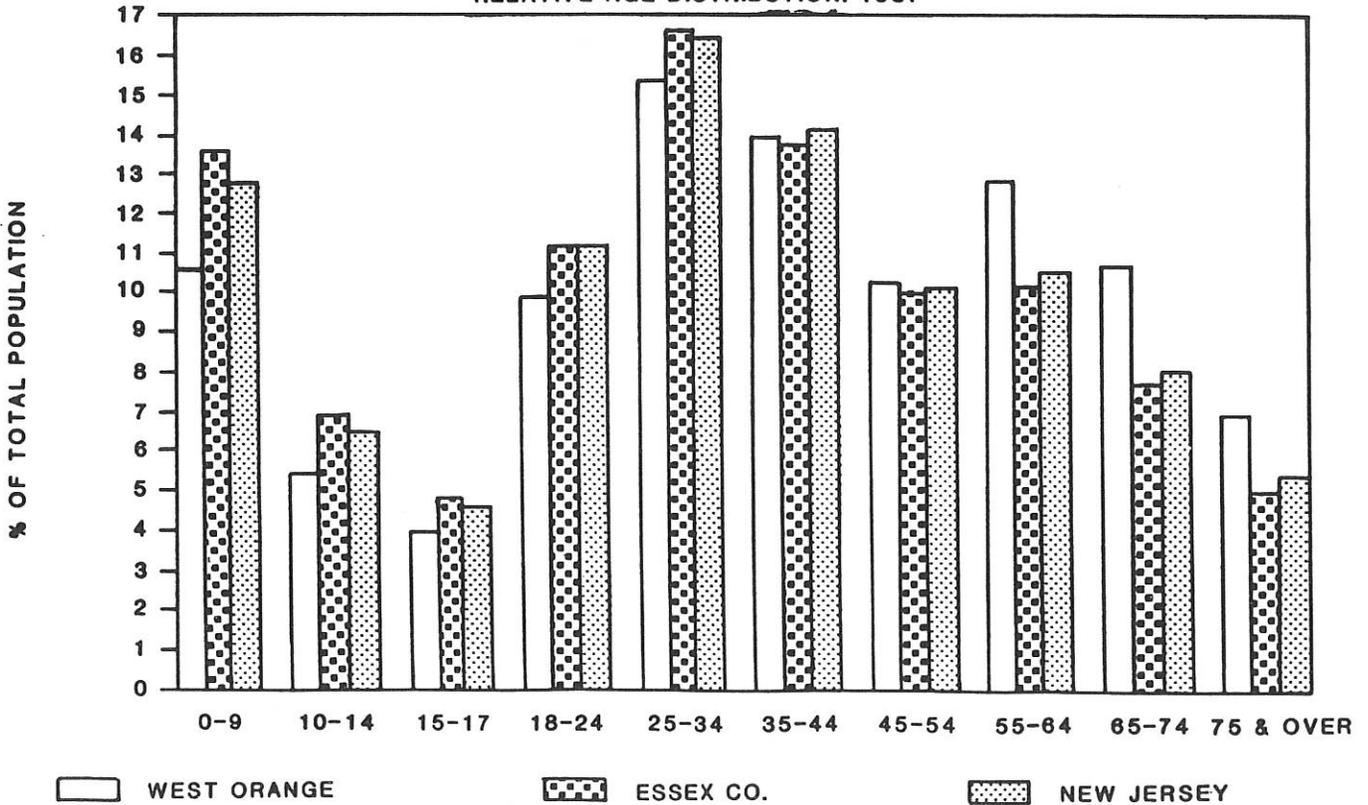
**FIGURE 2**

RELATIVE AGE DISTRIBUTION: 1980



**FIGURE 3**

RELATIVE AGE DISTRIBUTION: 1987



A comparison of the 1980 and 1987 data indicates a similar trend among West Orange, Essex County and the State of New Jersey in terms of age distribution. All three are experiencing an aging population. West Orange shows a significantly slower rate of increase than Essex County and New Jersey. The West Orange median age of population only increased .5 years from 1980 to 1987, while increasing 1.6 years for Essex County and 1.8 for the State over the same period. The slower increase in West Orange is a result of a significant increase in the portion of the population of West Orange in the age groups 25 - 34 and 35 - 44. These age groups increased from 25.4 percent to 29.4 percent of the total population.

There were also changes at each extreme of the age distribution. While the age group 65 and over continued to increase, the municipality experienced a slight increase in the proportion of its population in the age group 0 - 9 years. It should be noted that beginning in 1976 and particularly since 1984, the number of births per year in West Orange has increased. This data is of particular interest in terms of education planning since it should result in larger kindergarten and elementary grade populations in the next few years.

### Sex

The West Orange male to female ratio of 46.7 percent males and 53.3 percent females is comparable to the County figure of 46.6 percent males and 53.4 percent females. The number of males and females are almost equal until age 35, when females start to out number men due to a longer life span.

### Race

The U.S. Census of population divides the total population by race into white and non-white categories. West Orange has a greater percentage of whites than Essex County or the State of New Jersey. The non-white population in 1980 comprised 5.3 percent of the municipality's population. This can be compared to the non-white population of 43.3 percent for the County and 16.8 percent for the State. Table 4, "1980 Population by Race", contains the total population in each racial category for West Orange, Essex County, and New Jersey.

### Education

West Orange had a significantly higher percentage of college educated residents than either the County or the State in 1980. U.S. Census figures show that 42.3 percent of West Orange residents aged 25 and over have attended college as compared with 30.5 percent for the County, and 31.5 percent for the State. In terms of the number of residents with high school or greater education levels, the difference becomes more dramatic. The percentage was 75.3 percent for West Orange, 64.4 percent for Essex County, and 64.4 percent for the State of New Jersey. See Table 5, "1980 Education Levels for Persons 25 and Older, West

### 1981 - 1986 Population Estimates

The New Jersey Department of Labor, Division of Planning and Research, Office of Demographic and Economic Analysis, prepares annual estimates of resident populations for municipalities, counties and the State. (See Table 9, "Population Estimates: 1981 -1986"). These estimates show a change in the growth pattern experienced in the previous decade with West Orange and the State increasing in population while Essex County decreases. The change in West Orange population growth can be explained by the increase in construction of new housing in the municipality since 1984.

### Population Projections: 1970 - 1992

The municipality's 1988 estimates show a 4.4 percent increase compared to a 1.3 percent decrease for the County since 1980. (See Table 10, "Population Projections: 1970 - 1993 West Orange and Essex County"). West Orange's population is expected to increase by 6.4 percent between 1980 and 1993 and by 2.0 percent between 1988 and 1993. In comparison, Essex County is projected to decline by 1.6 percent between 1980 and 1993 and by 0.3 percent between 1988 and 1993.

## NATURAL RESOURCES AND ENVIRONMENTAL CHARACTERISTICS

Throughout the development of the Township of West Orange, natural resources and prominent environmental features have influenced planning and development. Development should continue in concert with the existing conditions and the local, State, and Federal policies which regulate development in sensitive environs. The existing natural resources and environmental characteristics of the Township are described below:

### Physiography

New Jersey is divided into five physiographic provinces: Ridge and Valley, Highlands, Piedmont, Inner Coastal Plain, and Outer Coastal Plain. West Orange is located within the Piedmont physiographic province. The Piedmont province is separated from the Highlands through a series of major faults. The characteristic lifting has resulted in basalt extrusions. The classic example is the saucer shaped ridges of the Watchung Mountains. Following the northeast to southwest orientation of the Watchung Mountains, the Piedmont lowlands are broad and extensive. After the last ice age two large glacial lakes, Passaic and Hackensack, formed over these lowlands encompassing extensive areas of what are now approximately eight New Jersey counties. The Hackensack Meadowlands and the Great Swamp are relics of these former lakes.

Physiography within the Township of West Orange reflects the basaltic extrusions, deposition of eroded sedimentary materials into the valleys, and the shale and sandstone lowlands. Basalt is the dominant igneous material, while siltstone, shale, sandstone, and conglomerates are the dominant sedimentary rocks in the West Orange area. The igneous rocks formed during the Jurassic period of the Mesozoic Era, between 135 and 180 million years ago. The basaltic Watchung Mountains were formed from volcanic activity as lava filled the rifts caused by fault activity, and later cooled. The sedimentary materials were deposited during both the Jurassic and early Triassic periods. The Triassic period of the Meso Era occurred between 180 and 230 million years ago.

### Geology

The underlying formations in Essex County include sandstone, siltstone, shale, basalt and conglomerates. The Township of West Orange is located within outcrops of Brunswick shale and basaltic flows. The Brunswick formation is a red shale formation with no economic importance as a mineral resource. It was deposited during the triassic period of the Meso Era. The Watchung Ridges are hard, dark colored igneous basals. These resistant rocks are locally called traprock and have historically been quarried.

## Soils

Essex County overlays four general soil associations: Whippany, Holyoake, Wethersfield, and tidal marsh. The tidal marsh areas are found in the eastern fringe of the county along the Hackensack River. Whippany soils, relics of glacial Lake Passaic, are poorly drained silts found along the western edge of the county. The Holyoake association includes mildly acidic, stony, shallow soils over the traprock of the Watchung Mountains. The Wethersfield association comprises the majority of Essex County ranging between the Watchungs and the Hackensack River. The soils are generally loamy and well-drained.

The Rutgers University publication "Engineering Soil Survey of New Jersey" has identified specific soil types within the Township of West Orange. These soil types include Recent Alluvium, Basaltic Residual, Glacial Deposition, Moranic Till, and Poorly Drained Low Land soils. Recent Alluvium refers to stratified sediments deposited by flowing water systems. The soils are generally found in the floodplains of existing streams and rivers and are generally poor to very poorly drained. Basaltic Residual refers to hard, dense, homogeneous traprock outcrops. Although stormwater percolation is characteristically poor, the elevations and slopes associated with these outcrops are conducive to rapid storm water runoff. Glacial Deposition soils are characteristically combinations of sand, silt, and gravel. Drainage conditions vary from the well-drained sands and gravels to the poorly drained compacted silts. These materials were deposited by the melt waters of the Wisconsin Glacier. Moranic Till refers to the sediments deposited by moraines of the Wisconsin Glacier. These sediments include a variety of clay, silt, sand, gravel, cobbles, and boulders. These areas are characteristically moderate to poorly drained. The poorly drained low land soils are generally eroded mountain deposits which have collected in the valleys. These soils characteristically have a shallow depth to ground water, and therefore are poorly drained.

Four other soil types were identified in West Orange. These are combinations of Moranic Till overlaying various subsurfaces at shallow depths. Within the Township the till overlays Basaltic Traprock, Poorly Drained Soils, Red Shale, or Red Sandstone.

The New Jersey Department of Agriculture regulates the disturbance of soil exceeding 5,000 square feet of surface area for a variety of purposes. There are 17 soil conservation districts in New Jersey which administer the Soil Erosion and Sediment Control Act (NJSA 4:24-1 et seq.) through the review and certification of site plans. Applications in West Orange are reviewed by the Hudson, Essex & Passaic Soil Conservation District in Verona.

## Topography and Surface Waters

Topography in West Orange varies between steep slopes along the Watchung Mountains; gentle slopes along the fringes of the mountains; and nearby level areas in the valleys. Elevations range from a low of approximately 140 feet above sea level in the southeastern corner of the Township near South Valley Road, to a high of approximately 620 feet along the ridge of the first Watchung in the area between Essex County Park and Ridge Road. West of this ridge the elevation dips to a low of approximately 360 feet around Crystal Lake and 300 feet around Orange Reservoir. A series of peaks located west of this valley reach heights ranging between 550 and 630 feet. Topography and areas of steep slopes are shown on Figure 4.

Surface waters flow through the two valleys of West Orange. The east branch of the Rahway River and the north and south branches of Wigwam Brook dominate the eastern border of the Township. The more centrally located valley in the Township is dominated by the west branch of the Rahway River and Orange Reservoir in the area south of Eagle Rock Avenue; and the Peckman River north of Eagle Rock Avenue. Small segments of Canoe Brook and Bear Brook extend into the Township along the western boundary. Cable Lake and Crystal Lake are located along the ridge of the first Watchung. (Figure 5)

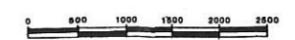
The 100 and 500 year floodplains are delineated by the Federal Emergency Management Agency (FEMA), on Floodplain Insurance Rate Maps (FIRM). The 100 year floodplains in West Orange follow the branches of the Rahway River, Peckman River, and Wigwam Brook. One Hundred year floodplains also surround Orange Reservoir, Lake Vincent, Crystal Lake, Cable Lake and a small area of Turtle Brook adjacent to Northfield Avenue, west of Rock Spring Avenue. Areas of the 100 year floodplain are shown on Figure 6. The 500 year floodplains fringe the 100 year floodplains of the Township's rivers and brooks. Five Hundred year floodplains also encompass areas of Bear Brook, Canoe Brook, Turtle Brook and South Branch-Wigwam Brook. Other disjointed floodprone areas include a small area surrounding Valley Road north of Whittingham Place; Valley Road north of White Street; Ashland Avenue, between White Street and Park Avenue; lands surrounding Carteret Street, Bauer Drive, and Crystal Avenue at their common intersections; and segments of Midrow Way and Mayfair Drive.

Permits are required for alterations to stream channels or floodplains within the 100 year flood boundary, under the Flood Hazard Control Act (NJSA 58:16A-50 et seq). This program is administered by the New Jersey Department of Environmental Protection, Division of Water Resources, Bureau of Floodplain Management. The United States Army Corps of Engineers, New York District, regulates the dredging or filling of navigable waters, their floodplains and tributaries under the Clean Water Act (33 U.S.C 1344). To maintain water quality, public agencies and private corporations which discharge effluent, industrial wastewater or wash water, into surface waters are required to obtain permits in accordance with the Federal Water Pollution Control Act (PL 92-500). These permits are obtainable under the National Pollutant Discharge Elimination process. Permits are also required under the New Jersey Water Pollution Control Act (NJSA 58:10A-1 et seq.) for discharge into surface or ground water. This program is administered by the Department of Environmental Protection, Division of Water Resources, Water Quality Management Element.



**FIGURE 4**  
**STEEP SLOPES - 15% OR MORE**

**TOWNSHIP**  
**OF**  
**WEST ORANGE**  
**ESSEX COUNTY, NEW JERSEY**



BASE MAP PROVIDED BY TOWN ENGINEER AND  
 REVISED BY TOWNPLAN ASSOCIATES, 1965.



1000 HIGHWAY 26, HICKLETOWN TOWNSHIP, WEST BAKE, N.J. • (908) 517-0400  
 20 MAIN STREET, DUNEL TOWNSHIP, TOWNSHIP, N.J. • (908) 510-0000  
 100 SOUTH MAIN STREET, PLAINVILLE, N.J. • (908) 540-0000



**FIGURE 5**  
**STREAMS AND WOODLANDS**

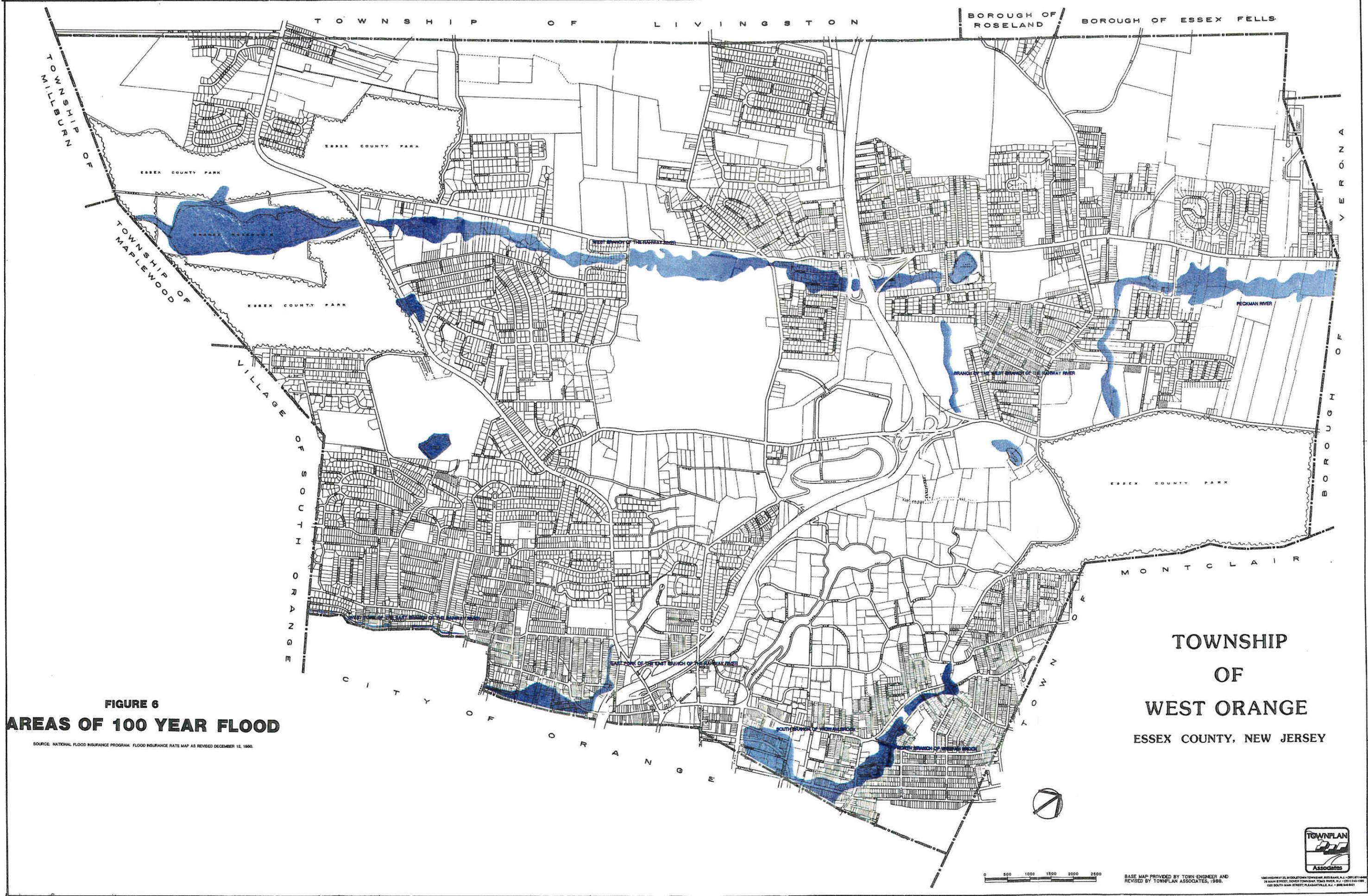
**TOWNSHIP**  
**OF**  
**WEST ORANGE**  
**ESSEX COUNTY, NEW JERSEY**



0 500 1000 1500 2000 2500

BASE MAP PROVIDED BY TOWN ENGINEER AND  
REVISED BY TOWNPLAN ASSOCIATES, 1988.

100 HIGHLAND ST., BRIDGETOWN TOWNSHIP, P.O. BOX 100, BRIDGE TOWN, N.J. 07011-0100  
100 MAIN STREET, LOWER TOWNSHIP, TOWNSHIP OF WEST ORANGE, N.J. 07061-1000  
100 SOUTH MAIN STREET, PLAZA TOWNSHIP, N.J. 07061-1000



**FIGURE 6**  
**AREAS OF 100 YEAR FLOOD**

SOURCE: NATIONAL FLOOD INSURANCE PROGRAM. FLOOD INSURANCE RATE MAP AS REVISED DECEMBER 12, 1980.

**TOWNSHIP**  
**OF**  
**WEST ORANGE**  
**ESSEX COUNTY, NEW JERSEY**



BASE MAP PROVIDED BY TOWN ENGINEER AND REVISED BY TOWNPLAN ASSOCIATES, 1986.  
 190 HIGHLAND ST. WOODSTOWN TOWNSHIP, RED BANK, N.J. 07071-0400  
 25 MAIN STREET, LOWER TOWNSHIP, TOWNSHIP, N.J. 12011-0400  
 1520 SOUTH MAIN STREET, PLEASANTVILLE, N.J. 08054-0401

## Vegetation and Wetlands

Four typical vegetative associations can be found within the Township of West Orange: Wetland, Forest, Successional, and Urban Associations. Urban vegetation includes ornamental species which may not be native nor particularly well-suited to area conditions. This association is dominated by turf grasses, annual and perennial flowers and bulbs, ornamental shrubs and street trees.

Successional vegetation can be found where the original vegetative associations were disturbed and later allowed to revert to an undisturbed state. Early successional vegetation includes annual and perennial grasses, wildflowers and vines. Later stages of succession include the introduction of small shrubs, followed by trees, with an evolution or thinning of the ground cover layers.

Extensive areas of upland forest have been preserved along the ridges of the Watchung Mountains. The preserved areas are generally forested with Mixed Oak associations. Red, Black and White Oaks characteristically dominate this association. Chestnut and Scarlet Oaks are also common. Other trees which can typically be found in Mixed Oak Forest associations include Hickory, Red Maple, Sugar Maple, White Ash, Tuliptree, Beech, Black Cherry, Sweet Birch, Black Gum and Elm. A typical understory in this association is dominated by Blueberry, Huckleberry, Dogwood, Virbirnum, Spicebush, and Witch Hazel. The most common vines include Poison Ivy, Virginia Creeper, Halls Honeysuckle, and varieties of Wild Grape. The herbaceous layer is generally dominated by woodland ferns, wildflowers including May Apple, Violet, False Lily of the Valley, Asters, Goldenrods, Pokeweed, and perennial grasses including Bluestern, Switchgrass and Red Top. Forested areas within West Orange are shown on Figure 5.

Forest wetlands are characterized by a dominance of woody vegetation taller than 20 feet which are typically adapted to inundation or saturated soil conditions. The typical Forested Wetland association in this area is dominated by Red Maple. Other associated trees typically include American Elm, Sycamore, Black Cherry, River Birch, and Swamp White Oak. Characteristically, the dominant shrub is Spicebush and Wild Garlic is dominate herb. Common vines include such briars as Greenbriar, Catbriar and Horsebriar; Virginia Creeper, and varieties of Wild Grape.

The United States Fish and Wildlife Service has adopted a "Classification of Wetlands and Deep Water Habitats of the United States", which delineates and identifies tidal and freshwater wetlands. The system is hierarchical and structured with a combination of ecological, biological, hydrological, and substrata characteristics. The National Wetlands Inventory (NWI) Maps have been prepared from aerial photography and are based on the identification of vegetation and visible water systems. These maps were prepared as overlays to the U.S. Geological Service Quadrangles. Designated NWI wetlands within the Township of West Orange are Riverine, Lacustrine, and Palustrine. Riverine wetlands systems are those which line the banks of rivers and streams. Lacustrine wetlands are those which have deep water and are lake or reservoir associated. Palustrine

wetlands are freshwater wetlands which occupy lowland depressions and shallow floodplains. The mapped Riverine and Lacustrine wetlands systems in West Orange are classified as open water systems. Open water classes are generally unvegetated. The mapped Palustrine wetlands in West Orange are classified as either open water or forest with deciduous trees. Wetlands locations within West Orange are shown on Figure 7.

The discharge of dredge or fill material into open water systems is regulated by the United States Army Corps of Engineers, under Section 404 of the Clean Water Act (33 U.S.C. 1344). Jurisdiction of fresh water wetlands is currently shared by the Army Corps of Engineers and the New Jersey Department of Environmental Protection in accordance with the New Jersey Freshwater Wetlands Protection Act (PL 1987, Chapter 156). Activities which are regulated under the Freshwater Wetlands Protection Act include the removal, excavation, disturbance or dredging of soil, sand, gravel or aggregate material of any kind; the drainage or disturbance of the water level or water table; the dumping, discharging or filling with any materials; driving of pilings; placing of obstructions; or destruction of plant life which would alter the characteristic of the freshwater wetland, including the cutting of trees. Effective July 1, 1989 transition areas of up to 150 feet may be required adjacent to freshwater wetlands by the Department of Environmental Protection to minimize adverse impacts of development.



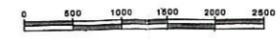
**FIGURE 7  
WETLANDS**

KEY	ECOLOGICAL SYSTEM	SUBSYSTEM	CLASS	SUBCLASS
L10W	LACUSTRINE	LIMNETIC	OPEN WATER	NONE
R20W	RIVERINE	LOWER PERENNIAL	OPEN WATER	NONE
POW	PALUSTRINE	NONE	OPEN WATER	NONE
PFO1	PALUSTRINE	NONE	FORESTED	BROAD LEAVED DECIDUOUS

SOURCE: U.S. DEPARTMENT OF THE INTERIOR - FISH AND WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY MAP

★ NOTE: ALL WETLAND LOCATIONS ARE APPROXIMATE. DETAILS ON THE GROUND ANALYSIS ARE NEEDED FOR ACCURATE WETLANDS DELINEATION.

**TOWNSHIP  
OF  
WEST ORANGE**  
ESSEX COUNTY, NEW JERSEY



BASE MAP PROVIDED BY TOWN ENGINEER AND  
REVISED BY TOWNPLAN ASSOCIATES, 1986.



1000 HIGHWAY 27, MIDDLETOWN TOWNSHIP, RED BANK, N.J. 08016-1140  
70 MAIN STREET, JERSEY TOWNSHIP, TOWNSHIP, N.J. 07016-1001  
1000 NORTH MAIN STREET, PLAINFIELD, N.J. 08061-4401

## Wildlife

The variety of wildlife species which inhabit or visit an area is directly related to the physical characteristics of the region. The most significant characteristics include the availability and diversity of food, water, cover and predators, with different species being attracted to different environmental conditions. The Township of West Orange is within the range of a wide variety of bird species. Those known or presumed to visit or nest in the Township are listed in Table 11, "Bird Species: Township of West Orange". Mammals typically found within the Township include those associated with forest, wet forest, forest fringe, and urban land habitats. Many species can be found in conjunction with a variety of habitats, but are often limited to one or two specific areas for food and cover. Table 12, "Mammalian Wildlife Species: Township of West Orange", list the species known or presumed to inhabit the Township, their habitats, and any special requirements.

The New Jersey Department of Environmental Protection maintains lists of threatened and endangered wildlife species, their habitats and ranges. Endangered species are those whose prospects for survival within the State are in immediate danger. A species is classified as threatened if the continued loss of, or change in habitat, or an increase or continuation of exploitation, predation, disease or competition would cause that species to become endangered. Threatened and endangered wildlife species associated with this area of Essex County, and which could find suitable habitat within the Township, are listed in Table 13, "Endangered and Threatened Wildlife Species: Township of West Orange". This table lists the common and scientific names of the species, their status within the State, and suitable habitat requirements.

## Natural Resources and Planning

Several of the specific natural resources, including wetlands and surface waters, which create the unique character of the Township are now recognized to be of significant public value, and are protected through Federal and State Environmental legislation. Several significant areas along the mountain ridges are preserved through public ownership. Local zoning and land development regulations developed for the Township should recognize the natural features and coordinate with Federal and State regulatory programs.

## EXISTING LAND USE

### Land Development Patterns

The Township of West Orange has developed as a suburb within the New York - New Jersey Metropolitan Area. Its convenient location to New York City, Newark and other population and employment centers as well as its attractive position along the Watchung Mountains has drawn and continues to draw families and businesses.

The Town's development patterns and mix of buildings reflect its suburban evolution through the 19th and 20th Centuries. Early development began in the east along the valley in the Tory Corner area of Main Street and Long Valley Road and industry located along the East Branch of the Rahway River. Suburban residential development included the Redwood, Pleasantdale, Mount Pleasant and St. Cloud sections of the community. Llewellyn Park, Gregory, and Hazel neighborhood were also products of the community's early suburban growth. After World War II, newer development started to fill in the larger vacant tracts, particularly in the western portion of the community. This has resulted in a general development pattern of high density, older development in the eastern portion of the Town with newer and lower density development and public open spaces in the western portion. With the completion and opening of Interstate 280, and strong economic growth within New Jersey during the 1980's, the Township's remaining developable land has continued to be converted or redeveloped for residential and commercial uses at suburban intensities with the automobile as the principal means of transportation.

In March 1988, a detailed survey of existing land use was undertaken by Townplan Associates utilizing existing tax maps, assessment data, aerial photography, and a field survey of the Township. Land use data was mapped on a lot by lot basis and is presented on Figure 8, "Existing Land Use". Land use areas were tabulated on an acreage basis by category of use and are shown on Table 14. The results, when compared to the land use survey of West Orange undertaken in 1964, show a continuation of the long term trend to utilize the Township's land supply for residential and commercial uses. Undeveloped land, which totalled 21.5 percent of the Township's land area in 1964 had been reduced to 10.6 percent by 1988. Residential land use accounted for nearly 38 percent of the Township's area with single family development accounting for a total of 34 percent of the Township's acreage. In 1964, the total residential acreage was 31 percent of the community. Multi-family development (dwellings containing 3 units or more) had increased from 1.2 to 3.1 percent of the community's land area. Two family development, on the other hand, declined from 1.6 percent of the community's acreage to .8 percent.

TOWNSHIP OF LIVINGSTON BOROUGH OF ROSELAND BOROUGH OF ESSEX FELLS



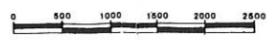
FIGURE 8

EXISTING LAND USE - 1988

- RESIDENTIAL**
  - SINGLE FAMILY
  - TWO FAMILY
  - MULTI-FAMILY
  - HOME OCCUPATION/HOME PROFESSION
- BUSINESS AND COMMERCIAL**
  - RETAIL AND PERSONAL SERVICE USES
  - GENERAL BUSINESS (BANKS, OFFICES, OTHER COMMERCIAL)
  - MIXED USE (COMMERCIAL/RESIDENTIAL, RETAIL, GENERAL BUSINESS)
- INDUSTRIAL**
- PUBLIC**
  - COUNTY PARKS AND RECREATION
  - MUNICIPAL PARKS AND RECREATION
  - FEDERAL PARKS AND RECREATION
  - SCHOOLS
  - OTHER PUBLIC BUILDINGS AND LANDS
- QUASI-PUBLIC**
  - QUASI-PUBLIC OPEN SPACE AND RECREATION
  - HOUSES OF WORSHIP
  - CEMETERIES
  - PRIVATE SCHOOLS
  - OTHER QUASI-PUBLIC (FRATERNAL ORGANIZATIONS, REHABILITATION CENTERS, UTILITIES, ETC.)
- AGRICULTURE**
- VACANT LAND**

SOURCE: FIELD SURVEY BY TOWNPLAN ASSOCIATES - MARCH 1988  
TOWNSHIP TAX ASSESSMENT DATA - 1985  
AERIAL PHOTOGRAPHY TRI-STATE REGIONAL PLANNING COMMISSION - 1980

TOWNSHIP OF WEST ORANGE  
ESSEX COUNTY, NEW JERSEY



BASE MAP PROVIDED BY TOWN ENGINEER AND REVISED BY TOWNPLAN ASSOCIATES, 1988.



1000 HIGHLAND BL. WHOLESALE TOWNSHIP, 07060 BASKIN, N.J. 07001-1100  
20 MAIN STREET, GOWER TOWNSHIP, TOWNSHIP, N.J. 07031-1400  
100 SOUTH MAIN STREET, PLASANTVILLE, N.J. 07054-0001

While industrial land use declined to .5 percent of the community's acreage, business and other commercial land use increased. Business acreage, which was approximately 256 acres or 3.3 percent of the community in 1964, had increased to over 438 acres or 5.6 percent of the community by 1988. Retail and personal services dominate business activity, although, with the completion of Interstate 280 the Town has experienced recent development pressures for corporate offices.

One of the notable features of the Township development pattern is the quantity of public and quasi-public land. Together, public and quasi-public uses total over 31 percent of the land area. Most of this (over 22 percent) is used for open space or recreation. West Orange is host to 993 acres of County parkland and 715 acres of quasi-public open space. The quasi-public land consists mostly of golf courses. Other uses within these categories include public and private schools, Federal historic sites, cemeteries, and fraternal organizations. Total public and quasi-public uses have increased from approximately 30 percent of the community's land area in 1964 to 31.1 percent in 1980.

Another change identified by the recent land use survey is the increase in area used for streets and rights-of-way. This increase, from 12.8 percent of the community's land area in 1964, to 14.6 percent today, largely reflects the completion of the interstate highway. The location of commercial development within the community continues to be influenced by the major transportation routes.

### Existing Zoning

West Orange is arranged into 18 zoning districts and 2 overlay zones. The zone districts provide for a range of single family, multi-family, industrial, and retail and commercial uses at suburban intensities. The location of the zones and tabulation of their area within West Orange is shown on Figure 9 and Table 15. The relationship between the zone districts and existing land use is reviewed below:

R-1 One Family Residential Zone - This single family zone, which requires a minimum of 80,000 square foot lots, is the largest zone category within the Township. However, most lands regulated under it are either public lands within the Essex County Park System or part of the existing developed Llewellyn Park residential area. Large portions of the R-1 Zone are overlain by a Conservation Zone. The overlay restricts the development of public lands to promote the conservation of open spaces and environmental resources.

- R-2 One Family Residential Zone - This zone, requiring 40,000 square foot minimum lot sizes, is the second largest zone category and accounts for 19.3 percent of the Township's land area. Uses regulated under this category include private golf courses and country clubs, undeveloped acreage in the northern corner of the Township bordering Essex Fells and acreage along the northeastern portion of the Township bordering Livingston. The R-2 designation has also been applied to public and private golf courses and public lands adjoining Pleasant Valley Way and Mount Pleasant Avenue.
- R-3 One Family Residential Zone - This district, requiring 20,000 square foot minimums consists of smaller zone districts located adjacent to Verona, along Eagle Rock Avenue north of Valley Way, and several other scattered locations within the Township. The district zones are relatively small in area and account for approximately 1.3 percent of the community's land area.
- R-4 One Family Residential Zone - This district requires 15,000 square foot minimums and accounts for 8.3 percent of the community's land area. It is found in several locations throughout the Township and consists primarily of lands which are largely developed. There are several R-4 locations in public ownership which are overlain by the Conservation Zone.
- R-5 One Family Residential Zone - This is the third largest residential zone classification. It requires 10,000 square foot lots and constitutes 17.1 percent of the community's total area. It consists primarily of several larger districts north of Gregory Avenue, north of Northfield Avenue, and north of Eagle Rock Avenue. The R-5 Residential Zones are largely developed.
- R-6 One Family Residential Zone - These largely developed areas require 6,000 square foot minimum lots and constitute 9.5 percent of the Township's land area. They are commonly found adjacent to the R-5 Zone Districts, particularly south of Gregory Avenue, west of Eagle Rock Avenue, and northwest of Pleasant Valley Way.
- RT Two Family Residential Zone - This zone permits both single family and two family dwellings as principal uses. Single family is permitted on 5,000 square foot lots, two family requires 3,750 square feet for each unit. The zone accounts for 4.2 percent of the Township's land area. It consists of several districts which are found almost exclusively in the southern portion of the town near the Main Street/Valley Road Central Business corridor and adjacent to Montclair and Orange. These zones are largely developed.

- RG** Garden Apartment Zone - This zone permits one family according to R-1 standards and garden apartment development on sites of 5 acres or more. It also permits professional office buildings, insurance offices, and banks. Fifteen thousand square foot minimum lots are required for single family development. Garden apartments are limited to eight (8) units per acre. The RG districts are largely developed. They are found in several locations including adjacent to the Montclair, west of Interstate Route 280 along Randolph Place and Northfield Avenue, adjacent to Millburn and Livingston, along Mount Pleasant Avenue, and south along Mann Avenue.
- RM** Apartment Houses - This district permits apartment houses at 12 units per acre, dormitory and boarding houses, and one and two family dwelling as allowed in the RT Zone. The category accounts for less than 1 percent of the Township's land area. It is found in several different locations in or adjacent to the Main Street/Valley Road corridor.
- RC** Single Family or Townhouses - This district permits townhouses and single family development at four (4) dwelling units per acre. Lands within the zone district are either developed or have been approved for development. They are located adjacent to Livingston, Essex Fells, and Pleasant Valley Way. RC Zones account for approximately 2.3 percent of the Township's land area.
- PURD** Planned Unit Residential Development Zone - This district permits single family development, townhouses, garden apartments, and apartment houses at densities of 6 dwelling units per acre. It is found in 4 locations which are presently developed or for which development approval has been granted. These are along the Prospect Avenue corridor adjacent to Interstate Route 280, along Eagle Rock Avenue southeast of the Prospect Avenue corridor on the former quarry site, in the western corner of the Town adjacent to Essex County Park, and adjacent to Mount Pleasant Avenue.
- OB-1** Office Buildings - This zone district permits office buildings on 10,000 square foot lots and also single family residential development in accordance with R-1 standards. The category accounts for 1.5 percent of the Township's land area. It is found in several locations within or adjacent to the Main Street/Valley Way corridor, near the Prospect Avenue corridor adjacent to Interstate Route 280, along Northfield Avenue, and near the intersection of Eagle Rock Avenue and Pleasant Valley Way. The OB1 sites are largely developed.

- OB-2 Office Buildings - This category permits the same use as OB1 according to the same lot area requirements but permits heights up to 4 stories. It also allows senior citizen complexes as a conditional use. The category accounts for a little less than 2 percent of the community's land area. It is found within the Main Street/Valley Road corridor, along Northfield Avenue, and adjacent to the Township of Livingston border. It is also found along the Prospect Avenue corridor adjacent to Interstate Route 280 on lands which have been approved for office development.
- B-1 Retail Business - The B-1 district permits retail stores and personal service uses, office buildings, and related uses as well as residential development according to the standards of the R-T Two Family Zone. The B-1 category is found primarily within the Main Street/Valley Road corridor and near the intersection of Pleasant Valley Way and Eagle Rock Avenue. The district has no minimum square footage for commercial development.
- B2 Retail Business - This district permits B-1 commercial use categories but prohibits residential uses. It requires 10,000 square foot minimum lots for commercial development. The zone accounts for 1.5 percent in the Township's land area, is found primarily along the Prospect Avenue corridor, along Eagle Rock Avenue, along Northfield Avenue and near the intersection of Pleasant Valley Way and Eagle Rock Avenue. The B-2 Zone is largely developed.
- P-C Planned Shopping Center - This category allows for shopping center development on a minimum parcel of 8 acres and is found in two locations along the Prospect Avenue corridor near its intersection with I280. Both sites have been developed.
- O-R Office Research - This district permits office research facilities on sites that are at least 5 acres in area. The category accounts for 1.8 percent of the Township's land area. Its primary location is along the Prospect Avenue corridor in three locations, one of which is developed, one of which is approved for development and one of which remains undeveloped. The category accounts for 1.8 percent of the Township's land area.
- I Industrial - This district allows for industrial and warehouse uses on 10,000 square foot minimum lots. The category accounts for under 1 percent of the Township's land area. It is found in two locations within the Main Street/Valley Road corridor adjacent to the City of Orange.

**C Conservation Overlay - The Township's Conservation District is an overlay zone which restricts the development of public lands. It includes four (4) classes of property:**

1. Lands used as public parks or recreation areas.
2. Areas which could potentially be developed as parks or recreation areas.
3. Lands which are environmentally sensitive.
4. Lands which are vital for the preservation of regional water supplies.

**CBD Central Business District Overlay - The Main Street/Valley Road Corridor has been the subject of special concern and studies by the Township. As one of the older commercial areas of the municipality, it requires revitalization and specialized treatment to both encourage and guide redevelopment over the long term. The CBD Overlay sets up standards to guide rehabilitation and new construction.**



**FIGURE 9**  
**EXISTING ZONING - 1988**

**ZONE DESCRIPTION**

R-1	ONE-FAMILY RESIDENTIAL	80,000 SF
R-2	ONE-FAMILY RESIDENTIAL	40,000 SF
R-3	ONE-FAMILY RESIDENTIAL	20,000 SF
R-4	ONE-FAMILY RESIDENTIAL	15,000 SF
R-5	ONE-FAMILY RESIDENTIAL	10,000 SF
R-6	ONE-FAMILY RESIDENTIAL	6,000 SF
R-T	TWO-FAMILY RESIDENTIAL	5,000 SF
R-G	GARDEN APARTMENTS	8 UN/ACRE
R-M	APARTMENT HOUSES	12 UN/ACRE
R-C	SINGLE FAM. OR TOWNHOUSE	4 UN/ACRE
PURD		6 UN/ACRE
OB-1	OFFICE BUILDINGS	10,000 SF
OB-2	OFFICE BUILDINGS	10,000 SF
B-1	RETAIL BUSINESS	NO MINIMUM
B-2	RETAIL BUSINESS	10,000 SF
P-C	PLANNED SHOPPING CENTER	8 ACRES
O-R	OFFICE RESEARCH	5 ACRES
I	INDUSTRIAL	10,000 SF

**C CONSERVATION** THIS CATEGORY IS AN OVERLAY ZONE WHICH INVOLVES MORE THAN ONE ZONING DISTRICT-SEE THE ZONING TEXT, SEC. 25-6.7 & ORD. 821-86 FOR DETAILS

**CBD MAIN ST./VALLEY RD. CORRIDOR** THIS CATEGORY IS AN OVERLAY ZONE WHICH INVOLVES MORE THAN ONE ZONING DISTRICT-SEE THE ZONING TEXT, SEC. 25-6.3 FOR DETAILS

**TOWNSHIP OF WEST ORANGE**  
ESSEX COUNTY, NEW JERSEY



BASE MAP PROVIDED BY TOWN ENGINEER AND REVISED BY TOWNPLAN ASSOCIATES, 1988.

UNINCORPORATED TOWNSHIP OF WEST ORANGE, N.J. 07091  
25 MAIN STREET, COVER TOWNSHIP, TOWNE ENGINEER, N.J. 07091-1000  
100 SOUTH MAIN STREET, PLEASANTVILLE, N.J. 08859

## MASTER PLAN

### OBJECTIVES, PRINCIPLES, ASSUMPTIONS, POLICIES AND STANDARDS

The West Orange Master Plan is a general guide for the physical, economic and social development of the Township. It has been prepared in accordance with the provisions of the New Jersey Municipal Land Use Law (N.J.S.A. 40:55D et seq. as amended) and it is designed to guide development in a manner which will promote and protect the health, safety, and general welfare of present and future residents of West Orange.

The Plan is based upon the objectives, principles, assumptions, policies and standards which are described in this section.

#### Objectives

The purpose of West Orange Master Plan is to do the following:

1. Encourage municipal actions which will guide the long range development of lands within the Township of West Orange in a manner which will promote the health, safety, and general welfare of present and future residents.
2. Secure the public's safety from fire, flood, panic, and other natural and man-made disasters.
3. Provide adequate light, air and open space.
4. Ensure that development within the Township does not conflict with the development and general welfare of neighboring municipalities, the County, the region, and the State as a whole.
5. Establish appropriate population densities and concentrations that will contribute to the well being of persons, neighborhoods and preservation of the environment.
6. Encourage the appropriate and efficient expenditure of public funds by the coordination public development with land use policies.
7. Provide sufficient space in appropriate locations for residential, recreational, commercial, industrial and open space uses in a manner which will provide balanced growth and development.

8. Encourage the location and design of transportation and circulation routes which will promote the free flow of traffic while discouraging routes and facilities resulting in congestion or blight.
9. Promote a desirable visual environment.
10. Promote the conservation of historic sites and districts, and scenic areas such as Llewellyn Park and Prospect Ridge, as well as open space, and natural resources and prevent degradation of the environment through improper use of land.
11. Encourage development and rehabilitation of the Main Street Central Business District.
12. Provide for the housing needs of senior citizens and low and moderate income households.
13. Improve and maintain residential neighborhoods by encouraging rehabilitation of existing dwellings and new residential construction at suitable densities.
14. Promote the recovery of recyclable materials from solid waste and encourage the conservation of energy.
15. Coordinate the public and private procedures and activities which influence land development with a view of promoting efficient use of land and lessening the cost of such development.
16. Encourage the continued economic development of the community.
17. Maintain a continuous planning process which will coordinate capital expenditures with the Master Plan and provide for development reviews to implement the Plan's policies and standards.
18. Utilize available funding sources at the Federal, State, and County level to improve and revitalize the community.

### Principles

The West Orange Master Plan is based upon the following principles:

1. Encourage residential development in locations and at densities which are compatible with existing development patterns and which can be properly served by public roadways, utilities, and services.

2. Locate public, commercial, and service uses at sites and locations which are suitable for their use environmentally, economically and geographically, and can be adequately serviced by public infrastructure.
3. Protect natural and environmental resources including floodplains, wetlands, woodlands, steep slopes, and areas valuable as scenic, historical, cultural, or recreational resources.
4. Maintain community scale by limiting the intensity of commercial and residential development to assure compatibility with existing neighborhood character.

#### Assumptions, Policies and Standards

The West Orange Master Plan assumes a continuation of the region's economic growth which has contributed to the Township's recent development. Moreover, it assumes that there will be no catastrophic disasters which would require reconstruction or redevelopment of extensive portions of the Township. Continued growth will result in pressures to intensify existing land use and develop remaining available lands. Infill development and redevelopment should be balanced with the need to maintain open space. As the Township's infrastructure ages, existing roads, drainage facilities, and public buildings will require repair or replacement. Present problems of traffic congestion, the shortage of affordable housing, and the fiscal pressures to maintain quality services and infrastructure while stabilizing the municipal tax rate will continue to be issues.

In order to address these issues, the Township Plan is based upon the following general policies and standards:

Housing and Neighborhood Preservation - West Orange has a variety of housing types and residential neighborhoods. A substantial portion of the housing stock (over 40 percent) predates World War II. Housing costs are high, particularly for owner-occupied units. There is a need for housing affordable to senior citizens and young households. The Township's planning policy is to maintain the existing stock of viable housing, particularly for low and moderate income households, through code enforcement and rehabilitation programs. Furthermore, since the value of housing is related to neighborhood conditions, the Township should give priority consideration to residential neighborhoods in need of rehabilitation for appropriate street, drainage, sidewalk, curb, safety, and recreation improvements. The Township should encourage and provide for construction of additional senior citizen housing within the community to help meet its obligation to provide opportunities for affordable housing. The Township should create a Housing Trust Fund financed by developer contributions which will be committed to the rehabilitation and production of affordable low and moderate income housing.

Environment and Open Space - Although West Orange's natural features have been substantially altered by development, the Township has retained large areas of open space either as part of the Essex County Park System or as golf courses and country clubs. Moreover, remaining undeveloped lands contain areas of steep slope, woodland, wetlands and flood hazard areas whose disturbance should be discouraged. Accordingly, land use regulations should establish development standards that require a minimum contiguous developable area for lots. Site design standards should limit the disturbance of environmentally critical features. Development standards should encourage the conservation of quasi-public open space and recreation areas through cluster provisions.

Land Use - Prior land use planning and regulation have produced stable residential neighborhoods and commercial districts. The character of these areas and their suitability for particular uses can best be provided for by maintaining established residential and commercial land use patterns and through the prudent application of regulations which assure that future development, redevelopment, or expansion occurs at reasonable levels of intensity. Standards compatible with the existing character of development are needed to restrict the coverage of lots by buildings, impervious surfaces, driveways, and parking areas. Within commercial districts, floor area ratio controls should be applied to control the intensity of commercial uses.

Main Street - Valley Road Corridor - The improvement and revitalization of commercial and residential areas within the Main Street - Valley Road Corridor should continue to be the focus of municipal efforts and design review standards to encourage a unified building appearance, conservation of historic structures, streetscape, and parking improvements. Municipal support for commercial and residential rehabilitation should be continued as part of the long term public commitment to maintain and improve this area.

Economic Development - Development which creates employment opportunities and beneficial commercial activity should continue to be encouraged where it is compatible with adjacent land use, sensitive environmental features, and the need to maintain adequate facilities, services, and circulation patterns.

## CIRCULATION PLAN ELEMENT

The circulation plan element of the Master Plan describes existing and proposed transportation components including roadways, bus, rail and air facilities. The roadway circulation system in West Orange has changed little since the opening of Interstate Route 280 in June 1973 except for new streets resulting from land subdivision and improvements to existing roadways. The following addresses the components of the circulation plan element as shown on Figure 15.

### Streets and Highways

West Orange's streets and roads are classified in accordance with the Uniform Functional Classification of streets established by the United States Department of Transportation, Federal Highway Administration in conjunction with the New Jersey Department of Transportation. Roadways are classified under this system according to the primary functions they perform. The classification system allows for road design and improvements to be tailored to function. The Master Plan identifies the location and type of streets and roadways in the Township. The Functional Classification System applied to West Orange is defined below:

#### 1. Freeways or expressways

Freeways or expressways are high-speed, high capacity, limited access highways devoted entirely to the movement of motor vehicles and provide no direct access to abutting properties. Design features include the separation of opposing traffic lanes by a continuous center barrier or median strip and full access control and grade separation at intersections or interchanges which are generally widely spaced.

There is one freeway located within West Orange Township. This is Interstate Route 280 which links Route 80 with Newark, the Garden State Parkway and the New Jersey Turnpike. Access is afforded by the entrances and exits located on Northfield Avenue, Prospect Avenue and Pleasant Valley Way. I-280 is under the jurisdiction of the New Jersey Department of Transportation.

#### 2. Principal Arterial Highways

Principal arterial roads serve as major feeder roads to and from freeway systems and carry major movements of traffic between the principal traffic generators in the region.

Principal arterial roads usually have four or more traffic lanes and provide direct access to the abutting properties, a secondary function which interferes with the flow traffic. They are usually intersected at grade and utilize time traffic signals, jug-handle intersections, center barrier and lane markings to facilitate traffic flow. The minimum right-of-way for a primary arterial road

should be 80 feet (80'), with 120 feet (120') being the desirable width. The roadway system in West Orange contains one principal arterial roadway Mount Pleasant Avenue. From Livingston to its intersection with Prospect Avenue, the roadway is under the jurisdiction of the New Jersey Department of Transportation as State Highway 10. From Prospect Avenue to Main Street, it is under the jurisdiction of Essex County.

### 3. Minor Arterial Roadways

Minor arterial roads generally connect collector streets with primary arterial roads and freeways and often serve as alternate routes for principal arterial roads. Like principal arterial roads, they are characterized by direct land access and grade intersections, but carry less traffic and often have only one lane in each direction.

Minor arterial roads should have a minimum right-of-way width of 66 feet with two moving traffic lanes in each direction. Where possible, the desirable right-of-way width for minor arterial roads is 100 feet (100').

The minor arterial roads in West Orange, with the exceptions noted, are under the jurisdiction of Essex County and are listed below:

Northfield Avenue (Essex County #508) which extends west to east from Livingston along the South Mountain Reservation to Main Street.

South Valley Road which extends from the intersection of Forest Hill Road and Rollinson Street to the Township's southern boundary. South Valley Road is a municipal street.

Valley Road which extends from the intersection of Northfield Avenue and Main Street to the Orange boundary. Valley Road is a municipal street.

Main street which extends from the intersection of Eagle Rock Avenue and Harrison Avenue to the Orange boundary.

Prospect Avenue which extends north to south from the northern boundary to Northfield Avenue.

### 4. Collector Streets

Collector streets provide access between local streets and principal and minor arterial roads. They also provide access to abutting properties and carry traffic from residential neighborhoods to arterial roads.

Where practical and appropriate based upon surrounding land uses, collector streets should have a minimum right-of-way width of 60 feet (60'). Where

collector streets carry relatively high traffic volumes, a minimum right-of-way width of 80 feet (80') is desirable, although physical constraints and existing conditions would result in a modification of this goal.

Streets of West Orange which are classified as collector streets under the jurisdiction of Essex County are listed below:

Pleasant Valley Way

Gregory Avenue

Eagle Rock Avenue

Park Avenue

Washington Street

5. Subcollector Streets

Subcollector streets are not included within the Functional Classification of Roads but are based upon classification established by the West Orange Planning Board. Subcollectors feed traffic from residential neighborhoods to roads of higher classification. In most instances, subcollector streets also provide access to adjoining properties. The desirable minimum right-of-way width for subcollector streets is sixty feet (60'). Present streets in West Orange which are classified as subcollector streets are under municipal jurisdiction and include the following:

Walker Road

Harrison Avenue

High Street

Valley Way

Woodland Avenue

Marion Drive

Rooney Circle

6. Local Streets

Local streets have the primary function of providing access to abutting properties. They also serve as easements for various public utilities and provide light and air to adjacent buildings. Local streets should have a minimum right-of-way width of fifty feet (50').

All streets within West Orange not previously mentioned are local streets and under municipal jurisdiction.

## Public Transportation

Public transportation is provided within the Township of West Orange by area bus companies including New Jersey Transit. In addition, the Orange Station of New Jersey Transit provides rail service to Hoboken and ultimately Mid-town Manhattan via the Path connection.

New Jersey Transit bus service within the Township includes four routes with Newark as its terminus: Newark and West Caldwell; Newark and Orange; Newark and Livingston; and Newark and Butler. NJT also maintains a route between Fanwood and New York City as well as a local route between East Orange and Montclair. In addition, DeCamp Bus Lines maintains routes between Verona and Bloomfield, and between New York City and Montclair; and the Community Transit Company serves a route between Livingston and New York City. Bus routes within West Orange are shown on Figure 10.

In addition to bus route service, community park and ride facilities are provided at the West Orange Arena and at Main Street and Harrison Avenue.

Air transportation facilities are available at Newark and New York Metropolitan Airports. Taxis, limousines, and handicapped transportation services are available from private carriers within the West Orange area.

## Circulation Needs

The circulation needs within West Orange are primarily related to traffic increases and peak hour intersection congestion along the Prospect Avenue Corridor, maintenance and improvement of the existing local street system, and neighborhood parking deficiencies.

Because of peak hour traffic congestion and the prospect of substantial traffic increases generated by new development impacting Prospect Avenue, Essex County retained Ebasco Services to do a transportation study of the Prospect Avenue Corridor. The study was completed in March 1988. [The Technical Advisory Committee which directed preparation of the report included representatives from the Township of West Orange Department of Public Works]. The report identifies needed improvements within West Orange to accommodate travel demand to 1992. These are listed on Table 16. They include road widening and additional lanes, intersection and signalization improvements, and the creation of an impact fee district to finance the needed improvements. The identified improvements would be on the road network under the County's jurisdiction. Since New Jersey case law restricts county government requirements for road impact fees to those developments which have direct access to a county road, one of the recommendations of the study is that Essex County and West Orange establish common provisions and a fee schedule to cover improvements to both municipal and county roads within the impact area. Related to this corridor, the West Orange Engineer's office has identified Marion Drive and Rooney Circle as local roads which should be considered for future widening and improvement.

Other circulation problem areas which have been identified include peak hour congestion at the intersections of Eagle Rock Avenue and Pleasant Valley Way, Pleasant Valley Way and Mt. Pleasant Avenue, Prospect Avenue and Mount Pleasant Avenue. The I-280 Northfield Avenue interchange, Gregory Avenue and Walker Road. The Township Engineer has identified a deficiency of on-street parking within the more intensively developed older residential neighborhoods within or adjoining the Main Street-Valley Road Corridor. To address the situation, the Public Works Department has utilized vacant public lots to create small off-street parking lots.

The Engineer's office has also identified short-term parking as a problem along the Main Street Business District and the commercial area of Pleasant Valley Way and Eagle Rock Avenue.

The other major circulation need within the Township is maintenance of the local road network. The Public Works allocates approximately \$100,000.00 annually for road resurfacing. This is supplemented by Community Development Block Grant Funds and New Jersey Department of Transportation Trust Funds.

TOWNSHIP OF MILBURN

TOWNSHIP OF MAPLEWOOD

VILLAGE OF SOCIETY

ORANGE

CITY OF ORANGE

VILLAGE OF VERONA

MONTCLAIR

# TOWNSHIP OF WEST ORANGE

ESSEX COUNTY, NEW JERSEY

FIGURE 10

## PUBLIC TRANSPORTATION ROUTES

- BUS ROUTE BY NEW JERSEY TRANSIT
- BUS ROUTE TO NEW YORK CITY

ROUTE #	ROUTE NAME	COMPANY
15	FANWOOD-NEWARK-NEW YORK CITY	NEW JERSEY TRANSIT
15	NEWARK-BUTLER EXPRESS	NEW JERSEY TRANSIT
21	ORANGE (W. ORANGE-E. ORANGE-NEWARK)	NEW JERSEY TRANSIT
33	W. CALDWELL-NEW YORK CITY (CALDWELL-VERONA-MONTCLAIR-GLEN RIDGE-BLOOMFIELD)	DECAMP BUS LINES
64	E. ORANGE-MONTCLAIR	NEW JERSEY TRANSIT
66	MONTCLAIR-W. ORANGE-NEW YORK CITY	DECAMP BUS LINES
73	NEWARK-LIVINGSTON	NEW JERSEY TRANSIT
77	LIVINGSTON-NEW YORK CITY (BLOOMFIELD-NEWARK)	COMMUNITY TRANSIT CO.
144	NEWARK-W. CALDWELL	NEW JERSEY TRANSIT

SOURCE: ESSEX COUNTY TRANSIT GUIDE 1983



BASE MAP PROVIDED BY TOWN ENGINEER AND REVISED BY TOWNPLAN ASSOCIATES, 1988.



REGISTERED PROFESSIONAL ENGINEER, RES. BARR, N.J. (1981) 174-0000  
29 MAH STREET, DOVER TOWNSHIP, TOMAS ROVER, N.J. (1981) 240-1000  
1520 SOUTH MAIN STREET, PLEASANTVILLE, N.J. (1981) 688-8211

## COMMUNITY FACILITIES, UTILITIES, AND RECYCLING ELEMENT

The community facilities and utilities plan element of the Master Plan considers the government services and related facilities necessary to meet the safety, health, education, and general welfare needs of present and future Township residents. Included in this analysis are public schools, library, police, fire, rescue squad, public works, water supply, sewerage, and storm drainage facilities. The location of existing and proposed facilities is shown on the Master Plan Map (Figure 15).

### Public Schools

Since the last update of the Master Plan in 1978, decline in total enrollment within the West Orange Public School system has continued. Enrollment for the 1987/1988 school year stood at 4,061, down from 6,213 in 1978 (Table 17). This declining enrollment, which school officials expect to stabilize at an enrollment level of 4,000 has been accompanied by a reduction in the number of schools operated. In 1968, the West Orange Public School system consisted of two high schools, three junior high schools and nine elementary schools. Total enrollment in that period was the double the present level. Today, the Public School system is comprised of one high school, two junior high schools and six elementary schools. (Table 18). These facilities have a pupil capacity of 5,838. Surplus school property has either been sold, leased or been adapted to another use within the West Orange School system. Two public school buildings have been sold and now operate as private schools. These are the Solomon Schecter and the Seton Hall Preparatory School. A third school has been renovated and become the school district's central administration offices. A fourth school has been leased to a private school program and is now operated as the Essex Valley School. The school district retained ownership of this facility in the event that increasing enrollment or other conditions require its activation.

A former junior high school complex has also been retained by the school district and made part of the West Orange High School.

The facilities improvement plan which the school district is pursuing emphasizes the maintenance and upgrading of the remaining active schools within the system (Table 18). For the immediate future, the system has adequate capacity to handle the projected enrollments and no expansion of the system is required. (See Table 19, Capacity by Grade Level, and Table 20, Projected Enrollment by Grade Level Organization). However, recent approvals of residential developments may have some impact upon enrollment levels as new units are constructed and occupied. There will be a need to monitor such changes and their relationship to facility needs.

## Police

In 1988, the Police Department consisted of 95 Police Officers. This compares to a force of 82 police officers noted in the 1965 Master Plan Report, Part I.

The West Orange Police Department is located at 66 Main Street in the Town Hall. The police facilities are considered inadequate and a new police facility is proposed in the Municipal Plaza area.

In addition to routine police services, the Department provides several crime prevention programs including training in security for both commercial and residential uses, self-protection, vehicle safety and narcotic programs. The Department also provides lectures in local schools on subject such as driving while intoxicated, narcotics, bicycle safety, pedestrian safety and child abuse. The Police work closely with the Neighborhood Watch Program which reports suspicious persons or activity in their area. Crime prevention tips are published in the West Orange Chronicle and crime prevention messages are distributed in flyers to local merchants.

## Fire Protection

West Orange has a full-time paid Fire Department supported by auxiliary firemen. The Township is serviced by four fire stations: Station No. 1 is located at 415 Valley Road, Station No. 2 is located at Washington Street, Station No. 3 is located on Ridgeway Avenue, and Station No. 4 is located on Pleasant Valley Way. Each station is located in one of four fire districts which have been designed to achieve minimum response time to any location.

A brief description of each station's equipment is listed below:

Fire Station No. 1 (Valley Road) - This station houses one 1975 Hahn Pumper Truck rated at 1,250 gallons per minute and one 1975 Hahn, 85 foot platform truck.

Fire Station No. 2 (Washington Street) - This station houses one 1981 Grumman Pumper Truck rated at 1,000 gallons per minute and one 1963 Mack Pumper Truck (held in reserve) rated at 1,000 gallons per minute.

Fire Station No. 3 (Ridgeway Avenue) - This station houses one 1972 Hahn Pumper Truck rated at 1,250 gallons per minute, and one 1984 fast action pumper rated at 250 gallons per minute as well as one 1980 International Conversion Van (Rescue Truck).

Fire Station No. 4 (Pleasant Valley Way) - This station houses one 1985 Pirsch Pumper Truck rated at 1,250 gallons per minute, one 1970 Lord LaFrance Pumper Truck rated at 1,250 gallons per minute and a 1975 Seagraves 100 foot (100') aerial ladder truck.

In 1987, the West Orange Fire Department had a total of 87 personnel including administrative and administrative support personnel. Fire fighting personnel were broken down into four tours of duty of 20 men each except for Tour 4 which has 21 men.

The Department is part of a mutual aid network which includes all contiguous municipalities. During 1987, the Department responded to 1,567 alarms, 34 of which were in response to mutual aid requests.

In addition to fire fighting services, the West Orange Fire Department maintains a Fire Prevention Bureau which is responsible for fire code enforcement, public education and fire investigation. For the last two years, the Fire Prevention Bureau has utilized computer systems for fire safety inspections and recently upgraded that system to improved data availability. In addition, in 1987, a new computer system was added enabling West Orange to conform with the New Jersey Uniform Code by converting it to the National Fire Incident Reporting System.

In 1987, upgrading of the Department included:

A new public address system which replaced a 30 year old system used for transmitting emergency and non-emergency communications between fire stations.

A new radio based station as well as other various radio equipment devices.

The purchase of additional number of personal alarm devices which are designed to automatically activate when a person becomes incapacitated or disoriented in hazardous areas.

The completion of a hazardous material incident response course by 15 fire fighters, which was offered by the United States Environmental Protection Agency.

The continuation of an on-going program to rehabilitate the water distribution system by the replacement of old undersized water mains and old two way hydrants.

The introduction of an Emergency Medical Technician Program (EMT) into the Fire Department.

Future plans for the Department consist of the scheduling of a First Aid and Cardiopulmonary Resuscitation Program for all personnel as well as the continuation of the Hazardous Material Incident Response Program.

### Rescue Squad

The Rescue Squad building is centrally located within the municipality and Mount Pleasant Place. It is a volunteer organization comprised of approximately 75 to 80 active members certified by the State as Emergency Medical Technicians (EMT). In addition, members are required to be certified in Cardiopulmonary Resuscitation (CPR) every year. There is a need to maintain adequate membership to provide effective coverage. Daytime coverage has been the most problematic given that many volunteers must work day jobs.

The squad owns and operates four vehicles. It provides service 24 hours a day, 7 days a week, responding with at least 2 and sometimes 3 members. Duty crews are required to cover their shifts at the Rescue Squad Building and are dispatched directly from in-house. In 1987, the squad averaged 3,500 calls with most of the calls being generated within West Orange. The squad will, however, provide mutual aid and respond to calls outside of the community if aid is requested.

The rescue squad is housed in a municipally owned building considered adequate for existing equipment and providing service to West Orange residents. The squad has indicated that some improvements to the building could be made if funds became available.

### Library

The West Orange Main Library is located at 46 Mount Pleasant Avenue across from the Municipal Plaza. There is a branch known as Tory Corner Branch housed within the West Orange Community Center located at 242 Main Street.

The Main Library is open 7 days per week. Operating hours are Monday, Wednesday, and Thursday 10:00 A.M. to 9:00 P.M., Tuesday and Friday, 10:00 A.M. to 5:30 P.M. and 9:00 A.M. to 5:00 P.M. on Saturday and 1:00 P.M. to 5:00 P.M. on Sunday. In 1988, the Library had a total of 115,000 volumes, with an annual circulation of 162,000. A variety of services are available to members and residents, these include circulating videos, phonographic records and tapes. Program offerings include a summer reading program available to children in the second grade to seventh grades; a story hour designed for pre-school children with two 10 week sessions. The first session week begins in October and the second in February.

The Tory Corner Branch Library located on Main Street is open Monday through Friday, 2:00 P.M. to 5:00 P.M. In 1988, the branch library had a total of approximately 1,000 volumes.

General urban planning standards suggest that libraries serving a population of from 35,000 to 100,000 should stock two volumes per capita up to 175,000 volumes total. The general site requirements for a library location include ease of access with location on a main road and near a business district, a shopping district being preferable. The Township library satisfies these minimum standards.

The Board of Trustees of the Library has established a planning committee consisting of trustees, citizens, and library staff. The committee is presently devising a plan for the library. Among the issues which the committee is addressing are the shortage of parking at the main library building, the desirability of additional satellite branches in other locations of the town, improving student access to the library, and serving residents who lack transportation to the library. Overall, the library is seeking to improve the level of service it provides to the Township residents.

### Public Works

The Township's Public Works Department is located in a new facility on Lakeside Avenue which includes offices, garage and storage space vehicles and equipment. Public Works also maintains a composting and recycling yard off of Mount Pleasant Avenue.

### Potable Water Supply

Potable water for West Orange Township is provided by the New Jersey American Water Company (formerly known as the Commonwealth Water Company). The New Jersey American Water Company currently supplies water services to approximately 14,700 residential and commercial customers located within West Orange. Daily water usage ranges from between five to nine million gallons per day (with nine representing the summer peak usage and five representing the minimum usage during the winter). There are several sources for West Orange's water supply. Water received through the Passaic Valley Booster is purchased from the Passaic Valley Water Commission, which in turn receives its water from the Wanaque Monksville Water Duct. Water received through the White Oak Ridge Booster (located in Millburn) is obtained through various artesian wells and the Passaic River. Infrequently, water is also received from the Canoe Brook via the Gregory Avenue Booster Station. It should be noted that West Orange receives equal amounts of water through the Passaic Valley Booster and the White Oak Ridge Booster Stations.

Figure 11, "Water Facilities Map" shows the major potable water infrastructure within the Township. This map shows the location of 6", 8", 10" or larger water lines, pumping stations and water storage facilities. The major water facilities located in West Orange include two water storage tanks: the West Orange standpipe, which has a total capacity of 2.3 million gallons and is located on Murcell Avenue, and the Second Mountain standpipe which has a total capacity of 1.5 million gallons, and is located at the intersection of Manger Road and Lorelei Road. An in-ground reservoir with a total capacity of 1 million gallons is located on Gregory Avenue. There are three pumping stations: Passaic Valley Booster Station, located on Pleasant Valley Way; Eagle Rock Booster Station, located on Greenwood Avenue; Gregory Avenue Booster Station, located on Gregory Avenue adjacent to the in-ground reservoir.

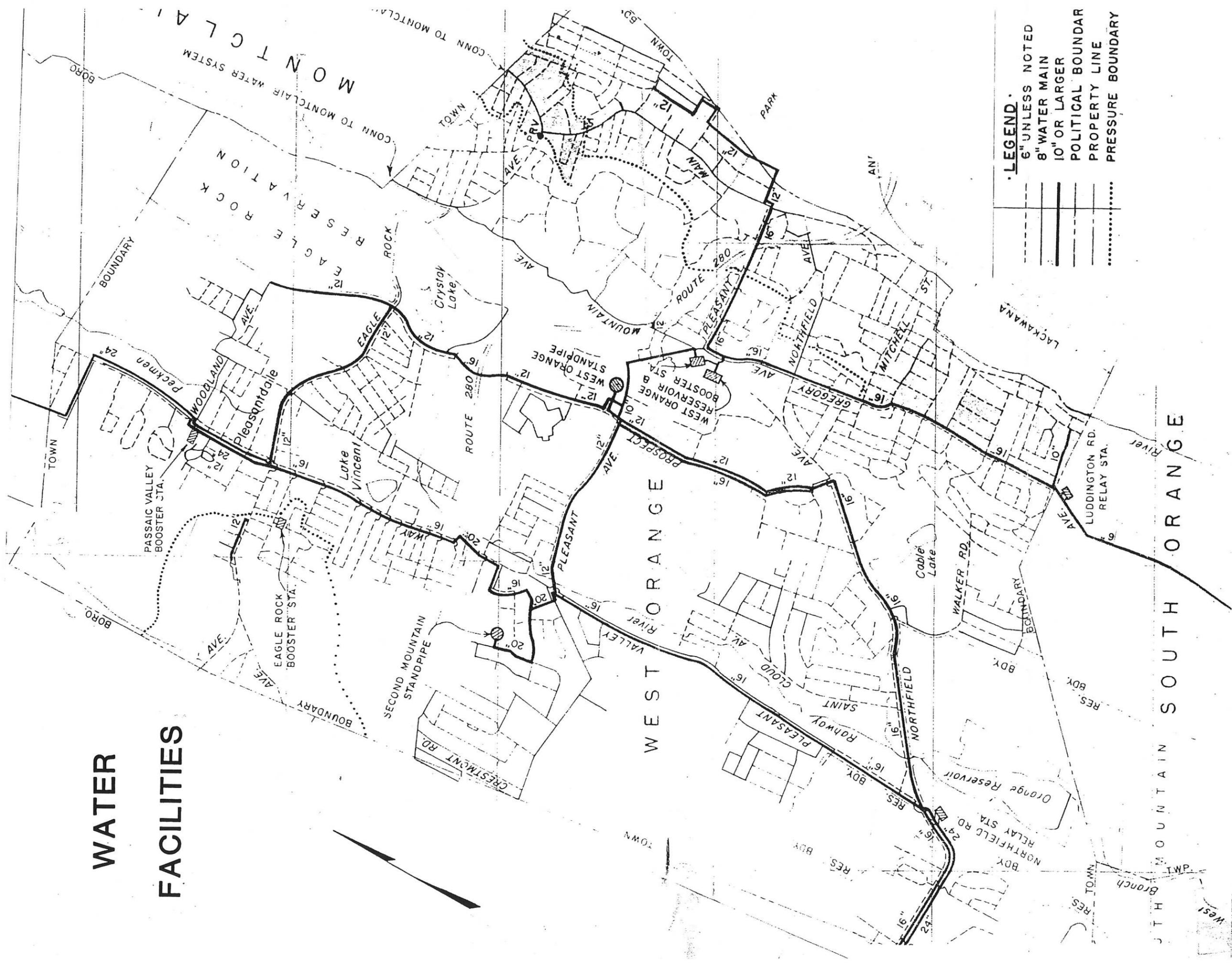
At this time, the New Jersey American Water Company reports that the existing facilities and water supplies are adequate to supply West Orange's present water needs, and no major construction projects are proposed.

### Sanitary Sewer Facilities

West Orange is a member of the regional sewer system known as the Joint Meeting. The Joint Meeting maintains and operates one waste treatment facility located in Elizabeth which is run by the Joint Meeting Commission.

There are a total of eleven member municipalities which comprise the Joint Meeting. Membership includes West Orange, Hillside, Irvington, Maplewood, Millburn, Newark, Roselle Park, South Orange, East Orange, Summit and Union. In addition to the eleven member municipalities, the Joint Meeting has two municipal customers, the City of Elizabeth which is a customer through Millburn, and New Providence which is customer through Summit.

# WATER FACILITIES



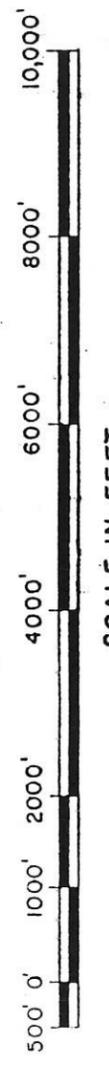
**LEGEND**

- 6" UNLESS NOTED
- 8" WATER MAIN
- 10" OR LARGER
- POLITICAL BOUNDAR
- PROPERTY LINE
- PRESSURE BOUNDARY

PREPARED BY:

Townplan Associates, October 1988

SCALE 1"=2000'



SCALE IN FEET

SOURCE: THE NEW JERSEY AMERICAN WATER COMPANY

FIGURE 1

The Joint Meeting Waste Treatment Facility has a total capacity of 75 million gallons per day. In 1987, it operated at an average daily flow of 66 million gallons per day. It is estimated that about 15 percent of the treated effluent is industrial and the remaining 85 percent is domestic. As a member of the Joint Meeting, West Orange has no waste treatment facilities of its own but maintains and operates its own sewer collection system which connects with the Joint Meeting through South Orange. In addition, to this connection with the Joint Meeting, certain sections of West Orange are connected to the Orange Sewer System via an outlet at Lakeside Avenue and the Orange and West Orange border.

Because of existing flow problems, a sewer ban was imposed by the State of New Jersey in 1986 on the areas of West Orange tributary to the westerly interceptor. To correct this problem, West Orange has undertaken various sewer rehabilitation projects. These include the construction of the Millburn Gravity Trunk Line and the Cherry Lane Pumping Station, which are both expected to be completed in 1988. In addition, plans have been proposed to reconstruct and modify the Vitro interceptor and Pumping Station, Mayfair Pumping Station, Corewell Pumping Station and the construction of a new (Northfield Avenue) pumping station to be completed by 1990.

Although there are a few areas presently not serviced by the sanitary sewer system, the present improvements and future rehabilitation projects should enable all areas to have access to the sanitary sewer system.

#### Storm Drainage and Flood Control

Portions of West Orange have a history of localized flooding. In order to deal with this problem several projects have been undertaken. These include drainage improvements to the East and West Branch of Rahway River and improvements to the storm drainage facilities in the Merklin district located on the second mountain. Future proposed plans include replacement of the storm sewer system in the Mayfair District where a low lying area collects stormwater. Other areas that have been identified as having flood problems during significant rainfall include areas adjacent to the west branch of the Rahway River between Northfield and Mount Pleasant Avenues, in the vicinity around Tompkins and Stockman Streets near the Orange border, and the St. Cloud District where drainage improvements that are needed are being studied. In addition to drainage improvements, West Orange maintains a stream cleaning policy where all brooks and rivers are cleared at least once per year.

### Solid Waste Disposal

At the present time, West Orange's trash and garbage collection is contracted out to White Brothers, a private waste disposal company. Collection service is provided to all residential areas within the Township with the exception of major private developments and commercial enterprises.

Since August 1, 1987, as mandated the State of New Jersey, all local landfills have been closed and the responsibility for solid waste disposal has been placed on Essex County. Since then, West Orange has been required to send all of its solid waste to County transfer stations located in Newark. The solid waste is then transferred to landfills located in Pennsylvania, West Virginia, and Ohio at an approximate tipping cost of \$100.00 per ton. Prior to August 1, 1987, West Orange disposed of its solid waste in landfills located in Kearney and North Arlington at an approximate tipping cost of \$20.00 per ton.

To deal with the solid waste problem, Essex County began construction of a trash recovery plant in December 1987, located near the Passaic River and Blanche Street in Newark. The plant is expected to be completed sometime in 1990.

### Other Utilities

Other utilities include gas and electric services provided by the Public Service Electric and Gas Company which has its main office in Newark and a branch office located at 308 Main Street in Orange; telephone service provided by the New Jersey Bell Telephone Company; and Cable Television Services provided by Suburban Cablevision, which has a main office on East Orange Avenue in South River.

### Recycling

The New Jersey Statewide Mandatory Source Separation and Recycling Act, adopted in 1987, requires that a municipal plan include a recycling element which incorporates State recycling goals for solid waste. Moreover, it requires that municipal development regulations controlling site plan and subdivision approval include provisions which ensure conformity with a municipal recycling ordinance.

This element of the Master Plan describes the existing and proposed recycling activities of West Orange and recommends the adoption of subdivision and site plan regulations to assure that future development is designed to accommodate the recycling of solid waste.

## The Municipal Recycling Program

West Orange has had a recycling program since 1974. In compliance with the State's Recycling Act, the Township has adopted a municipal recycling ordinance which mandates the recycling of materials from residential properties. The Township program requires the separation and recycling of glass, and newspapers. A 1988 amendment to the recycling ordinance requires the recycling of leaves. In future, recycling of oil and aluminum will also be required. It is also recommended that provisions be made for the recycling of "white metal" appliances such as refrigerators, washers, and dryers.

The Township collects recyclable materials from all residential properties. The Township also collects recyclables from small commercial uses. Larger commercial uses are responsible for making private arrangements for collection. In future all commercial and institutional uses will also be required to recycle.

The municipal recycling program is managed by the Division of Waste Management. Collection of materials is provided by the Department of Public Works. In addition to collection, the Township maintains drop-offs for recyclables at each firehouse. Township property on Mount Pleasant Avenue serves as a storage area for recyclables and for the composting of leaves and grass. A composter will be acquired by the Township to process composted materials.

### Recommendations for Recycling Provisions within Subdivisions and Site Plan Regulations

In order to ensure that future development is designed to accommodate the recycling of solid waste, the site plan and subdivision regulations of the Township should require the following:

1. Each application for residential development must include provisions for the collection, disposition, and recycling of recyclable materials. Each single family unit or unit within a two-family dwelling should provide at least twelve square feet of floor area conveniently arranged and located as a holding area for a four week accumulation of materials. Such an area may be within a laundry room, basement or garage. Each multi-family unit or accessory dwelling unit must provide at least three square feet of area conveniently arranged and located to hold a one week accumulation of recyclable materials. Each multi-family complex must also provide bins in a convenient location or locations in a common area as drop-offs for storing recyclables until collection occurs. The holding area shall provide for truck access and loading and shall be suitably screened from view and setback from property lines.

2. Each application for a nonresidential use which utilizes 1,000 square feet or more of land must include provisions for the collection, disposition and recycling of recyclable materials. Each application shall quantify the amount of recyclable material it will generate as part of its weekly operation including newspapers, white high-grade paper, glass, and aluminum. The application shall provide a storage area sized to contain a one week accumulation of recyclable material. The storage area shall be designed for truck access for pick up of materials and be suitably screened from view if located outside a building.

In addition to subdivision and site plan review requirements, it is recommended that the Township require that new construction not subject to site plan or subdivision review also be designed to accommodate the recycling of solid waste.

## ECONOMIC PLAN ELEMENT

The West Orange economy is dominated by service and retail uses, as reflected in statistical data from the U.S. Bureau Census and from the New Jersey Department of Labor and Industry. The Township sits astride Interstate 280. Its future economic development is influenced by this location which has been identified by the Rutgers University Center for Urban Policy Research as one of the nine principal corridors in the State for future employment growth.

### Economy

The commercial economy within West Orange is characterized by personal service, retail, and financial business establishments. In 1980, West Orange had a total of 448 line items of property assessed as "commercial property", including retail, service, and general business uses. Forty-eight parcels were assessed as "industrial property" and only one property in the municipality was assessed as "agricultural".

In 1987, the New Jersey Department of Labor identified 1,035 major employers covered by New Jersey Unemployment Insurance in West Orange. Businesses were categorized in accordance with the United States Office of Management and Budget Standard Industrial Classifications (S.I.C.). Table 21, "1987 Business Summary: West Orange" categorizes West Orange business by related major S.I.C. Group Codes on a percentage of the total businesses each group represents. Service establishments represent 41.2 percent of all covered businesses in West Orange in 1987. These include a large number of business and personal service establishments, legal offices and medical offices. Retail establishments such as clothing and specialty stores, restaurants and eating establishments account for 18.6 percent of the business in the municipality. Financial establishments including depository institutions, nondepository credit institutions, holding companies and investment firms represented 5.5 percent of all businesses. Real estate establishments represented 6.1 percent of the businesses.

### Employment Trends

As State employment rates climbed to a record high in 1986 and unemployment dropped to the lowest rates since 1970, West Orange also experienced rapid rates of employment growth. The Township experienced a 37.3 percent increase while Essex County only experienced modest employment growth at 3.9 percent between 1976 and 1986. A comparison of population growth and covered employment growth is presented in Table 22, "Employment Growth: 1976 - 1986". This table also shows that the ratio of population to covered employment remained stable for the County (2.66), while the municipality and State ratio (2.44 and 2.58 respectively) declined between 1976 and 1986.

Private sector covered employment for the period 1976 through 1986 is presented in Table 23, "Private Sector Covered Employment: West Orange, Essex County and New Jersey". The ten year trends indicate general economic growth for West Orange and the State of New Jersey.

Table 24, presents the private sector covered employment by job category in 1979 and 1987. It shows that the dominant economic base has shifted from the combined industries of retail/wholesale and manufacturing to the service industry. Retail/wholesale and manufacturing declined from the combined total of 60.5 percent in 1970 to 30.5 percent in 1987. In contrast, services have increased by 28.7 percent reaching a total of 45.0 percent in 1987. Transportation remains stable at 2.1 percent, while construction decreased modestly from 8.7 percent to 4.5 percent.

In comparison, Table 25, "Private Sector Employment Growth by Job Category 1970 - 1987, Essex County", indicates that Essex County has experienced an increase of 114.4 percent in the service job category. Unlike the municipality, finance, insurance and real estate jobs have decreased in the County by 11.8 percent.

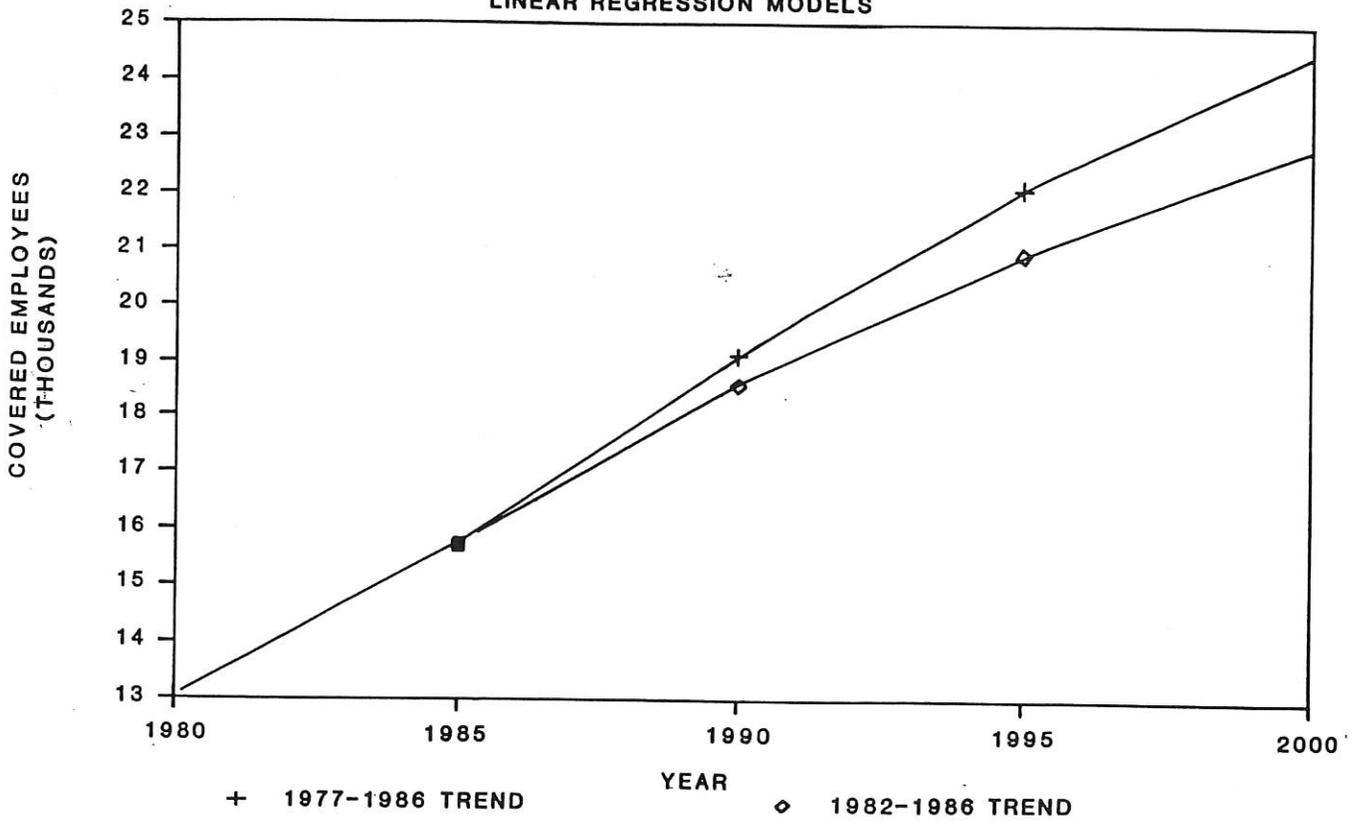
#### Employment Projections

Table 26, "West Orange Employment Projections to the Year 2000" and Figure 12, "West Orange Employment Projections" illustrate possible future employment scenarios. These projections are based on the linear regression analysis of two historical trends. The first projection is based on ten year data from 1977 to 1986 and the second trend is based on data from the five year period 1982 -1986. The five year trend projects less of an annual increase in private sector covered employment than the ten year trend. For the Year 1990, the ten year trend projects a total of 19,127 jobs in West Orange while the five year trend projects 18,612 jobs. Similarly, for the Year 2000, the ten year trend projects 25,124 jobs or 1,802 more jobs than the five year trend which projects 23,322 jobs.

FIGURE 12

### WEST ORANGE EMPLOYMENT PROJECTIONS

LINEAR REGRESSION MODELS



### Commuting Patterns

Table 27, "Commuting Patterns Residential Labor Force West Orange and Essex County" indicates that 68.0 percent of West Orange residents are employed within Essex County, while 25.5 percent are employed within the State but outside Essex County and 6.5 percent are employed out of the State. This compares to the County figures of 65.7, 27.3 and 7.0 percent respectively.

In 1980, 87.6 percent of West Orange workers travelled by private vehicle to work, 6.9 percent travelled by public transportation, 3.5 percent walked and 1.6 percent worked at home. These figures contrast with the County figures of 74.1 percent, 17.4 percent, 6.7 percent and 1.1 percent respectively. This data is presented in Table 28, "Means of Transportation to Work, Residential Labor Force, West Orange and Essex County".

### Occupational Distribution and Income Levels

In 1980, West Orange residents were predominantly employed in managerial, professional, administrative support and sales occupations, with each of these categories accounting for more than 13 percent of total employment. (Table 40)

A comparison of the Township's and County's share of the major occupational groups reveal several variations. West Orange has a greater percentage of managerial, professional, administrative/clerical, and sales employees while the County percentages are higher in the technical, service and skilled labor occupations (Table 41).

The percentage of the West Orange population which is not currently in the work force is 35.4 percent. This is lower than the County percentage of 39.1 percent and slightly lower than the State percentage of 37.2 percent. Table 29, "1980 Economic Indicators: West Orange, Essex County and New Jersey" presents a summary of economic and demographic information. West Orange household and family income levels were significantly higher than either of the County or the State, the basically equal household and family size translate to a higher per capita income and, therefore, more disposable income. Monthly rents and home values were considerably higher for West Orange than for Essex County and the State.

### Economic Outlook

Largely as a result of the influence of the Interstate 80/280 growth corridor and the pivotal role of the highway system in influencing development locations, West Orange can expect continued employment growth particularly in the service industries. Headquarters and administrative offices, research and development firms, warehousing and distribution are expected to provide expanded employment. However, job growth within the region may ultimately be constrained by high housing costs.

West Orange should pursue a strategy of economic development which encourages growth consistent with infrastructure capacity and the ability to maintain adequate community facilities and services. While market forces generate development within areas of the municipality accessible to the Prospect Avenue Corridor, municipal efforts are needed to encourage economic development and continued rehabilitation within the older business districts and neighborhoods of the Main Street/Valley Road Corridor area. Available public programs and incentives for such development should be pursued here. Such programs include the following:

#### Community Development Block Grant Program

Block grant funds are Federal Aid distributed through the Essex County Community Development Office. A variety of activities are eligible to improve the living environment, housing, and expand economic opportunities, business districts and residential neighborhoods. Funds, for example, may be used for facade improvements to commercial buildings. West Orange should continue to coordinate its efforts with Essex County so that a portion of these funds are utilized to stimulate economic development in the Main Street Valley Road corridor area.

#### Neighborhood Preservation Program

This program, administered by the New Jersey Department of Community Affairs, provides grants for the restoration of threatened but viable neighborhoods. Improvements to the sidewalks and storefronts in a business district and adjoining residential areas can be undertaken as part of an effort to improve a defined neighborhood.

#### Neighborhood Preservation Balanced Housing Program

This program, also administered by the Department of Community Affairs, provides loans and grants to create affordable housing for low and moderate income people in viable neighborhoods. Funds can be used for new construction, conversion, or rehabilitation. Municipalities are the only eligible applicants for this program although a municipality may designate another public, private, or nonprofit entity as part of its application.

## HISTORIC PRESERVATION PLAN ELEMENT

The historic preservation element identifies landmarks of historical, archeological, cultural, scenic, or architectural significance to the community and proposes means for their utilization or preservation. A landmark may be any real property, man-made structure, or natural object which meets the local plan's standards for assessing the worthiness of the site.

The landmark sites and locations listed in this element are based on properties identified in the New Jersey or National Registers of Historic Places. In addition, the Essex County Department of Planning and Economic Development completed a historic site survey of the Township in 1986. It identified two additional potential National Register Districts - the Forest Hill Road Historic District, and the St. Cloud Historic District - as well as additional properties which are significant. A summary of the Essex County survey appears on Table 43.

### Landmark Sites

The following sites are designated landmarks within West Orange and are shown on the Preservation Plan Element (Figure 15). These sites have been listed on the State or National Registers of Historic Places and documentation supporting their significance is on file with the Office of New Jersey Heritage, Department of Environmental Protection:

#### Edison National Historic Sites

Main Street, between Alden and Lakeside Avenues and Glenmont Estate,  
Honeysuckle Avenue - Llewellyn Park

#### Fire Station

Washington Street

#### St. Mark's Episcopal Church

13 Main Street

#### Llewellyn Park Historic District

In addition to the register properties, site in West Orange listed in the Essex County historic sites inventory are considered as designated landmarks for the purpose of local preservation planning.

### Landmark Designation Standards

The following standards are to be used for evaluating the significance of properties and their eligibility for landmark status in West Orange:

- (1) The landmark is associated with events that have made a significant contribution to the broad patterns of local, state or national history; or
- (2) The landmark is associated with the lives of persons significant in our past; or
- (3) The landmark embodies the distinctive characteristics of a type, period, or method of construction, or that it represents the work of a master, or that it possesses high artistic values, or that it represents a significant and distinguishable entity whose components may lack individual distinction; or
- (4) The landmark has yielded, or may be likely to yield, information important in prehistory or history; or
- (5) The landmark exhibits a combination of scenic, historical, architectural, or archaeological or cultural features which make a unique contribution to the townscape of West Orange.

#### Utilization and Preservation Alternatives

West Orange's landmark sites are currently utilized as dwellings, churches or public buildings. The Township should initiate a program to identify and preserve landmark sites within West Orange. In order to encourage appropriate utilization and preservation efforts, the Township should consider the following measures:

Community Education Program - The Township may sponsor a program which educates community residents and makes them aware of the location and significance of landmark features. Such a program might include recognition through the award of landmark certificates to owners of landmark properties, information distribution through the Township or special publications newsletter, and sponsoring programs and events.

Rehabilitation and Renovation - Municipal or County programs which provide funds for the rehabilitation of dwellings or commercial buildings that are designated landmarks should follow landmark preservation guidelines. Such guidelines have been developed by the U. S. Department of the Interior and published as the Secretary of Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

Development Review - The impact of public or private projects on landmark sites should be a factor in evaluating the design and layout of development proposals. Appropriate language may be included within the Township's development regulations to require that an applicant's environmental impact statement detail how the project has considered alternatives that respect landmark sites.

Zoning Designation - The zoning ordinance may designate landmarks, and historic sites and delineate landmark districts. It can provide landmark design criteria and guidelines to be used to regulate the development or alteration of landmark properties.

Historic Preservation Commission - The Township Council may create a Historic Preservation Commission. Such a Commission would have responsibility under the Municipal Land Use Law (N.J.S.A. 40:55D-107) to compile a survey of historic sites, give advice on the preservation plan element of the Master Plan and on applications for development, and also carry out educational programs. If the zoning ordinance of the town also designates and regulates landmarks and districts, then the Commission would have powers to grant or deny permits for the development or alteration of the designated sites.

## HOUSING PLAN ELEMENT AND FAIR SHARE PLAN

The Housing Plan Element and Fair Share Housing Plan for West Orange is based upon the requirements of the Fair Housing Act which became effective on July 2, 1985 (C.222 Law of 1985) and the Municipal Land Use Laws as amended by Chapter 222 of the Laws of 1985. The West Orange Housing Plan Element is designed to achieve the goal of access to affordable housing and to meet present and prospective housing needs, with particular attention to low and moderate income housing. (See Table 38 for Low and Moderate Income limits for Essex County). This Housing Plan Element incorporates a Fair Share Plan which will be undertaken for the period 1988 - 1993 to provide opportunities for low and moderate income housing within the municipality. Estimates of housing need are provided by the Council on Affordable Housing (COAH), the State agency which administers the Fair Housing Act.

### Housing Stock Characteristics

Housing stock characteristics in West Orange include the total number of housing units, age of housing, ownership, value and condition of housing units. According to the 1980 Census, West Orange had a total of 14,410 housing units. Between 1980 and 1986 it is estimated that an additional 582 units were added to the housing stock for a total in January 1987 of 14,992 units. West Orange's housing stock can be characterized as relatively old. More than 40 percent of the municipality's housing units existing in 1980 were built prior to 1940. (See Table 30, Age of Housing Units). An analysis of 1980 Census data and Building Permits between 1980 and 1986 indicates that currently 5,887 units (39.3 percent) were built prior to 1940; 1,624 units (10.8 percent) were built between 1940 and 1949; 3,732 units (24.9 percent) were built between 1950 and 1959; 2,061 units (13.7 percent) were built between 1960 and 1969; 1,106 units (7.4 percent) were built between 1970 and March 1980 and 582 units (3.9 percent) were built between April 1980 and December 1986. (See Table 31, Building and Demolition Permits 1970-1987).

In 1980, 97 percent of the occupied housing units in West Orange were owner-occupied while three (3) percent were rental units. The 1980 median value of owner-occupied housing was \$70,900. The 1980 median gross monthly rent was \$276.

Housing which is affordable to low and moderate income households can be extrapolated from the 1980 Census Data. Based upon the 1980 Census, 3.2 percent of the renter-occupied units in West Orange were affordable to low income households in the Northeast Housing Region (Region 2) which consists of Essex, Morris, Sussex and Union Counties. These are households which earned approximately 50 percent or less of the median income level. In addition, 18.7 percent of the rental housing units in West Orange were affordable to moderate

income households in the Northeast Housing Region. These are households earning between 50 percent and 80 percent of the median income in the Northeast Housing Region. Of the owner-occupied units, none were affordable to low income households and only 0.2 percent were affordable to moderate income households in the Housing Region.

The housing stock in West Orange is generally in good condition. Table 32, "Condition of Housing", indicates that West Orange had relatively few substandard units in 1980 according to the U.S. Census. The municipality, in 1980, had 407 units lacking central heating; 102 units lacking complete kitchen facilities and 212 units lacking complete plumbing facilities. In accordance with the Council on Affordable Housing methodology, COAH has identified an indigenous housing need of 247 deficient housing units occupied by low and moderate income households within the municipality.

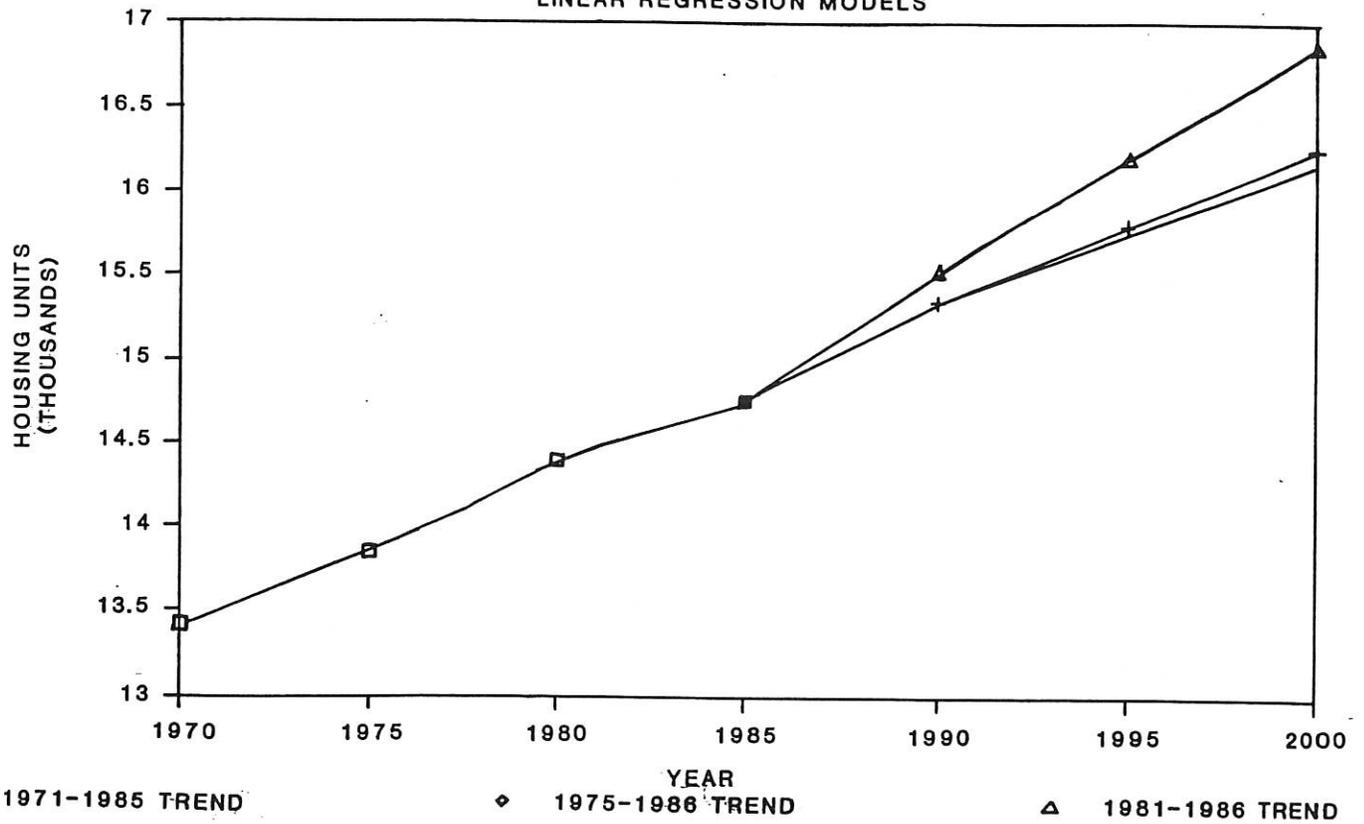
#### Projections of Housing Stock: 1987 - 1993

The total number of housing units in West Orange has increased by 8.3 percent between 1970 and 1980, from 13,304 units in 1970 to 14,410 units in 1980. Table 33, and Figure 13 (Housing Projections: West Orange) show projections of historical growth trends using 14, 10 and 5 year data. These projections indicate continuing growth in the housing stock. However, these projections will be tempered by the availability of vacant land and environmental constraints. The projected yearly increase in the West Orange housing stock ranged from 85 to 136 new units per year. The 14 and 10 year trends are very similar, while the 5 year trend reflects a building surge since 1980. Actual housing construction is dependent upon a variety of factors over which the municipality has little control, including financing, marketing and builder timing.

FIGURE 13

### WEST ORANGE HOUSING STOCK PROJECTIONS

LINEAR REGRESSION MODELS



## Demographic Characteristics

Demographic characteristics of the West Orange population in 1980 were recorded in the 1980 Census of population. The U.S. Census divides the total population by race into white and non-white categories. West Orange population is predominantly white with 5.3 percent comprising the non-white categories. The median age of West Orange residents in 1980 was 37.9 years, with 29.7 percent of the population being over 55 years of age and 22.3 percent being under age 18. The characteristics are presented in Table 34, "Population Profile -1980".

The municipality had a total of 14,027 households in 1980 with an average of 2.76 persons per household. Only 9.8 percent of the heads of households were classified as female. This data is presented in Table 35, "Household Profile - 1980".

Income characteristics and projections for the municipality in 1980 as presented in Table 36, indicates that slightly less than one-third of the West Orange households had incomes over \$35,000. per year, and nearly one-half earned between \$15,000. and \$35,000. Slightly more than one-quarter of the municipal households earned less than \$15,000.

In 1988, income estimates and 1993 projections show a significant increase in the number of households with incomes above \$40,000. and significant decreases for the other income categories.

## Population Estimates and Projections

The New Jersey Department of Labor, Division of Planning and Research, Office of Demographic and Economic Analysis, prepares annual estimates of resident populations for municipalities, counties and the State. Table 9, "Population Estimates: 1981 - 1986" compares these estimates. The estimates show a change in the growth pattern experienced in the previous decade with West Orange and the State increasing in population, while Essex County decreases. The change in West Orange population growth can be explained by the increase in construction of new housing in the municipality since 1984.

Table 10 shows 1988 population estimates and 1993 projections for West Orange and Essex County. The municipality's 1988 estimates show a 4.4 percent increase compared to a 1.3 decrease for the County since 1980. West Orange's population is expected to increase by 6.4 percent between 1980 and 1993 and by 2.0 percent between 1988 and 1993. In comparison, Essex County is projected to decline by 1.6 percent between 1980 and 1993 and by 0.3 percent between 1988 and 1993.

### Existing and Probable Future Employment Characteristics

According to the 1980 Census data, the percentage of managerial and professional employees in West Orange (34.2 percent) exceeded that of the County (24.7 percent) and of the State (25.8 percent). Also, West Orange has a significantly higher percentage (13.4 percent) of residents in the "sales" occupation category, compared to Essex County (8.86 percent) and New Jersey (9.9 percent).

Private sector covered employment data for West Orange, Essex County and New Jersey indicates between 1976 and 1986 the increase in jobs covered by unemployment insurance (covered jobs) in West Orange was significantly higher than Essex County or the State of New Jersey. In 1976, West Orange had a total 12,184 covered jobs. This climbed to 16,728 covered jobs by 1986, representing a 37.2 percent increase. In comparison, Essex County covered jobs only increased by 3.9 percent. The State of New Jersey's increase was 30.0 percent for the same period.

Table 26, "West Orange Employment Projections to the Year 2000", illustrates possible future scenarios. These projections are based on the linear regression analysis of two historical trends. The first projection is based on ten year data from 1977 to 1986 and the second trend is based on data for the five year period of 1982 - 1986. The five year trend projects less of an annual increase in private sector covered employment than the ten year trend. For the Year 1990, the ten year trend projects a total 19,127 jobs in West Orange, while the five year trend projects 18,612 jobs. Similarly, for the Year 2000, the ten year trend projects 25,124 jobs or 1,802 more jobs than the five year trend which projects 23,322 jobs.

Determination of Pre-Credited Present and Prospective Fair Share For Low and Moderate Income Housing

West Orange has reviewed the Council on Affordable Housing "Municipal Determination of Pre-Credited Need" dated May 1, 1986. Based upon COAH's methodology for the determination of pre-credited need, the present need and prospective need has been calculated as follows:

A) Indigenous Need + Reallocated Need = Present Need

$$247 \quad 319 \quad = 566$$

B) Present Need + Prospective Need = Total Need

$$566 \quad 379 \quad = 945$$

C) 

Total	Demo-	(Residen	- (Spon	- Pre-	
Need	+ litions	- tial Con-	taneous	Rehab.)	Credited
		- Filtering	version)		Need

$$945 \quad + \quad 22 \quad - \quad (205 \quad + \quad 56 \quad + \quad 32) \quad = \quad 673^*$$

\* (Addition and subtraction calculations reflect 674, but COAH's list of May 21, 1986 indicates West Orange's pre-credited need equals 673).

Municipal Adjustments

Adjustments to the municipal fair share due to available land capacity, public facilities, infrastructure, and to assure adequate active municipal recreation can be made to eliminate specific parcels of land for consideration as sites for low and moderate income housing. Using an existing land use survey undertaken in 1988, vacant land and quasi-public open space in parcels of two acres or more were identified (See Figure 14 and Table 37). Exclusive of approved development sites and quasi-public open space which has been developed for use as member-owned country clubs and golf courses, or as restricted open space within Llewellyn Park, a private residential development which has been nominated to the National Register of Historic Places, the Township of West Orange has an estimated 353.7 undeveloped acres in parcels of two acres or more. This estimate excludes vacant environmentally sensitive acreage of wetlands, flood hazard areas, and steep slopes on these parcels. It should be noted that the topography of undeveloped sites in West Orange merits particular consideration because of the sloping conditions.

Under COAH's rules, West Orange may reserve three percent of its total developed and developable acreage, minus existing municipal recreation lands, for active municipal recreation. This acreage can be excluded from consideration for lower income housing sites. Within West Orange, an additional 167 acres can be reserved for municipal recreation.

Using the criteria for adjustments, the land supply available for development is 187 acres. This calculation is made as follows:

- A. Existing Land Areas = 7776 Acres.
- B. Existing Undeveloped Lands  
Constrained by Steep Slopes,  
Wetlands, Flood Hazard Areas = 124 Acres
- C. Existing Municipal Recreation  
(Excludes School Facilities) = 70.5 Acres
- D. Existing Available Developable  
Land = 353.7 Acres

Developed and Developable Acreage = A-B = 7652 Acres

Reserved Municipal Recreation Lands =  
(7652 x .03) - C = 159 Acres

Since 159 acres of the remaining developable land supply can be reserved for municipal recreation approximately 187 acres (353.7 - 159 = 194) can be considered as available for further development.

Using inclusionary zoning at a density of six dwelling units/acre with a 20 percent set-aside of low and moderate income households would yield 224 low and moderate income households. [(194 acres x 6 DU) x .2 = 232 dwelling units].

Since the low and moderate income housing yield using the standard mandatory set-aside approach would be 232 dwelling units, the Township's fair share of the reallocated present need and the prospective need should be adjusted downward to reflect that capacity.

The Township's adjusted reallocated present and prospective fair share need should be 232 dwelling units.

## Credits

Credit for meeting the fair share obligation can be taken for lower income housing units created or rehabilitated after April 1, 1980. Under COAH's rules, credits are applicable when a dwelling unit's occupancy is restricted to low and moderate income households and when controls to maintain the unit's affordability are in place. Rehabilitations are only credited if the work brings a substantial unit up to code requirements. Income limits are shown on Table 38. The Township of West Orange has a municipal program of housing rehabilitation in place. The program, originally established with Community Development Block Grant funds, operates as a revolving low interest loan program. There is a limit of \$5,000. on the loan amount which is secured by a second mortgage. Since April 1, 1980, seven (7) units have been rehabilitated as part of this program. The Township should take credit for this rehabilitation work. The Township also has a program which offers Section 8 housing assistance. However, COAH does not credit a Section 8 existing housing program.

There are also within West Orange, three lower income senior citizen rental projects - Fairmont House, Degnan House, and the Jewish Federation Plaza. Of these, ten (10) units within the Degnan House and 134 units at Federation Plaza became available for occupancy after April 1, 1980. Credit can be taken for a total of 144 rental units of these two projects.

The Essex County Community Development Program also funds housing activities within West Orange that are eligible for credit. These include a Home Improvement Program (HIP) to rehabilitate single and two-family dwellings and a rental rehabilitation program in which 70 percent of the units done in a project must be affordable to low and moderate income persons. Since April 1, 1980, 219 dwelling units have been improved under the HIP program in West Orange. The County projects that in future it will rehabilitate 26 units per year in West Orange. There are two active rental rehabilitation projects, one on Northfield Avenue and one on Wheeler Street which will produce six (6) lower income units.

## Determination of Fair Share

Based upon the adjustments identified and spontaneous rehabilitations, West Orange's low and moderate income housing obligation for the period 1988 to 1993 is calculated to be 215 units of indigenous need (247 units-32 spontaneous rehabilitations = 215 units) plus 232 dwelling units of reallocated present need and prospective need. The Township's total obligation is 447 low and moderate income dwelling units (215 + 232 = 447). Against indigenous need, credit should be given to the thirteen units

rehabbed under municipal programs. Past and projected County rehabilitations can address the balance of the Township's indigenous need of 202 units. Against present and prospective need, credit should be given for 144 units at Degan House and Federation Plaza. Thus, the present and prospective need after credits is 88 units (232-44=88).

### Consideration of Lands Appropriate for Construction of Low and Moderate Income Housing

Preparation of the Housing Element has included consideration of lands appropriate for the construction, conversion, or rehabilitation of low and moderate income housing.

With respect to the inventory and analysis of vacant land (see Table 37, Vacant Land Inventory Two Acres and Greater), it has been determined that 353.7 acres of vacant land in non-contiguous parcels of two acres or more are available and developable. Other lands have been determined to be inappropriate sites due to the following:

- 1) Environmentally sensitive features including flood hazard areas, freshwater wetlands, or steep slopes.
- 2) Prior development approvals in place
- 3) Existing recreational use as a private, member-owned country club and golf course.

Given the limited supply of developable land in West Orange and its location and distribution in a number of noncontiguous parcels adjacent to developed residential neighborhoods, the most appropriate route for the Township to pursue in meeting its fair share obligation for low and moderate income housing is through conserving the existing supply of low and moderate income housing within West Orange, and by constructing affordable senior citizen housing on one or more available parcels. Construction of senior citizen housing would allow for the more efficient use of smaller parcels accessible to community facilities, bus routes, and shopping. The following locations should be considered for development of senior citizen housing:

1. Tory Corner - Potential locations within Tory Corner should be investigated because of the proximity to the Main Street corridor and the convenient access to services.
2. Eagle Rock Avenue - Northwest of Pleasant Valley Way between Cliff Street and Shrum Place.
3. Woodland Avenue and Pleasant Valley Way area.

4. Eagle Rock Avenue and Forest Avenue area.

Providing for Low and Moderate Income Housing

In order to provide its fair share, the Township will undertake a program which continues rehabilitation and also undertakes new construction of senior citizen housing. The program components are described below:

Rehabilitation - The Township, through its housing rehabilitation program, and through the Essex County Community Development Program, can meet its indigenous need by rehabilitating units within West Orange. The Township should coordinate with the County to assure that the program is structured to improve housing units to code standards. The units will be subject to affordability controls and the capital costs spent on rehabilitation will average \$8,000. per unit.

Affordability controls will run for six (6) years for rehabbed owner-occupied units and for ten (10) years for rental rehabilitated units.

Senior Citizen Housing - The rules of the Council on Affordable Housing permit a housing plan to age restrict 25 percent of the housing need after credits and adjustments. COAH's rules also permit that up to 20 percent of the need, after adjustments, credits, and providing for indigenous need, may be credited at the rate of 1 1/3 units for each rental unit created. Using these criteria, West Orange proposes 72 senior citizen rental units as part of its housing plan. These 72 units would be entitled to a bonus credit that equate to 77 dwelling units. The calculations follow:

A. Credited indigenous need = 202 units

B. Adjusted and credited reallocated  
Present and Prospective need = 88 units

---

C. TOTAL = 290 units

D. Age restricted or senior citizen units are limited to 25 percent of need after credits and adjustments.

.25 x 290 = 72.5 or a maximum of 72 age restricted units.

E. Up to 20 percent of need after adjustments, credits and providing for indigenous need may be credited at the rate of 1.333 units for each rental unit produced.

.2 X 88	=	17 units
17 X 1.333	=	22 units
22 - 17	=	5 bonus credits

F. 72 rental senior citizen units + 5 bonus credit = 77 units.

Regional Contribution Agreement - West Orange will transfer eleven (11) units, through Regional Contribution Agreements (RCA) with one or more municipalities in the housing region. The RCA will be structured in accordance with the Fair Housing Act and COAH's rules. Presently, the following municipalities in Region 2 have informed COAH that they intended to enter into RCA's as receiving municipalities:

East Orange  
Montclair  
Newark  
Orange  
Boonton  
Dover  
Linden  
Plainfield

The estimated cost of a transfer is \$15,000. per unit or \$165,000. The transfer will be phased and the costs distributed over the period 1988-1993.

Financing - The Township will consider a number of sources for funding rehabilitation, senior housing construction, and Regional Contribution Agreements. The Township will dovetail its municipal rehabilitation program with the rehabilitation work available through the Essex County Community Development Program to meet rehabilitation goals. It is also recommended that the Township provide through its development regulations a mechanism to obtain contributions to a municipal fund to produce or rehabilitate low and moderate income housing. Such a regulation could offer density or floor area bonuses to market rate developments when such developments contribute to the municipal housing fund.

#### Alternative to Regional Contribution Agreements

In the event West Orange cannot secure agreements with receiving municipalities to transfer its housing obligation, the Township will zone to permit, as a conditional use, the creation of accessory apartments for income-eligible households within detached single family residences.

There are an estimated 9,308 detached single family dwellings within the Township. (8,779 detached housing units with one unit in structure in the Township in 1980 according to 1980 U.S. Census of Population, plus 529 detached single family dwellings authorized in the Township from 1980 through 1986 according to New Jersey Residential Building Permits). According to the formula established by COAH policy, a conversion rate of one-half of one percent times six years would yield a maximum of 279 units. Accessory apartments would be permitted in single family residence zones. Conditions would be established to assure that the units produced are compatible with neighborhood character, provide adequate off-street parking, are suitably sized, and limited to not more than one per primary dwelling unit. Certificates of Occupancy are required prior to the rental or re-rental of any residential unit in the Township. This procedure will be amended to include an annual recertification of the unit's qualification for affordability and tenancy.

Units created under this program would be subject to a ten year affordability control. The number of conversions permitted for the planning period would be capped off at the number required to make up for any short-fall in the transfer agreements.

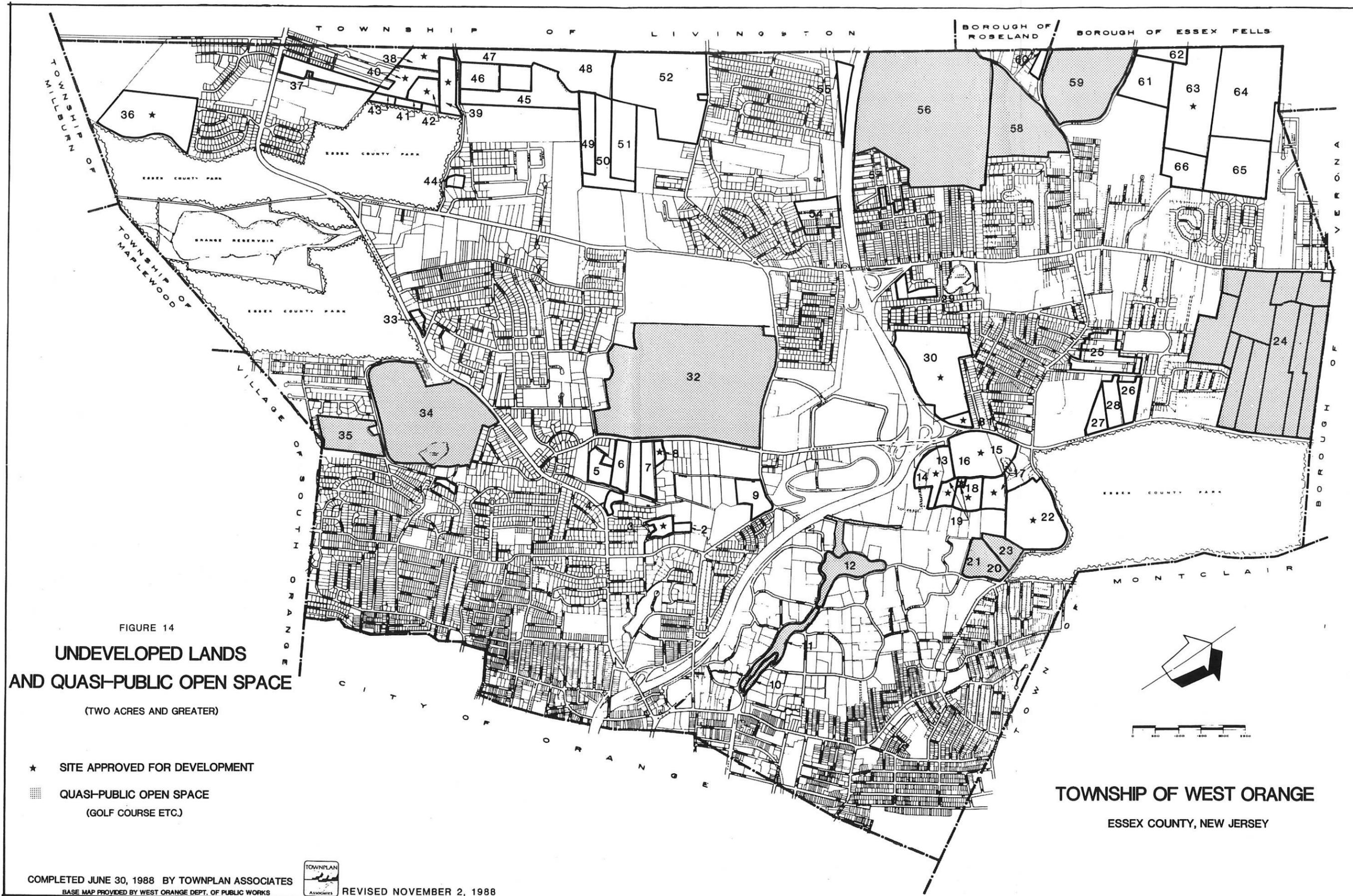
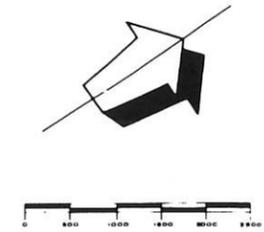


FIGURE 14

**UNDEVELOPED LANDS  
AND QUASI-PUBLIC OPEN SPACE**

(TWO ACRES AND GREATER)

- ★ SITE APPROVED FOR DEVELOPMENT
- ▨ QUASI-PUBLIC OPEN SPACE  
(GOLF COURSE ETC.)



**TOWNSHIP OF WEST ORANGE**  
ESSEX COUNTY, NEW JERSEY



## RECREATION AND CONSERVATION PLAN ELEMENT

West Orange Township has an extensive amount of park, recreation, and open space largely due to several major County and quasi-public recreation facilities within the municipality. In 1988, designated public and quasi-public parks, recreation, conservation and designated open space areas totalled 1,787.7 acres which represents 23.0 percent of the total Township land area.

A comparison of public and quasi-public park, recreation, and open space lands in West Orange is listed below:

	<u>ACRES</u>
West Orange Township	70.5
Essex County	993.1
Federal (Thomas A. Edison National Historic Site)	8.7
Quasi-Public Open Space and Recreation	<u>715.4</u>
TOTAL	1,787.7

### Municipal Recreation Facilities and Programs

Presently, the Township has a variety of parks and recreation facilities which include the Colgate Field, Byrne Park, Lafayette Park, Jenkins Park, Rolling Green Hills, Stagg Field, Boland Park, O'Connor Park, Joseph G. Minish Park and Degnan Park. These parks and facilities are maintained by the Township of West Orange Department of Recreation located at 66 Main Street. Activities found on these parks include baseball/softball, basketball, football, tennis, playground equipment, ice skating, handball, soccer, racquetball, swimming and weight lifting facilities. An inventory of municipal recreation facilities is shown on Table 39. Overall within the community, the municipal recreation facilities are in good condition and cared for by a routine maintenance program. In addition to the recreation facilities, the Recreation Department utilizes private facilities such as local golf clubs, churches and bowling alleys to augment Department facilities and programs.

The recreation activities sponsored by the municipality include concerts, a summer camp for special children; bowling leagues for all West Orange youths, Grades 3 through 9, youth swimming lessons, a league swim team, playground programs, and various sport programs including clinics for children.

Activities geared for senior citizens include bingo offered at the St. Marks Church, senior citizen picnic, swim program and golf tournament.

## Recreation and Open Space Needs

The Essex County Parks Department has proposed a regional trail, called the Lenape Trail, which would link public open spaces in Essex County and eventually connect to the Patriot's Path in Morris County. West Orange should cooperate with the County to implement the Lenape Trail.

The State of New Jersey's Outdoor Recreation Plan was issued November 1984 by the New Jersey Department of Environmental Protection. The N.J.D.E.P. plan provides balanced land use guidelines for preserving open space at the municipal, county and State levels and also identifies recreation activities in Essex County which will require additional facilities to meet future demand.

The open space guidelines are:

Municipal Level	3% of the developed and developable area of the State
County Level	7% of the developed and developable area of the State
State Level	10% of the area of the State
Federal Level	4% of the area of the State.

Using these guidelines, the existing dedicated municipal recreational areas in West Orange fall short of the suggested acreage standard for the municipal level by an estimated 159 acres. It should be noted that the developable area calculation excludes slopes in excess of 12 percent and wetlands. Additional Township owned properties to be reserved for future recreation or open space development are shown on Figure 14.

With respect to recreation facilities within Essex County, the DEP plan identifies swimming, boating, fishing, hiking, bicycling, horseback riding, tennis, baseball and softball, soccer and football, golf, and picnicking as activities whose popularity will result in additional facility needs through the Year 2000. General standards for recreation and open space development utilized by the National Recreation and Park Association are shown on Table 40.

## Conservation Areas

Although, West Orange's natural features have been altered by development, it retains areas of steep slope, stream corridors, flood hazard areas, freshwater wetlands, and surface waters which should be conserved and regulated to limit disturbance and unfavorable impacts to the community. These sensitive features are shown as part of the Conservation Plan Element on Figure 15.

The rationale and appropriate actions for conserving these features is reviewed in this section.

## Steep Slopes

Slopes limit the use of land and is an important consideration in land use planning. Slope is given in percent and is expressed by vertical change over distance. (For example, a 10 foot elevation change over 100 feet horizontal distance (10/100) is a ten (10) percent slope.) Steep slopes increase the cost of grading, and can require more sophisticated footings and pilings to support high density dwellings. Slope is also a prime factor in runoff and erosion. The steeper the slope, particularly over ten (10) percent, the greater the erosion hazard. Where steep slopes are denuded of vegetation, adjacent land and water bodies may be inundated with sediment during each rainstorm. Among the results are losses of wildlife, water quality, and an aesthetic landscape.

On the positive side, slopes can be used to separate different components of the landscape and can be used creatively in site designs for subdivision, parks and commercial or industrial areas. At the same time, slopes are good reflectors of sound and can be used effectively in noise attenuation.

All slopes greater than ten (10) percent pose problems in designing roads and driveways. When denuded of vegetation, slopes greater than ten (10) percent fail to form small surface depressions or swales, which trap sediment. This makes these steep areas highly erodible and poses hazards to adjacent areas, which could be inundated with sediment. Fairly steep slopes of ten to fifteen (10-15) percent can provide creative sites for plantings and structures; however, installation of walks and utilities is costly and requires runoff and erosion management techniques. Slopes greater than fifteen (15) percent are potentially critical environmental impact areas. On these slopes, the soils are often thin and have low natural fertility. For most purposes, they should be left in their natural condition or maintained in grass or tree cover.

While recognizing that large areas of steep slopes have already been developed, the Township's regulations should incorporate standards to control further steep slope development.

## Stream Corridors

Stream corridors are relatively narrow strips of land that are located on either side of a stream.

While stream corridors may be related to floodplains, they can be considered a special type of land and therefore demand a special land use policy. Portions of the corridor may lie in the flood-plain and become inundated at times of high water. Upland wetlands

(swamps, marshes, and bogs) may be found along the corridor which are unsuitable for development but highly suitable for water-loving types of wildlife and vegetation.

The lands along a stream serve as a nutrient trap for nitrates and phosphates which are being washed down from upstream sources. Retention of these nutrients and their use in vegetative growth along the stream prevents eutrophication problems in downstream impoundments.

Preservation of vegetation along the stream banks can avoid large increases in stream temperatures which may affect aquatic life.

Where possible, stream corridors should be protected by design standards requiring buffers at least sixty-five (65) feet wide between the limits of disturbance and the stream bank. The buffer should be wide enough to include the 100 year floodplain and slopes which exceed ten (10) percent. The buffer area should be protected through deed restrictions and conservation easements required as a condition of local development approval. However, where development has already encroached into a corridor, buffering requirements and development restrictions should be modified to recognize the urban character of the area.

## Freshwater Wetlands

Freshwater wetlands are vital links in the ecological system. Wetlands are typically delineated on the basis of these parameters:

Hydrology - soil is inundated either permanently or periodically at mean water depths less than or equal to two meters, or soil is saturated to the surface at some time during the growing season of the prevalent vegetation.

Vegetation - prevalent vegetation consists of plant species adapted to anaerobic soil conditions.

Soil - soils present have been classified as hydric, or they possess characteristics that are associated with anaerobic soil conditions.

Freshwater wetlands identified by the U.S. Department of the Interior within West Orange have been mapped in this Plan's Background Studies. However, New Jersey's Freshwater Wetlands Act, which pre-empts local regulation of wetlands, will result in a more extensive mapping program to identify additional wetlands. West Orange should require that future subdivision and site plan applications locate on plans or plats those wetlands which are the subject of State regulations.

#### Flood Hazard Areas and Surface Waters

The flood hazard areas of West Orange which have been identified and mapped by the Federal Emergency Management Agency (FEMA) should be the subject of local floodplain regulations that control construction consistent with the National Flood Insurance Program. Moreover, municipal design standards for subdivisions and site plans should require that, where feasible, development prone to flood damage be located outside of the flood hazard area.

## LAND USE PLAN ELEMENT

### Concept

West Orange is a mature suburban community whose land use patterns and supporting public facilities and services are largely established. The supply of available developable land within the community continues to diminish as residential and commercial growth in the 1980's reverses the population decline and regional economic stagnation of the 1970's.

In contrast to recent development, the Township's older commercial and residential areas require increasing attention and maintenance as public infrastructure and facilities continue to age.

Simultaneously, the Township has had to fashion programs to encourage revitalization of the Main Street - Valley Road Corridor; manage new corporate office park and residential development on the Prospect Avenue Corridor; and remedy sewerage problems which forestalled development in the western portion of the Township. Largely as a result of a strong regional and local economy, the prospects for continued development within West Orange are good. This land use element, while reinforcing the Township's existing scheme of zone districts and density standards, provides recommendations for addressing the land use issues which are likely to continue to challenge the Township.

### General Land Use Recommendations

#### Zoning

West Orange's Land Use Plan, on Figure 15, reflects the existing development pattern. The plan supports the present scheme of zone district categories and the standards which are now applied to control population density and the intensity of use. There are, however, several recommendations which will enhance the ability of the zoning scheme to achieve the Master Plan's objectives. These recommendations are to:

1. Provide for density bonuses for single family development in the R-1 and R-2 Zone Districts as an incentive for developer contributions to a Township fund reserved for the production of low and moderate income housing. Standards should restrict the increase in developable lots to not more than twenty five (25) percent above what conventional platting would yield. The developers contribution could be based upon the value of the bonus lots created. To prevent intrusions into developed neighborhoods, density bonus provisions should be applied only to larger undeveloped tracts of land.

2. Provide floor area bonuses to nonresidential development to as an incentive to make voluntary contributions to a Township fund reserved for the production of low and moderate income housing. Since the Township obligation to provide for such housing is related to job creation, the contribution should be based upon the increase in employment resulting from the development.
3. Enact environmental performance standards to control development and restrict the disturbance of remaining sensitive natural features including steep slopes, mature woodlands, and stream corridors. Standards should limit the permissible disturbance or clearance within an area containing a defined environmental feature. In addition, subdivision standards should require that each lot created include a minimum area unencumbered by environmental constraints.
4. Allow for residential clusters as a conditional use option within the R-1 and R-2 Districts to encourage the preservation of recreation areas and open space. Such a conditional use option should restrict the number of dwellings to the number or achievable under a conventional platting. A condition of the cluster would be the requirement of a high open space ratio. Forty (40) percent or more of the total tract area would be required to be set aside as dedicated open space. Open space should meet minimum acreage and dimension requirements and disallow small scattered parcels. Open space should be interconnected and a cluster project should yield at least five acres of open space. The open space layout should incorporate natural assets such as parks, attractive woodlands, and stream corridors. However, unbuildable areas, such as detention basins or retention basins, utility easements, floodways, wetlands, steep slopes, and surface water should be given only partial credit as open space acreage.
5. Enact floor area ratio controls to regulate building intensity within commercial districts. Although the commercial areas are largely developed or approved for development, older suburban areas commonly experience pressures to redevelop or expand commercial sites. Floor area ratio controls will set a precise limit on a building's size by limiting floor area based on lot size. The floor area ratios should be set to maintain the existing land use pattern at present levels of intensity.
6. Continue to apply design controls within the Main Street Valley Road Corridor.

## Future Land Use and Zoning

Existing land uses, lot patterns, and continuity of municipal land use policies provide the major basis for the future land use plan (Figure 15). The development suitability of major undeveloped tracts of land has been reviewed. Recommendations affecting the future zoning and development of specific areas of the Township are discussed below.

### Single Family Residential

Single family development in West Orange has been classified into six different districts with minimum lot sizes ranging from 6,000 square feet to 80,000 square feet. As reviewed in the existing land use study, the R-6, R-5, R-4, and R-3 Residential Districts represent the existing development patterns of these neighborhoods. No change is proposed to their delineation except an area adjoining Llewellyn Park. The R-2 District, requiring 40,000 square foot minimum lot sizes, has been applied to the quasi-public recreation areas and to larger undeveloped tracts containing woodlands, stream corridors, slopes and wetlands. Within the R-2 Districts, the general recommendations for clustering, environmental performance standards, and a minimum buildable lot area would be effective in obtaining development layouts that were environmentally sensitive and preserved open space. The R-1 Districts, requiring 80,000 square foot minimums, have been applied to neighborhoods of existing large lot development, most notably Llewellyn Park, and to areas with environmental constraints.

### Two Family Residential and Multi-Family Residential

The Two Family Residential Districts, R-T, and the four Multi-Family Districts, R-G Garden Apartments; R-M Apartment Houses; RC Townhouses; PURD Planned Unit Residential Development, have been applied to locations which are developed or have been approved for development under these zoning regulations. No changes are being proposed to these districts. The Housing Element has identified three alternative locations for multi-family development for low and moderate income senior citizens. These three locations should be investigated further and when a final site selection is made, the appropriate zoning should be applied.

## Commercial

The commercial locations in West Orange have been established and are largely developed or approved for development. They have been classified into office (OB-1 and OB-2); office research (O-R); retail business (B-1 and B-2); and shopping center (P-C) districts. The classifications reflect existing or approved development patterns. The Township's major concentration of office and retail activity is at the interchange of Interstate 280 and Prospect Avenue. This has been the primary location for new commercial development and expansion within the Township. An older commercial area exists along the Main Street/Valley Road Corridor. The area has been and should continue to be the subject of public efforts to encourage revitalization. Other secondary locations of commercial development have been established along the sections of the Township's arterial and collector roadways including Northfield Avenue and Pleasant Valley Way. While the land use plan does not alter the boundaries of the commercial districts, it does recommend establishing floor area ratio standards to control further commercial development within the office, retail, and shopping center districts. The ratios should be set to maintain development at present levels of intensity.

## Industry

Manufacturing and industrial uses within West Orange are confined to the older portions of the community adjoining the City of Orange. The Industrial District, I, reflects established uses within these areas.

## STATEMENT OF PLANNING RELATIONSHIPS

Preparation of the West Orange Master Plan has included a review of the plans of several government agencies. By law, the Township must include a policy statement on the relationship of the Township plan to these plans. The municipalities for which a policy statement is required are Orange, Montclair, Verona, Essex Fells, Roseland, Livingston, Millburn, Maplewood and South Orange. Statements are also required for the Master Plan of Essex County, and the State Development and Redevelopment Plan.

The policy of the Township is to ensure that the Township development of West Orange does not conflict with the development and welfare of neighboring municipalities, the County, and the State as a whole. An analysis of the West Orange Plan shows that it is compatible with the plans of adjoining municipalities, the County, and the State.

### Municipal Plans

**Township of Millburn** - The Master Plan of the Township of Millburn was originally adopted September 28, 1977 and revised in June 1985. The area of Millburn Township adjoining West Orange has been planned and developed for low density single-family residences and conservation and open space uses. The area within West Orange Township has been planned and developed as garden apartments and conservation and open space uses.

**Orange** - The City of Orange adjoins the easterly border of West Orange. In both communities this is an older developed area which includes residential, commercial, and industrial uses. Orange last revised its Master Plan in March 1984 and in July 1988 it adopted a housing element. The Orange plan generally reflects the established land use pattern of this area.

**Montclair** - Montclair adjoins West Orange to the southeast. The area is largely residential with a portion of Montclair being within the Eagle Rock Reservation. Montclair has designated its adjoining areas as R-1 One Family Zone, R0 Mountainside Zone, and P Public Zone.

**Livingston Township** - Livingston Township abuts West Orange's northwestern boundary which parallels the ridge of the second mountain. Access between the communities is provided by Northfield Avenue, Mount Pleasant Avenue and I-287. Existing land use within Livingston includes St. Barnabas Hospital, single family development, undeveloped woodlands, and the Crestmont Golf Club. Developed areas in Livingston are designated for a range of single family uses with minimum areas of 9,375 square feet to 35,250 square feet. Undeveloped areas are planned for single family on large lots or, in certain locations, for multi-family development as a conditional use to meet the Township's Mount Laurel obligation. An area is also proposed for acquisition as a municipal park.

Verona - The Township of West Orange adjoins Verona along its most eastern border. The following zones in West Orange are located on the border of Verona:

R-3 One Family Residential (20,000 square foot), R-6 One Family Residential (6,000 square foot), R-2 One Family Residential (40,000 square foot) and R-1 One Family Residential (80,000 square foot).

The existing land uses found in Verona along the West Orange border are park and single family and two family residential. There are two main roadways connecting West Orange to Verona. From north to south these are Prospect Avenue, and Pleasant Valley Way. The Borough of Verona is proposing to maintain residential uses and to reduce the effects of heavy traffic along Prospect Avenue.

Village of South Orange - The southern corner of West Orange adjoins the Village of South Orange. The existing land uses in West Orange in this area are R-5 One Family Residential (10,000 square foot) and R-6 One Family Residential (6,000 square foot). The existing land use for South Orange in this area is residential single family. The major roadways connecting Township of West Orange with Village of South Orange are Gregory Avenue and South Valley Road.

Essex Fells - The northwest corner of West Orange, zoned R-2 and R-C, adjoins the municipality of Essex Fells. In Essex Fells, the zoning adjoining West Orange is A-2 Residential and Municipal. The uses in the A-2 Zone are detached one family dwellings. The use in the Municipal Zone are buildings, structures, or utilities which serve the public.

Roseland - The Borough of Roseland adjoins West Orange in the northwest section. The existing land uses in the adjoining area of West Orange are R-4, One Family Residential (15,000 square feet) and R-2, One Family Residential (40,000 square feet). The existing land uses for the adjoining area in Roseland are R-3, Single Family Detached with a minimum lot area of 20,000 square feet, and R-4, Single Family Detached with a minimum lot are of 11,250 square feet. The existing uses mentioned above are not proposed to change in either municipality.

Maplewood - A small portion in the southwest section of West Orange adjoins Maplewood. The entire area is comprised of South Mountain Reservation. West Orange has designated the area as conservation and Maplewood zoned it as recreation. The uses described within each municipality are not proposed to change.

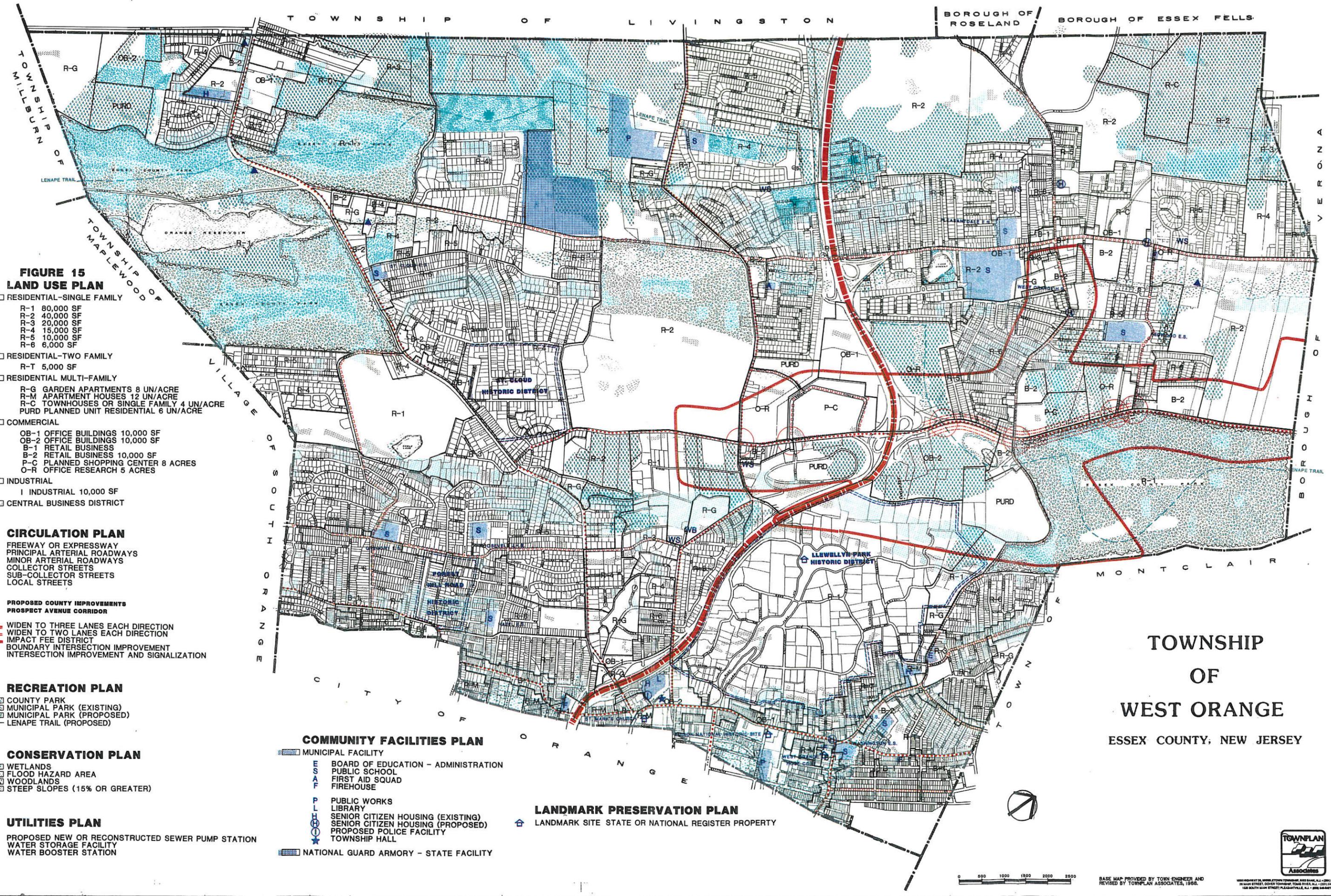
## State Development and Redevelopment Plan

The State Planning Commission has released the Preliminary State Development and Redevelopment Plan. The plan proposes use of a system which categorizes New Jersey into areas or "tiers". Each tier contains a set of policies to guide land use, economic development, housing, capital facilities investment, and transportation. In addition, the draft proposes a set of policies with State-wide application for air quality, steep slopes, flood control, historic preservation, scenic areas, stream corridors, waste disposal, water supply protection, recreation, open space, transportation, housing, and capital facilities.

West Orange is categorized in the system as Tier 2, Stable Cities and Suburbs. The policy intent is for West Orange to maintain growth "while preserving community character and the quality of life". The major issues seen for the tier are maintaining community character, meeting infrastructure demands, addressing fiscal pressures, accommodating future growth, and coordinating planning with implementation measures.

The Plan is presently the subject of a "cross-acceptance" process in which County and municipal government may comment directly on the Plan in an effort to influence the final version.

West Orange should actively participate in cross-acceptance, evaluate the impact of any proposed State policies on the community, and comment accordingly on the Preliminary State Plan. In addition, the Township should propose that the Main Street - Valley Road corridor be designated as Tier 1, Redeveloping Suburb. This designation would be consistent with local efforts to revitalize the area. Its inclusion in Tier 1 of the State Plan would give it high priority for State aid programs and infrastructure expenditures.



**FIGURE 15  
LAND USE PLAN**

- RESIDENTIAL-SINGLE FAMILY**
  - R-1 80,000 SF
  - R-2 40,000 SF
  - R-3 20,000 SF
  - R-4 15,000 SF
  - R-5 10,000 SF
  - R-6 6,000 SF
- RESIDENTIAL-TWO FAMILY**
  - R-T 5,000 SF
- RESIDENTIAL MULTI-FAMILY**
  - R-G GARDEN APARTMENTS 8 UN/ACRE
  - R-M APARTMENT HOUSES 12 UN/ACRE
  - R-C TOWNHOUSES OR SINGLE FAMILY 4 UN/ACRE
  - PURD PLANNED UNIT RESIDENTIAL 6 UN/ACRE
- COMMERCIAL**
  - OB-1 OFFICE BUILDINGS 10,000 SF
  - OB-2 OFFICE BUILDINGS 10,000 SF
  - B-1 RETAIL BUSINESS
  - B-2 RETAIL BUSINESS 10,000 SF
  - P-C PLANNED SHOPPING CENTER 8 ACRES
  - O-R OFFICE RESEARCH 5 ACRES
- INDUSTRIAL**
  - I INDUSTRIAL 10,000 SF
- CENTRAL BUSINESS DISTRICT**
- CIRCULATION PLAN**
  - FREEWAY OR EXPRESSWAY
  - PRINCIPAL ARTERIAL ROADWAYS
  - MINOR ARTERIAL ROADWAYS
  - COLLECTOR STREETS
  - SUB-COLLECTOR STREETS
  - LOCAL STREETS
- PROPOSED COUNTY IMPROVEMENTS**
  - PROSPECT AVENUE CORRIDOR
  - WIDEN TO THREE LANES EACH DIRECTION
  - WIDEN TO TWO LANES EACH DIRECTION
  - IMPACT FEE DISTRICT
  - BOUNDARY INTERSECTION IMPROVEMENT
  - INTERSECTION IMPROVEMENT AND SIGNALIZATION
- RECREATION PLAN**
  - COUNTY PARK
  - MUNICIPAL PARK (EXISTING)
  - MUNICIPAL PARK (PROPOSED)
  - LENAPE TRAIL (PROPOSED)
- CONSERVATION PLAN**
  - WETLANDS
  - FLOOD HAZARD AREA
  - WOODLANDS
  - STEEP SLOPES (15% OR GREATER)
- UTILITIES PLAN**
  - PROPOSED NEW OR RECONSTRUCTED SEWER PUMP STATION
  - WATER STORAGE FACILITY
  - WATER BOOSTER STATION
- COMMUNITY FACILITIES PLAN**
  - MUNICIPAL FACILITY**
    - BOARD OF EDUCATION - ADMINISTRATION
    - PUBLIC SCHOOL
    - FIRST AID SQUAD
    - FIREHOUSE
  - PLA**
    - PUBLIC WORKS
    - LIBRARY
    - SENIOR CITIZEN HOUSING (EXISTING)
    - SENIOR CITIZEN HOUSING (PROPOSED)
    - PROPOSED POLICE FACILITY
    - TOWNSHIP HALL
  - NATIONAL GUARD ARMOY - STATE FACILITY**
- LANDMARK PRESERVATION PLAN**
  - LANDMARK SITE STATE OR NATIONAL REGISTER PROPERTY

**TOWNSHIP  
OF  
WEST ORANGE**

ESSEX COUNTY, NEW JERSEY



BASE MAP PROVIDED BY TOWN ENGINEER AND  
REVISED BY TOWNPLAN ASSOCIATES, 1986.



1001 HIGHWAY 28, WILMINGTON TOWNSHIP, 800 BAYVIEW, N.J. 08111-1711  
 28 MAIN STREET, DOWER TOWNSHIP, TOWNSHIP, N.J. 08014-1400  
 128 SOUTH MAIN STREET, ALABAMA, N.J. 08001

APPENDIX

TABLES & ESSEX COUNTY HISTORIC SITES INVENTORY

TABLE 1  
 HISTORICAL POPULATION TRENDS: 1900 - 1980  
 WEST ORANGE, ESSEX COUNTY, NEW JERSEY

YEAR	WEST ORANGE TOWNSHIP		COUNTY OF ESSEX		STATE OF NEW JERSEY	
	CENSUS	PERCENT CHANGE	CENSUS	PERCENT CHANGE	CENSUS	PERCENT CHANGE
1900	6889		359053		1883669	
1910	10980	59.4%	512886	42.8%	2537167	34.7%
1920	15573	41.8%	652089	27.1%	3155900	24.4%
1930	24327	56.2%	833513	27.8%	4041334	28.1%
1940	25662	5.5%	837340	0.5%	4160165	2.9%
1950	28605	11.5%	905949	8.2%	4835329	16.2%
1960	39895	39.5%	923545	1.9%	6066782	25.5%
1970	43715	9.6%	932526	1.0%	7168164	18.2%
1980	39510	-9.6%	851304	-8.7%	7364158	2.7%

Source: U.S. Census of Population, 1900 - 1980  
 Compiled by: Townplan Associates, 1988

TABLE 2  
 NATURAL POPULATION CHANGES: 1960-1986  
 WEST ORANGE TOWNSHIP

YEAR	BIRTHS	DEATHS	NATURAL CHANGE
1960	724	353	371
1961	742	359	383
1962	678	340	338
1963	672	365	307
1964	639	395	244
1965	571	404	167
1966	560	375	185
1967	517	372	145
1968	486	431	55
1969	520	407	113
<hr/>			
TOTAL 1960-1969	6109	3801	2308
<hr/>			
1970	523	415	108
1971	443	371	72
1972	419	446	-27
1973	375	455	-80
1974	399	459	-60
1975	361	418	-57
1976	340	380	-40
1977	394	402	-8
1978	362	431	-69
1979	432	431	1
<hr/>			
TOTAL 1970-1979	4048	4208	-160
<hr/>			
1980	419	491	-72
1981	391	448	-57
1982	448	461	-13
1983	418	483	-65
1984	418	440	-22
1985	430	460	-30
* 1986	474	487	-13
<hr/>			
TOTAL 1980-1986	2998	3270	-272
<hr/>			
TOTAL 1960-1986	13155	11279	1876

\* PROVISIONAL

Source: New Jersey Department of Health, Center  
 for Health Statistics: 1960-1985

Compiled by: Townplan Associates, 1987

TABLE 3  
NATURE OF POPULATION CHANGE: 1960-1986  
WEST ORANGE TOWNSHIP

	1960-1969	1970-1979	1980-1986
BASE POPULATION (1)	39895 (1960)	43715 (1970)	39510 (1980)
NATURAL CHANGE (2)			
Total Births	6109	4048	2998
Total Deaths	- 3801	- 4208	- 3270
Natural Change	2308	-160	-272
NET MIGRATION			
Total Population Change	3820	-4205	1306
Natural Change	- 2308	- -160	- -272
Net Migration	1512	-4045	1578
NET POPULATION CHANGE			
Base Population	39895	43715	39510
Natural Change	+ 2308	+ -160	+ -272
Net Migration	+ 1512	+-4045	+ 1578
Net Population	43715 (1970)	39510 (1980)	40816 (3) (1986)

Source: (1) United States Census of Population: 1960, 1970 & 1980.  
(2) New Jersey Department of Health, Center for Health Statistics: 1960-1985 birth and death statistics.  
(3) New Jersey Department of Labor, Office of Demographic Economic Analysis, "Population Estimates for New Jersey" issued September 1987.

Compiled By: Townplan Associates, 1987

TABLE 4  
 1980 POPULATION BY RACE  
 WEST ORANGE, ESSEX COUNTY, NEW JERSEY

	WEST ORANGE		ESSEX COUNTY		NEW JERSEY	
	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT
WHITE	37400	94.7	482193	56.7	6127467	83.2
NON-WHITE	2110	5.3	368923	43.3	1237356	16.8
TOTAL	39510	100	851116	100	7364823	100

Source: U.S. Census of Population 1980  
 Compiled by: Townplan Associates, 1988

TABLE 5  
 1980 EDUCATIONAL LEVELS FOR PERSONS 25 AND OLDER  
 WEST ORANGE, ESSEX COUNTY, NEW JERSEY  
 (SHOWN AS PERCENT OF TOTAL)

YEARS COMPLETED	WEST ORANGE % OF TOTAL	ESSEX COUNTY % OF TOTAL	NEW JERSEY % OF TOTAL
0-11	24.8	37.2	32.6
12	33.0	32.4	32.9
13-15	14.3	12.5	13.2
16+	28.0	18.0	18.3

Source: U.S. Census of Population, 1980  
 Compiled by: Townplan Associates, 1988

TABLE 6  
 1980 RELATIVE HOUSEHOLD INCOME  
 WEST ORANGE, ESSEX COUNTY AND NEW JERSEY  
 ( SHOWN AS A PERCENT OF TOTAL)

HOUSEHOLD INCOME	WEST ORANGE	ESSEX COUNTY	NEW JERSEY
\$0-\$ 7499	10.3	25.1	17.3
\$7500-\$14999	15.6	21.5	19.9
\$15000-\$19999	12.3	12.6	13.4
\$20000-\$24999	11.8	10.3	12.5
\$25000-\$29999	11.5	8.3	10.4
\$30000-\$34999	8.9	6.1	7.9
\$35000-\$39999	7.4	4.4	5.5
\$40000-\$49999	8.8	4.9	6.3
\$50000-\$74999	8.4	4.5	4.9
\$75000 & OVER	4.9	2.3	1.9
 MEDIAN	 24969	 16472	 19961

Source: National Planning Data Corp.  
 Compiled by: Townplan Associates, 1988

TABLE 7  
 1980 RELATIVE OCCUPATION DISTRIBUTION  
 WEST ORANGE, ESSEX COUNTY AND NEW JERSEY  
 (SHOWN AS PERCENT OF TOTAL)

OCCUPATION	WEST ORANGE	ESSEX COUNTY	NEW JERSEY
EXEC/ADMIN	16.6	11.1	12.2
PROFESSIONAL	17.6	13.6	13.6
TECHNICAL	2.0	2.5	3.1
SALES	13.4	8.6	9.9
ADMIN/SUPPORT	21.7	21.4	20.0
SERVICE	10.0	13.2	11.6
PROD/CRAFT	8.8	9.5	11.7
OPER/LABOR	9.2	19.6	17.1
FARM	0.6	0.4	0.8

Source: National Planning Data Corp.  
 Compiled by: Townplan Associates, 1988

TABLE 8  
1987 ANNUAL UNEMPLOYMENT RATE  
WEST ORANGE, ESSEX COUNTY AND NEW JERSEY

WEST ORANGE	ESSEX COUNTY	NEW JERSEY
2.8	5.4	4.0

Source: New Jersey Department of Labor, Division of Planning  
And Research, Office of Demographic & Economic Analysis;  
"New Jersey Unemployment Rates" (1987)  
Compiled by: Townplan Associates, 1988

TABLE 9  
 POPULATION ESTIMATES: 1981 - 1986  
 WEST ORANGE, ESSEX COUNTY AND NEW JERSEY

YEAR	WEST ORANGE		ESSEX COUNTY		NEW JERSEY	
	TOTAL	% CHANGE	TOTAL	% CHANGE	TOTAL	% CHANGE
1981	39450		845700		7408000	
1982	39712	0.66	841300	-0.52	7430000	0.30
1983	39962	0.63	841800	0.06	7458000	0.51
1984	40256	0.74	841500	-0.04	7511000	0.58
1985	40672	1.03	844000	0.30	7561000	0.67
1986	40816	0.35	843900	-0.01	7620000	0.78

Source: New Jersey Department of Labor, Division of Planning  
 And Research, Office of Demographic & Economic Analysis;  
 Population Estimates 1981 - 1986  
 Compiled by: Townplan Associates, 1988

TABLE 10

POPULATION PROJECTIONS: 1993

WEST ORANGE AND ESSEX COUNTY

	1970 (CENSUS)	1980 (CENSUS)	% CHANGE 70-80	1988 (EST.)	% CHANGE 80-88	1993 (PROJ.)	% CHANGE 88-93
WEST ORANGE	43715	39510	-9.6	41243	4.4	42083	2.0
ESSEX COUNTY	932526	851116	-8.7	840167	-1.3	833304	-0.3

Source: National Planning Data Corporation

Compiled by: Townplan Associates, 1988

TABLE 11

## COMMON BIRDS OF WEST ORANGE

COMMON NAME	SCIENTIFIC NAME	-HABITAT-				
		ROADS/ LAKES	FIELD/ SCRUB	FOREST FRINGE	FOREST	URBAN LAND
Sharp-shinned Hawk	Accipiter			X	X	
Savannah Sparrow	Ammodramus saviannarum		X			
Mallard	Anas platyrhynchos	X				
Canada Goose	Branta canadensis	X				
Red-tailed Hawk	Buteo jamaicensis			X	X	
Red-shouldered Hawk	Buteo lineatus			X	X	
Cardinal	Cardinalis cardinalis					X
Turkey Vulture	Cathartes aura		X	X		
Hermit Thrush	Catharus guttatus				X	
Gray-cheeked Thrush	Catharus minimus			X		
Swainson's Thrush	Catharus ustulatus			X		
Common Crow	Corvus brachyrhynchos		X			
Tree Swallow	Iridoprocne bicolor				X	X
Carolina Chickadee	Parus carolinensis			X	X	
House Sparrow	Passer domesticus					X
Starling	Sturnus vulgaris					X
American Robin	Turdus migratorius					X
Mourning Dove	Zenaidura macroura					X
White-throated Sparrow	Zonotrichia albicollis				X	

PREPARED BY: Townplan Associates, 1988

TABLE 12

## MAMMALS OF WEST ORANGE

COMMON NAME	SCIENTIFIC NAME	-HABITAT-					SPECIAL HABITAT REQUIREMENTS
		FOREST	WET FOREST	MARSH	FIELD/ SCRUB	FOREST FRINGE	
<b>BATS</b>							
Hoary Bat	<i>Lasiurus cinereus</i>		X				evergreens
Silver-haired Bat	<i>Lasionycteris noctivagans</i>		X			X	trees, cracks, buildings
<b>ROBENTS</b>							
Black Rat	<i>Rattus rattus</i>				X	X	mainly buildings, docks
Eastern Woodrat	<i>Neotoma floridana</i>					X	rocky areas
House Mouse	<i>Mus musculus</i>				X	X	buildings, farm fields
Wood Mouse	<i>Peromyscus sp.</i>	X				X	
Short-tailed Shrew	<i>Blarina brevicauda</i>	X			X		
So. Red-backed Vole	<i>Clethrionomys gapperi</i>		X				
Woodland Vole	<i>Microtus pinetorum</i>	X			X		pine forests
<b>SMALL MAMMALS</b>							
Star-nosed Mole	<i>Condylura cristata</i>		X	X			occasionally lawns
Opossum	<i>Didelphis virginiana</i>	X			X		also farmlands
Striped Skunk	<i>Mephitis mephitis</i>	X			X	X	
Raccoon	<i>Procyon lotor</i>		X				streams
Long Tail Weasel	<i>Mustela frenata</i>	X	X		X	X	likes farms & streams
Mink	<i>Mustela vison</i>		X	X			streams
Eastern Cottontail	<i>Sylvilagus floridanus</i>	X			X	X	thickets & brush piles
New Eng. Cottontail	<i>S. transitionalis</i>	X			X	X	brushy areas
Snowshoe Hare	<i>Lepus capensis</i>	X			X		
Eastern Chipmunk	<i>Tamias striatus</i>		X		X		wood piles & stone walls
East. Gray Squirrel	<i>Sciurus carolinensis</i>	X				X	
So. Flying Squirrel	<i>Glaucomys volans</i>	X					Hick., Oak, Beech, Maple
<b>LARGER MAMMALS</b>							
Red Fox	<i>Vulpes vulpes</i>				X	X	farms
White-tailed Deer	<i>Odocoileus virginianus</i>	X			X	X	farm fringes

SOURCE: Whitaker, John D. Jr., "THE AUDUBON SOCIETY FIELD GUIDE TO NORTH AMERICAN MAMMALS",  
Alfred A. Knopf, New York, N.Y., 1980, 745 pps.

COMPILED BY: Townplan Associates, 1987

TABLE 13

## THREATENED AND ENDANGERED SPECIES

COMMON NAME SCIENTIFIC NAME	HABITAT REQUIREMENTS	STATUS
Blue-spotted Salamander <i>Ambystoma laterale</i>	mature woodland swamps & marshes Passaic River watershed	E
Tremblay's Salamander <i>Ambystoma tremblay</i>	mature woodland swamps & marshes Passaic River watershed	E
Wood Turtle <i>Desmays insculpta</i>	hardwood forests near brooks and streams	E
Red-shouldered Hawk <i>Buteo lineatus</i>	moist woodlands	T
Cooper's Hawk <i>Accipiter cooperii</i>	open woodlands and woodland margins	E
Cliff Swallow <i>Petrochelidon pyrrhoneta</i>	on or under eaves of barns, areas where insects are plentiful	T

SOURCE: New Jersey Endangered and Threatened Species Program  
PREPARED BY: Townplan Associates, 1988

TABLE 14

## WEST ORANGE EXISTING LAND USE - 1988

<u>LAND USE</u>	<u>AREA (ACRES)</u>	<u>PERCENT OF TOTAL LAND USE</u>
RESIDENTIAL		
Single Family	2641.3	34.0
Two Family	63.7	.8
Multi-Family (3 Units or more)	239.3	3.1
Home Occupation/Home Profession	<u>3.1</u>	<u>---</u>
Total Residential	2947.4	37.9
BUSINESS AND COMMERCIAL		
Retail and Personal Service	281.5	3.6
General Business (Banks, offices, other commercial)	157.3	2.0
Mixed Use (Commercial & Residential, Retail & General Business)	<u>5.3</u>	<u>.1</u>
Total Business and Commercial	444.1	5.7
Industrial	35.4	.5

TABLE 14

## WEST ORANGE EXISTING LAND USE - 1988

<u>LAND USE</u>	<u>AREA (ACRES)</u>	<u>PERCENT OF TOTAL LAND USE</u>
PUBLIC		
County Parks and Recreation	993.1	12.8
Municipal Parks and Recreation	23.3	.3
Federal Parks and Recreation	8.7	.1
Schools	102.3	1.3
Other Public Buildings & Lands	<u>340.5</u>	<u>4.4</u>
Total Public	1,467.9	18.9
QUASI-PUBLIC		
Quasi-public Open Space and Recreation	715.4	9.2
Houses of Worship	51.5	.7
Cemeteries	30.4	.4
Private Schools	21.4	.3
Other (Fraternal Organizations, Rehabilitation Centers, Utilities etc.)	<u>121.1</u>	<u>1.6</u>
Total Quasi Public	939.8	12.2
AGRICULTURE	23.2	.3
VACANT LAND	785.8	10.6
STREETS AND ROADS	1132.4	14.6
TOTAL	7776	100 *

\* Percentages do not total 100 because of rounding

TABLE 15

## WEST ORANGE ZONE DISTRICTS - 1988

ZONE DISTRICT	MINIMUM LOT AREA	ZONE	
		A (ACRES)	R E A PERCENT
R-1 One Family Residential	80,000 S.F.	1673.6	21.5
R-2 One Family Residential	40,000 S.F.	1498.8	19.3
R-3 One Family Residential	20,000 S.F.	104.5	1.3
R-4 One Family Residential	15,000 S.F.	647.7	8.3
R-5 One Family Residential	10,000 S.F.	1330.3	17.1
R-6 One Family Residential	6,000 S.F.	736.4	9.5
R-T Two Family Residential	5,000 S.F.	330.0	4.2
R-G Garden Apartments	8 units/acre	299.3	3.8
R-M Apartment Houses	12 units/acre	40.2	0.5
R-C Single Family or Townhouses	4 units/acre	180.6	2.3
PURD Planned Unit Residential Development	6 units/acre	175.8	2.3
OB-1 Office Buildings	10,000 S.F.	116.7	1.5
OB-2 Office Buildings	10,000 S.F.	148.6	1.91
B-1 Retail Business	no minimum	92.7	1.19
B-2 Retail Business	10,000 S.F.	117.6	1.5
P-C Planned Shopping Center	8 acres	73.3	.9
O-R Office Research	5 acres	139.5	1.8
I Industrial	10,000 S.F.	<u>70.4</u>	<u>0.9</u>
TOTAL		7776	100.0*
OVERLAY ZONE DISTRICTS			
C Conservation			
CBD Central Business District			

\* Percentages do not total 100 because of rounding

TABLE 16

PROSPECT AVENUE CORRIDOR  
RECOMMENDED IMPROVEMENTS

A) Prospect Avenue Improvements

- 1) Widen Prospect Avenue from Bloomfield Avenue to Woodland Avenue to 2 lanes each direction.
- 2) Widen Prospect Avenue from Woodland Avenue to Route I-280 to 3 lanes each direction.
- 3) Widen from Rooney Circle to Mt. Pleasant Avenue to 2 lanes each direction.

B) Intersection Improvements

- 1) Intersections of Prospect Avenue to Woodland Avenue and Nicholas Avenue:

The northbound approaches on Prospect Avenue to Woodland Avenue and to Nicholas Avenue are recommended for a 3 lane approach which includes an exclusive left turn lane. The southbound approach on Prospect Avenue at both intersections should be widened to 3 lanes. Woodland Avenue will remain as it is at present.

Nicholas Avenue will be widened to a total of 5 lanes with 2 lanes in the westbound direction and 3 lanes eastbound. Two right turn lanes and one exclusive left turn lane are recommended for this approach.

- 2) Prospect Avenue and the Entrance to the Caldor Shopping Center:

The three existing entrances to the shopping center should be consolidated into two with the elimination of the existing entrance ramp (first entrance from the north) bordering the tire store. At the proposed northern entrance, the northbound approach on Prospect Avenue will have a total of 4 lanes which consists of 3 through lanes and 1 exclusive left turn lane. The southbound approach will have a total of 3 lanes. The southern entrance is recommended for a right-in and right-out operation.

- 3) Prospect Avenue and Eagle Rock Avenue:

Widen to 3 lanes for all of the approaches and construct 3 reverse jughandles plus a slip ramp.

4) Intersection of Prospect Avenue and Crystal Lake Development Access:

Construct a one-way flyover and eliminate the left turn movement from Prospect Avenue northbound to the Route I-280 westbound on-ramp. The movement will be accommodated via the proposed flyover through the Crystal Lake entrance.

5) Prospect Avenue and I-280 Interchange:

Modify the northwest quadrant of the interchange to accommodate the proposed 1-way flyover from the Crystal Lake entrance.

6) Prospect Avenue and Rooney Circle:

At the intersection of the northern entrance of Rooney Circle and Prospect Avenue, the northbound approach has a four-lane cross-section where an exclusive left turn lane is provided for Essex Green Shopping Center traffic. Beyond the intersection, Prospect northbound continues with 3 lanes to the I-280 interchange. The southbound approach consists of 4 lanes with the provision for an exclusive left turn lane for the Eagle Ridge Condominium traffic. South of the northern entrance Prospect Avenue will continue with 3 lanes to the southern entrance of Rooney Circle where an exclusive right turn lane is provided for Essex Green traffic. Beyond the southern entrance intersection, southbound Prospect Avenue will become 2 lanes as it approaches Mt. Pleasant Avenue. The northbound approach at the southern entrance is a 3-lane approach where an exclusive left turn lane is provided. Prospect Avenue northbound will continue with 2 lanes widening to 3 lanes beyond the southern entrance and widening to 4 lanes at the northern entrance of Rooney Circle as described earlier.

7) Prospect Avenue and Mt. Pleasant Avenue Intersection:

Two lanes each direction is proposed for all approaches at this intersection. The eastbound approach of Mt. Pleasant Avenue will have an exclusive left-turn lane while turning movements at all other approach will utilize a shared lane concept with the through lanes. Beyond the intersection, Prospect Avenue to the south will taper back to the existing roadway configuration and no additional improvement is required for the 1992 travel.

SOURCE: Prospect Avenue Corridor Study - Final Report March 1988

TABLE 17  
 WEST ORANGE PUBLIC SCHOOL ENROLLMENT  
1962 - 1987

<u>YEAR</u>	<u>ENROLLMENT</u>
1962	7615
1963	7899
1964	8024
1965	8092
1966	8104
1967	8265
1968	8262
1969	8398
1970	8350
1971	8211
1972	8002
1973	7774
1974	7697
1975	7376
1976	6937
1977	6542
1978	6213
1979	5931
1980	5596
1981	5298
1982	5015
1983	4733
1984	4544
1985	4435
1986	4174
1987	4061

SOURCE: West Orange Master Plan Update - 1978  
 and West Orange Board of Education

TABLE 18

## WEST ORANGE PUBLIC SCHOOL FACILITIES

<u>SCHOOL</u>	<u>SIZE OF SITE (ACRES)</u>	<u>GRADE LEVELS</u>	<u>ENROLLMENT CAPACITY</u>	<u>MAXIMUM ANTICIPATED ENROLLMENT</u>	<u>PROGRAM FACILITY NEEDS</u>	<u>MAJOR REPAIRS OR IMPROVEMENTS NEEDED</u>
West Orange High School	19.1	9 - 12	2029	1364	Art Classroom Cafeteria/ kitchen, gym- nasium/locker rooms, home economic lab- oratory, science lab- oratory, industrial art shops containment,	Roof repair, heating ventilation, air- conditioning system, life safety improve- ments, handicapped access, structural repairs, patching, plastering, painting site development, window replacement, asbestos removal or floor repairs
Gregory Elementary	4.4	K - 6	517	420	-----	Roof repair, venti- lation, air- conditioning system, structural repairs, patching, painting, window replacement, door hardware
Hazel Elementary	2.9	K - 6	347	286	-----	Energy retrofit, structural repairs, patching, plastering, painting, site development, door hardware, classroom upgrading

TABLE 18 (Continued)

## WEST ORANGE PUBLIC SCHOOL FACILITIES

<u>SCHOOL</u>	<u>SIZE OF SITE (ACRES)</u>	<u>GRADE LEVELS</u>	<u>ENROLLMENT CAPACITY</u>	<u>MAXIMUM ANTICIPATED ENROLLMENT</u>	<u>PROGRAM FACILITY NEEDS</u>	<u>MAJOR REPAIRS OR IMPROVEMENTS NEEDED</u>
Washington Elementary	3.8	K - 6	476	330	---	Roof repair, heating, ventilation, air- conditioning system, plumbing system, structural repairs, patching, plastering, painting
St. Cloud Elementary	15.6	K - 6	507	366	---	Roof repair, heating ventilation, air- conditioning system, plumbing system, patching, plastering or painting
Edison Junior High School	4.8	7 - 9	509	418	Library - instructional materials center	Roof repair, heating ventilation, air- conditioning system, structural repairs, patching, plastering, painting, site development substandard classroom upgrading, intercom system, and floors

TABLE 18 (Concluded)

WEST ORANGE PUBLIC SCHOOL FACILITIES

<u>SCHOOL</u>	<u>SIZE OF SITE (ACRES)</u>	<u>GRADE LEVELS</u>	<u>ENROLLMENT CAPACITY</u>	<u>MAXIMUM ANTICIPATED ENROLLMENT</u>	<u>PROGRAM FACILITY NEEDS</u>	<u>MAJOR REPAIRS OR IMPROVEMENTS NEEDED</u>
Roosevelt Jr. High School	2.7	7 - 9	545	537	Library - instructional materials center	Roof repairs, heating, ventilation, air-conditioning system, structural repairs, patching, plastering, painting, site development, substandard classrooms, upgrading intercom system, and floors
Pleasantdale Elementary	6.2	K - 6	515	415	----	Roof repair, heating, ventilation, air-conditioning system, structural repairs, patching, plastering or painting, door hardware, substandard classroom upgrading
Redwood Elementary	12	K - 6	393	311	----	Roof repair, heating, ventilation, air-conditioning system, plumbing system, patching, plastering or painting, site development, handicapped toilets

SOURCE: Master Plan for Educational Facilities - 1985  
West Orange Board of Education

TABLE 19  
 WEST ORANGE PUBLIC SCHOOL SYSTEM  
 CAPACITY BY GRADE LEVEL

<u>GRADE LEVEL</u>	<u>ENROLLMENT CAPACITY</u> *
Elementary Pre-K - 5	2755
Middle/Junior High 7 - 8	1054
High School 9 - 12	<u>2029</u>
TOTAL CAPACITY	5838

\* Projected to 1990

SOURCE: Master Plan for Education Facilities 1985  
 West Orange Board of Education

TABLE 20

PROJECTED ENROLLMENT BY GRADE LEVEL ORGANIZATION

<u>GRADE</u>	<u>1988-89</u>	<u>1989-90</u>
Kindergarten	314	297
1	366	342
2	309	355
3	329	306
4	300	326
5	281	303
6	312	281
7	269	306
8	314	264
9	290	311
10	325	307
11	318	306
12	<u>320</u>	<u>275</u>
TOTAL	1,253	1,199
Special Education	<u>200</u>	<u>200</u>
TOTAL	4,247	4,179

SOURCE: Master Plan for Education Facilities - 1985  
West Orange Board of Education

TABLE 21  
1987 BUSINESS SUMMARY  
WEST ORANGE

MAJOR SIC GROUP CODES	GENERAL BUSINESS CATEGORY (2)	NUMBER	PERCENT OF TOTAL
(1)	GENERAL BUSINESS CATEGORY (2)		
7	AGRICULTURE (3)	32	3.1
14	QUARRYING	1	0.1
	CONSTRUCTION -	107	10.3
15	BUILDING CONSTRUCTION	(27)	
16	OTHER CONSTRUCTION	(2)	
17	SPECIAL TRADE CONSTRUCTION	(78)	
20, 23, 24, 27, 28, 31, 34-36, 38, 39	MANUFACTURING	48	4.6
41, 42, 44	TRANSPORTATION/TRUCKING/DISPOSAL	20	1.9
48	COMMUNICATION	5	0.5
50, 51	WHOLESALE TRADE	84	8.1
	RETAIL TRADE -	192	18.6
52	BUILDING MATERIALS ETC.	(7)	
53	GENERAL MERCHANDISE STORES	(1)	
54	FOOD STORES	(21)	
55	AUTO DEALERS/GASOLINE STATIONS	(20)	
56	APPAREL AND ACCESSORY STORES	(23)	
57	FURNITURE & HOME EQUIPMENT	(14)	
58	EATING AND DRINKING PLACES	(62)	
59	MISCELLANEOUS RETAIL	(44)	
60-64	FINANCIAL, TITLE & ABSTRACT	57	5.5
65-66	REAL ESTATE & ASSOCIATED SERVICES -	63 426	6.1 41.2
70	HOTELS & OTHER LOGGING PLACES	(1)	
72	PERSONAL SERVICE	(34)	
73	BUSINESS SERVICE	(94)	
75	AUTOMOTIVE	(23)	
76	MISCELLANEOUS REPAIR	(6)	
78, 79	RECREATIONAL	(18)	
80	MEDICAL	(110)	
81	LEGAL	(92)	
82, 83	EDUCATION & SOCIAL SERVICE	(12)	
47, 86, 89	MISCELLANEOUS SERVICE	(36)	
	TOTAL COVERED BUSINESSES	1035	100.0

- NOTES: (1) Includes only those Standard Industrial Classification codes represented in West Orange.  
 (2) refers to businesses subject to Unemployment Insurance, not including self-employed individuals, minor employers, government agencies, and covered firms which have not been categorized due to insufficient information.  
 (3) Includes landscaping, and lawn care businesses.  
 (4) excluding travel agencies which are listed under miscellaneous service.

Sources: "New Jersey Employer Directory, Vol. 2", New Jersey Department of Labor, Division of Planning and Research, July 1986.  
 "Standard Industrial Classification Manual" Executive Office of the President - Office of Management and Budget, 1987.

COMPILED BY: Townplan Associates

TABLE 22  
 EMPLOYMENT GROWTH  
 1976 - 1986

	WEST ORANGE		ESSEX COUNTY		NEW JERSEY	
	NUMBER	PERCENT CHANGE	NUMBER	PERCENT CHANGE	NUMBER	PERCENT CHANGE
COVERED EMPLOYMENT :						
1976	12184		305607		2269709	
1986	16728	37.3	317671	3.9	2950984	30.0
POPULATION :						
1976	42492		868384		7339000	
1986	40816	-3.9	843925	-2.8	7620000	3.8
POPULATION/COVERED :	3.49		2.84		3.23	
EMPLOYMENT RATIO :	2.44		2.66		2.58	

SOURCES: New Jersey Department of Labor, Division of Planning and Research, Office of Demographic & Economic Analysis; "New Jersey Cvered Employment Trends", 1976 & 1986 Issues, and "Official State Estimates", July 1, 1976 & july 1, 1986.

COMPILED BY: Townplan Associates, 1988

TABLE 23  
PRIVATE SECTOR COVERED EMPLOYMENT  
WEST ORANGE, ESSEX COUNTY & NEW JERSEY

YEAR	WEST ORANGE	PERCENT CHANGE	ESSEX COUNTY	PERCENT CHANGE	NEW JERSEY	PERCENT CHANGE
1976	12184		305607		2269709	
1977	10942	-10.19%	304940	-0.22%	2334731	2.86%
1978	12054	10.16%	306133	0.39%	2468644	5.74%
1979	12591	4.45%	310664	1.48%	2529140	2.45%
1980	13062	3.74%	308195	-0.79%	2530556	0.06%
1981	13295	1.78%	303754	-1.44%	2589641	2.33%
1982	14796	11.29%	301151	-0.86%	2566143	-0.91%
1983	14902	0.72%	305878	1.57%	2680826	4.47%
1984	15391	3.28%	318770	4.21%	2813014	4.93%
1985	15748	2.32%	313835	-1.55%	2869833	2.02%
1986	16728	6.22%	317671	1.22%	2950984	2.83%

SOURCES: New Jersey Department of Labor, Division of Planning and Research, Office of Demographic & Economic Analysis; "New Jersey Covered Employment Trends" (1976-1986 Issues)

COMPILED BY: Townplan Associates, 1988

TABLE 24  
PRIVATE SECTOR EMPLOYMENT GROWTH BY JOB CATEGORY 1970-1987  
ESSEX COUNTY

INDUSTRIAL SECTOR	1970	1987	CHANGE 1970-1987	
			NUMBER	PERCENT
MANUFACTURING	113953	60619	-53334	-46.8
RETAIL & WHOLESALE	74343	75802	1459	2.0
SERVICES	46667	100055	53388	114.4
FINANCE, INSURANCE &				
REAL ESTATE	36101	31846	-4255	-11.8
CONSTRUCTION	16857	12764	-4093	-24.3
TRANSPORTATION	21304	22275	971	4.6
COMMUNICATION & UTILITIES	16049	11422	-4627	-28.8
AGRICULTURE	877	1398	521	59.4
TOTAL	326151	316181	-9970	-3.1

SOURCE: New Jersey Department of Labor, Division of Planning  
And Research, Office of Demographic & Economic Analysis;  
"New Jersey Covered Employment Trends" (1970 & 1987)

COMPILED BY: Townplan Associates, 1988

TABLE 25  
PRIVATE SECTOR COVERED EMPLOYMENT BY JOB CATEGORY 1970 & 1987  
WEST ORANGE

INDUSTRIAL SECTOR	1970		1987	
	NUMBER	PERCENT	NUMBER	PERCENT
MANUFACTURING	2238	26.1	160	1.0
RETAIL & WHOLESALE	2954	34.4	4898	29.5
SERVICE	1398	16.3	7476	45.0
FINANCE, INSURANCE & REAL ESTATE	417	4.9	1909	11.5
CONSTRUCTION	746	8.7	746	4.5
TRANSPORTATION	189	2.2	344	2.1
COMMUNICATIONS	541	6.3	0	---
AGRICULTURE	96	1.1	99	0.6
TOTAL	8579		16615 (1)	

NOTE: (1) Totals include items not shown in order to prevent disclosure of employer's identity.

SOURCE: New Jersey Department of Labor, Division of Planning and Research, Office of Demographic & Economic Analysis;  
"New Jersey Covered Employment Trends" (1970 & 1987).

COMPILED BY: Townplan Associates, 1988

TABLE 26  
 WEST ORANGE EMPLOYMENT  
 PROJECTION TO YEAR 2000

YEAR	TRENDS	
	1977-86	1982-86
1985	15748	15748
1986	16728	16728
1987	17328	17199
1988	17927	17670
1989	18527	18141
1990	19127	18612
1991	19727	19083
1992	20326	19554
1993	20926	20025
1994	21526	20496
1995	22125	20967
1996	22725	21438
1997	23325	21909
1998	23925	22380
1999	24524	22851
2000	25124	23322

TREND YEARS	PROJ. MEAN YEARLY INC.
1977-1986	600
1982-86	471

SOURCE: New Jersey Department of Labor, Division of Planning  
 and Research, Office of Demographic & Economic Analysis:  
 "New Jersey Covered Employment Trends" (1976 - 1986)  
 COMPILED BY: Townplan Associates, 1988

TABLE 27  
 COMMUTING PATTERNS RESIDENTIAL LABOR FORCE  
 WEST ORANGE & ESSEX COUNTY

PLACE OF WORK	WEST ORANGE		ESSEX COUNTY	
	NUMBER	PERCENT	NUMBER	PERCENT
IN ESSEX COUNTY	11797	68.0	198510	65.7
IN N.J., OUTSIDE ESSEX COUNTY	4422	25.5	82402	27.3
OUTSIDE NEW JERSEY	1135	6.5	21184	7.0
TOTAL	17354	100.0	302096	100.0

SOURCE: U.S. Census of Population & Housing 1980  
 COMPILED BY: Townplan Associates, 1988

TABLE 28  
 MEANS OF TRANSPORTATION TO WORK, RESIDENTIAL LABOR FORCE  
 WEST ORANGE & ESSEX COUNTY

MEANS OF TRANSPORTATION	WEST ORANGE		ESSEX COUNTY	
	NUMBER	PERCENT	NUMBER	PERCENT
CAR, TRUCK OR VAN	16875	87.6	256231	74.1
PUBLIC TRANSPORTATION	1324	6.9	60154	17.4
OTHER MEANS	83	0.4	2276	0.7
WALK TO WORK	674	3.5	23113	6.7
WORK AT HOME	308	1.6	3966	1.1
TOTAL	19264	100.0	345740	100.0

SOURCE: U.S. Census of Population & Housing 1980  
 COMPILED BY: Townplan Associates, 1988

TABLE 29  
1980 ECONOMIC INDICATORS  
WEST ORANGE, ESSEX COUNTY & NEW JERSEY

PARAMETER	WEST ORANGE	ESSEX COUNTY	NEW JERSEY
INCOME (1)			
Average Family Income (2)	\$34,269	\$24,513	\$26,479
Average Household Income (3)	\$30,324	\$21,102	\$23,275
Median Household Income	\$24,992	\$16,186	\$19,961
Per Capita Income	\$10,837	\$7,538	\$8,206
HOUSING			
Median Home Value	\$70,900	\$67,200	\$61,364
Average Home Value	\$77,125	\$76,179	\$67,907
Median Monthly Rent	\$317	\$247	\$230
Average Monthly Rent	\$331	\$252	\$235
EMPLOYMENT STATUS			
Armed Forces	0.0%	0.1%	0.5%
Civil Employed	61.7%	55.7%	58.2%
Unemployed	2.9%	5.1%	4.2%
Not in Labor Force	35.4%	39.1%	37.2%
GENERAL POPULATION DATA			
Average Family Size	3.5	3.9	3.4
Average Household Size	2.8	2.8	2.8
Median Age (years)	37.9	31.4	32.1
Percent Working Mothers (4)	58.5%	54.4%	52.8%

- NOTES: (1) "Income" refers to total money received in calendar year 1979.
- (2) "Family" refers to related individuals living together.
- (3) "Household" refers to occupants of a housing unit including families, persons living alone and nonrelated persons living together. Nonrelatives include the following categories: roomer/boarder, partner/roommate & paid employee.
- (4) "Working Mothers" refers to employed women who have children at home under 17 years old.

SOURCE: 1980 U.S. Census  
COMPILED BY: Townplan Associates, 1988

TABLE 30  
AGE OF HOUSING UNITS  
WEST ORANGE

DATES OF CONSTRUCTION (1)	STRUCTURES	PERCENT OF TOTAL/1980	PERCENT OF TOTAL/1987
1939 OR Earlier	5887	40.9	39.3
1940 to 1949	1624	11.3	10.8
1950 to 1959	3732	25.9	24.9
1960 to 1969	2061	14.3	13.7
1970 to March 1980	1106	7.7	7.4
1980 Total Year Round Housing Units (2)	14410	100.0	96.1
1980 -1987	582		3.9
1987 TOTAL HOUSING UNITS	14992		100.0

SOURCE: 1) 1980 Census of Population, STF IX  
2) New Jersey Department of Labor, Division of Planning and Research, "Residential Building Permits Historical Summary 1980-1987"

NOTE: (1) Unless otherwise noted dates of construction ranges are January 1 to December 31.  
(2) Includes only those units built prior to April 1, 1980.

COMPILED BY: Townplan Associates, 1988

TABLE 31  
 BUILDING AND DEMOLITION PERMITS 1970 - 1987  
 WEST ORANGE

YEAR	AUTHORIZED BUILDING PERMITS	AUTHORIZED DEMOLITIONS	NET CHANGE
1970	34	7	27
1971	39	20	19
1972	227	15	212
1973	59	6	53
1974	29	3	26
1975	125	5	120
1976	17	7	10
1977	59	1	58
1978	378	5	373
1979	113	7	106
1980	16	8	8
1981	15	9	6
1982	22	2	20
1983	67	7	60
1984	125	2	123
1985	139	2	137
1986	232	4	228
1970-1986	-----	-----	-----
TOTALS	1696	110	1586

SOURCES: 1) New Jersey Department of Labor, Division of Planning and Research, "Residential Building Permits Historical Summary 1970-1979" & "Residential Building Permits: Yearly Summaries 1980-1987".

COMPILED BY: Townplan Associates, 1988

TABLE 32  
 CONDITION OF HOUSING  
 WEST ORANGE

TOTAL HOUSING UNITS	TOTAL OCCUPIED UNITS	VACANT UNITS	UNITS LACKING COMPLETE PLUMBING	UNITS LACKING COMPLETE KITCHENS	UNITS LACKING CENTRAL HEATING
14410	14027	383	212	162	407

SOURCE: 1980 U.S. Census (Profiles X & XII)

COMPILED BY: Townplan Associates, 1988

TABLE 33  
HOUSING STOCK PROJECTIONS  
WEST ORANGE

YEAR	TRENDS		
	1972-86	1977-86	1982-86
1985	14756	14756	14756
1986	14984	14984	14984
1987	15075	15069	15120
1988	15166	15154	15255
1989	15256	15239	15391
1990	15347	15323	15526
1991	15438	15408	15662
1992	15529	15493	15798
1993	15619	15578	15933
1994	15710	15663	16069
1995	15801	15748	16204
1996	15892	15832	16340
1997	15982	15917	16476
1998	16073	16002	16611
1999	16164	16087	16747
2000	16255	16172	16882

REGRESSION TRENDS	PROJECTED MEAN YEARLY INCREASE
1972-86	91
1977-86	85
1982-86	136

SOURCES: Trends based upon New Jersey Department of Labor, Division of Planning and Research, "Residential Building Permits Historical Summary 1970 - 1979" & "Residential Building Permit Yearly Summaries 1980 - 1986"

COMPILED BY: Townplan Associates, 1988

TABLE 34  
POPULATION PROFILE - 1980  
WEST ORANGE

	NUMBER	PERCENT
-----		
RACE		
WHITE	37553	95.0
BLACK	810	2.1
HISPANIC	93	0.2
OTHER	1054	2.7
TOTAL	39510	100.0
SEX		
MALE	18465	46.7
FEMALE	21045	53.3
AGE		
MEDIAN	37.7	
UNDER 18	8944	22.6
65 & OVER	6320	16.0

SOURCE: 1) State of New Jersey Department of Labor  
Office of Demographic and Economic Analysis  
Volume 1: Characteristics of Persons 1980  
2) U.S. Census of Population (Profile 1)

COMPILED BY: Townplan Associates, 1988

TABLE 35  
HOUSEHOLD PROFILE - 1980

WEST ORANGE

	TOTAL NUMBER
HOUSEHOLDS	14027
POPULATION OF HOUSEHOLDS	39510
PERSONS PER HOUSEHOLD	2.76
FEMALE HEADED HOUSEHOLDS	3361
% OF TOTAL	24.0

SOURCE: State of new Jersey Department of Labor  
Office of demographic and Economic Analysis  
Volume II Characteristics of Households and Families 1980

COMPILED BY: Townplan Associates, 1988

TABLE 3b  
 INCOME CHARACTERISTICS AND PROJECTIONS 1979 - 1993

WEST CHARGE

HOUSEHOLD INCOME	1979		1988		% CHANGE 79-88	1993		% CHANGE 87-93
	NUMBER	PERCENT	NUMBER	PERCENT		NUMBER	PERCENT	
LESS THAN \$ 7500	1441	10.3	697	4.6	-51.6	494	3.2	-29.1
\$ 7500 - \$14999	2191	15.6	897	5.9	-59.1	619	4.0	-31.0
\$15000 - \$19999	1732	12.3	802	5.3	-53.7	479	3.1	-40.3
\$20000 - \$24999	1560	11.8	862	5.7	-48.1	625	4.0	-27.5
\$25000 - \$29999	1611	11.5	931	6.1	-42.2	636	4.1	-31.7
\$30000 - \$34000	1246	8.9	995	6.6	-20.3	697	4.5	-29.9
\$35000 - \$39999	1045	7.4	1083	7.1	3.6	742	4.7	-31.5
\$40000 - \$49000	1332	9.8	1995	13.2	61.9	1684	10.8	-15.6
\$50000 - \$74999	1180	8.4	3823	25.2	224.0	3724	23.8	-2.6
\$75000 AND OVER	667	4.9	3072	20.3	347.2	5932	37.9	95.1

SOURCE: National Planning Data Corp.

COMPILED BY: Townplan Associates, 1988

TABLE 37  
 VACANT LAND INVENTORY (2 ACRES & GREATER)  
 WEST ORANGE  
 MARCH 1988

MAP BLOCK/ # LOT(S)	LOCATION	TOTAL AREA (ACRES)	ENVIRONMENTALLY SENSITIVE AREA (ACRES)	ENVIRONMENTAL CONSTRAINTS	DEVELOPMENT CONSTRAINTS	DEVELOPAB AREA (ACRES)
1 50A/(1-5), (33-40)	WINDING WAY	2.00	0.00	NONE	NONE	2.00
2 80B/20	GREGORY AVE	2.07	0.00	NONE	DEV. APPLIC. APPROVED	0.00
3 80B/20-B	HUTTON AVENUE	4.00	0.00	NONE	DEV. APPLIC. APPROVED	0.00
4 81A/1-A	RIDGE ROAD	3.12	0.00	NONE	NONE	3.12
5 82A/7	RIDGE ROAD	7.90	0.00	NONE	NONE	7.90
6 82B/1	PROSPECT AVENUE	7.88	0.00	NONE	NONE	7.88
7 82B/7	PROSPECT AVENUE	8.00	0.00	NONE	NONE	8.00
8 82B/13	PROSPECT AVENUE	2.65	0.00	NONE	DEV. APPLIC. APPROVED	0.00
9 82C/10,21	MT. PLEASANT AVENUE	12.66	0.00	NONE	NONE	12.66
10 92/1	PARK WAY	2.23	1.40	STEEP SLOPES	HIST. DIST.	0.00
11 93A/1	TULIP AVENUE	6.51	2.00	STEEP SLOPES	HIST. DIST.	0.00
12 98/1	PARK WAY	16.77	2.20	STEEP SLOPES	HIST. DIST.	0.00
13 106/5	PROSPECT AVENUE	14.81	0.00	NONE	DEV. APPLIC. APPROVED	0.00
106/16-C						
14 106/20	PROSPECT AVENUE	10.01	0.00	NONE	DEV. APPLIC. APPROVED	0.00
15 107/1	PROSPECT AVENUE	17.31	14.89	WET LAND,FLOOD PLAIN	DEV. APPLIC. APPROVED	0.00
16 107/1A	PROSPECT AVENUE	2.31	0.00	NONE	DEV. APPLIC. APPROVED	0.00
17 108/1	PROSPECT AVENUE	7.35	1.78	STEEP SLOPES	DEV. APPLIC APPROVED	0.00
18 108/2	PROSPECT AVENUE	9.50	0.00	NONE	DEV. APPLIC. APPROVED	0.00
19 108/4	PROSPECT AVENUE	7.80	0.00	NONE	DEV. APPLIC. APPROVED	0.00
108/16						
20 109/3	MOUNTAIN AVENUE	6.10	2.03	STEEP SLOPES	HIST. DIST.	0.00
21 109/3B	MOUNTAIN AVENUE	7.70	2.57	STEEP SLOPES	HIST. DIST.	0.00
22 110/1	EAGLE ROCK AVENUE	25.00	0.00	NONE	DEV. APPLIC. APPROVED	0.00
23 110/10	EAGLE ROCK AVENUE	5.51	1.83	STEEP SLOPES	DEV. APPLIC. APPROVED	0.00
24 151/1	PROSPECT AVENUE	183.01	32.99	WET LAND,FLOOD HAZARD, STEEP SLOPES	COUNTRY CLUB/ GULF	0.00
25 152R/(980-984), (1023-1035)	EAGLE STREET	2.64	0.68	FLOOD HAZARD	NONE	1.96
S/1061, (1071-1085), (1124-1134), (1150- 1154)	REDWOOD STREET	3.96	0.86	FLOOD HAZARD	NONE	3.10
T/(1175-1205), (1221- 1266)	HENRY STREET	5.56	0.86	FLOOD HAZARD	NONE	4.70
U/(1276-1324), (1329- 1340), (1344-1364), (1369-1390), 1407	HENRY STREET	8.20	0.97	FLOOD HAZARD	NONE	7.23
26 152X/1445-B	PROSPECT AVENUE	10.00	6.08	STEEP SLOPES	DEV. APPLIC.	

27	152X/1445-C	PROSPECT AVENUE	6.71	2.00	FLOOD HAZARD	PENDING	3.92
						DEV. APPLIC.	
						PENDING	4.71
28	152X/1445-D	PROSPECT AVENUE	9.58	7.39	FLOOD HAZARD, STEEP SLOPES	NONE	2.19
29	154U/34, 32D	PLEASANT VALLEY WAY & RT. 280	6.40	4.77	WET LAND, FLOOD HAZARD	NONE	1.63
30	155/38-C	PROSPECT AVENUE	61.92	20.18	FLOOD HAZARD, STEEP SLOPES	DEV. APPLIC.	
						APPROVED	0.00
31	155/40-C	PROSPECT AVENUE	4.88	0.00	NONE	DEV. APPLIC.	
						APPROVED	0.00
32	156/1, 11, 16, 17, 19, 29A, 40, 43, 49, 59, 61, 67, 68,	PROSPECT & MT. PLEASANT	339.09	39.59	WET LAND, FLOOD HAZARD	COUNTRY CLUB/ GULF	0.00
33	159E/(1-9)	NORTHFIELD AVENUE	2.25	1.91	FLOOD HAZARD	NONE	0.34
34	160/10	NORTHFIELD AVENUE	114.94	6.54	WET LAND, FLOOD HAZARD	COUNTRY CLUB/ GULF	0.00
35	160A/30	WALKER ROAD	20.75	0.00	NONE	COUNTRY CLUB/ GULF	0.00
36	164/1	HICKORY ROAD	44.02	10.90	STEEP SLOPES	DEV. APPLIC.	
						APPROVED	0.00
37	166/7	NORTHFIELD AVENUE	8.6	2.86	STEEP SLOPES	DEV. APPLIC.	
						PENDING	5.74
38	167/25	CEADER AVENUE	10.95	3.65	STEEP SLOPES	DEV. APPLIC.	
						APPROVED	0.00
39	167/25-A	CEADER AVENUE	12.3	4.10	STEEP SLOPES	DEV. APPLIC.	
						APPROVED	0.00
40	167/30	CEADER AVENUE	9.57	3.19	STEEP SLOPES	DEV. APPLIC.	
						APPROVED	0.00
41	167/30-A	CEADER AVENUE	2.00	0.67	STEEP SLOPES	DEV. APPLIC.	
						APPROVED	0.00
42	167/30-C	CEADER AVENUE	7.42	2.47	STEEP SLOPES	DEV. APPLIC.	
						APPROVED	0.00
43	167/30-D	CEADER AVENUE	2.00	0.67	STEEP SLOPES	DEV. APPLIC.	
						APPROVED	0.00
44	168B/42-A	CEADER AVENUE	2.00	0.91	STEEP SLOPES	NONE	1.09
45	169/6	CEADER AVENUE	34.58	11.52	STEEP SLOPES	NONE	23.06
46	169/10	CEADER AVENUE	11.80	3.93	STEEP SLOPES	NONE	7.87
47	169/14	CEADER AVENUE	12.00	4.00	STEEP SLOPES	NONE	8.00
48	169/18	CEADER AVENUE	29.00	9.67	STEEP SLOPES	NONE	19.33
49	170/1	CEADER AVENUE	14.21	3.67	STEEP SLOPES	NONE	10.54
50	170/3	CEADER AVENUE	21.47	3.08	STEEP SLOPES	NONE	18.39
51	170/5	CEADER AVENUE	23.60	2.41	WET LAND	NONE	21.19
52	170/20	MT. PLEASANT AVENUE	49.41	18.79	WET LAND, STEEP SLOPES	NONE	30.62
53	172/4	ELLISON AVENUE	14.99	0.00	NONE	DEV. APPLIC.	
						APPROVED	0.00
54	172E/10, 12, 14, 16, 18	GARFIELD AVENUE	1.14	0.38	STEEP SLOPES	NONE	0.76
	F/(2-26)	GARFIELD AVENUE	2.81	0.92	STEEP SLOPES	NONE	1.89
	H/(2-22)	GARFIELD AVENUE	1.95	0.65	STEEP SLOPES	NONE	1.3
	I/(2-14)	GARFIELD AVENUE	0.51	0.17	STEEP SLOPES	NONE	0.34
	V/6	GARFIELD AVENUE	5.60	1.86	STEEP SLOPES	NONE	3.74
55	173/12	RT. 280	12.16	0.00	NONE	NONE	12.16
56	174/1	LAUREL ROAD	181.08	16.44	WET LAND, STEEP SLOPES	COUNTRY CLUB/ GULF	0.00
57	175/(395-620)	COOLIDGE ROAD	30.58	1.32	STEEP SLOPES	NONE	29.26
58	177/1	LAUREL ROAD	37.80	7.46	STEEP SLOPES	COUNTRY CLUB/ GULF	0.00
59	177A/1	OVAL ROAD	68.52	3.28	WET LAND, STEEP SLOPES	COUNTRY CLUB/	

60 177B/22	EAGLE ROCK AVENUE	3.06	0.00	NONE	GULF	0.00
61 178/3	OVAL ROAD	18.32	0.00	NONE	NONE	3.06
					DEV. APPLIC.	
					APPROVED	0.00
62 178/5	OVAL ROAD	6.00	0.00	NONE	NONE	6.00
63 178/7	OVAL ROAD	88.30	55.91	STEEP SLOPES	DEV. APPLIC.	
					APPROVED	0.00
64 178/9	SULLIVAN DRIVE	30.00	0.00	NONE	NONE	30.00
65 179/32	SULLIVAN DRIVE	43.55	11.30	STEEP SLOPES	NONE	32.25
66 179/5	SULLIVAN DRIVE	15.78	0.00	NONE	NONE	15.78
TOTAL		1826.1	339.70			353.71

SOURCES: 1987 TAX ASSESSMENT RECORDS

FIELD SURVEY MARCH 1988

U.S. FISH AND WILDLIFE SERVICE NATIONAL WETLAND INVENTORY QUADRANGLE 1979

NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP REVISED DEC. 12, 1980

U.S.G.S. 7.5 MINUTE SERIES SLOPE ZONE ORANGE QUADRANGLE NEW JERSEY, 1975

COMPILED BY: TOWNPLAN ASSOCIATES

TABLE 38

NEW JERSEY COUNCIL ON AFFORDABLE HOUSING  
 LOW AND MODERATE INCOME LIMITS FOR ESSEX COUNTY - 1988

<u>INCOME</u>	<u>1 PERSON</u>	<u>2 PERSON</u>	<u>3 PERSON</u>	<u>4 PERSON</u>	<u>5 PERSON</u>	<u>6 PERSON</u>	<u>7 PERSON</u>	<u>8 PERSON</u>
MEDIAN	\$27,650	\$31,600	\$35,550	\$39,500	\$41,970	\$44,440	\$46,900	\$49,375
MOD	\$22,120	\$25,280	\$28,440	\$31,600	\$33,576	\$35,552	\$37,520	\$39,500
LOW	\$13,825	\$15,800	\$17,775	\$19,750	\$20,985	\$22,220	\$23,450	\$24,687

COMPILED BY: TOWNPLAN ASSOCIATES, 1988

TABLE 39  
MUNICIPAL RECREATION FACILITIES  
WEST ORANGE

#	FACILITY	LOCATION	AREA (ACRES)	AVAILABLE FACILITIES
1.	COLGATE FIELD	FRANKLIN & CHERRY STREET	8	1,2,3,4,5,6,9,10,11,12
2.	BYRNE PARK	WASHINGTON & LIBERTY STREET	1	1,6,7.
3.	LAFAYETTE PARK	MAIN STREET & PARK AVENUE	2	1,2,3,4,7,9.
4.	JENKINS PARK	ROSE TERRACE OFF VALLEY	2	1.
5.	ROLLING GREEN HILLS	MT. PLEASANT & GREGORY AVENUE	0.5	5.
6.	STAGG FIELD	ST. CLOUD AVE. OFF NORTHFIELD	13	1,2,3,4,5,6,7,9,10,11.
7.	BOLAND PARK	DOGWOOD RD. & NORTHFIELD AVE.	5	1,2,3,6.
8.	O'CONNOR PARK	RALPH RD. OFF MT. PLEASANT	27	1,2,3,4,5,6,8,9,10,13.
9.	JOSEPH G. MINISH PARK	LANCASTER TERR. OFF PL. VALLEY WAY	2	1,2,3.
10.	DEGNAN PARK	TRACEY AVE. OFF PL. VALLEY WAY	10	1,2,3,4,5,6,7,9,10,11.
TOTAL			70.5	

AVAILABLE FACILITIES

- |                     |                        |
|---------------------|------------------------|
| 1. CHILDREN AREA    | 8. HANDBALL COURTS     |
| 2. BASEBALL FIELD   | 9. FIELD HOUSE         |
| 3. SOFTBALL FIELD   | 10. SOCCER FIELD       |
| 4. FOOTBALL FIELD   | 11. LIT FACILITIES     |
| 5. TENNIS COURT     | 12. SWIMMING           |
| 6. BASKETBALL COURT | 13. RACQUETBALL COURTS |
| 7. ICE SKATING      |                        |

SOURCE: West Orange Department of Recreation  
COMPILED BY: Townplan Associates, 1988

TABLE 39  
MUNICIPAL RECREATION FACILITIES  
WEST ORANGE

#	FACILITY	LOCATION	AREA (ACRES)	AVAILABLE FACILITIES
1.	COLGATE FIELD	FRANKLIN & CHERRY STREET	8	1,2,3,4,5,6,9,10,11,12
2.	BYRNE PARK	WASHINGTON & LIBERTY STREET	1	1,6,7.
3.	LAFAYETTE PARK	MAIN STREET & PARK AVENUE	2	1,2,3,4,7,9.
4.	JENKINS PARK	ROSE TERRACE OFF VALLEY	2	1.
5.	ROLLING GREEN HILLS	MT. PLEASANT & GREGORY AVENUE	0.5	5.
6.	STAGG FIELD	ST. CLOUD AVE. OFF NORTHFIELD	13	1,2,3,4,5,6,7,9,10,11.
7.	BOLAND PARK	DOGWOOD RD. & NORTHFIELD AVE.	5	1,2,3,6.
8.	O'CONNOR PARK	RALPH RD. OFF MT. PLEASANT	27	1,2,3,4,5,6,8,9,10,13.
9.	JOSEPH G. MINISH PARK	LANCASTER TERR. OFF PL. VALLEY WAY	2	1,2,3.
10.	DEGNAN PARK	TRACEY AVE. OFF PL. VALLEY WAY	10	1,2,3,4,5,6,7,9,10,11.
TOTAL			70.5	

AVAILABLE FACILITIES

- |                     |                        |
|---------------------|------------------------|
| 1. CHILDREN AREA    | 8. HANDBALL COURTS     |
| 2. BASEBALL FIELD   | 9. FIELD HOUSE         |
| 3. SOFTBALL FIELD   | 10. SOCCER FIELD       |
| 4. FOOTBALL FIELD   | 11. LIT FACILITIES     |
| 5. TENNIS COURT     | 12. SWIMMING           |
| 6. BASKETBALL COURT | 13. RACQUETBALL COURTS |
| 7. ICE SKATING      |                        |

SOURCE: West Orange Department of Recreation  
COMPILED BY: Townplan Associates, 1988

TABLE 40

STANDARDS FOR OPEN SPACE AND RECREATION FACILITIES

COMPONENT	USE	SERVICE AREA	DESIRABLE SIZE	ACRES/1,000 POPULATION	DESIRABLE SITE CHARACTERISTICS
<b>A. LOCAL/CLOSE-TO-HOME SPACE:</b>					
Mini-Park	Specialized facilities that serve a concentrated or limited population or specific group such as tots or senior citizens.	Less than 1/4 mile radius	1 acre or less	0.25 to 0.5A	Within neighborhoods and in close proximity to apartment complexes, townhouse development or housing for the elderly.
Neighborhood Park/Playground	Area for intense recreational activities, such as field games, crafts, playground apparatus area, skating, picnicking, wading pools, etc.	1/4 to 1/2 mile radius to serve a population up to 5,000 (a neighborhood).	15+ acres	1.0 to 2.0A	Suited for intense development. Easily accessible to neighborhood population—geographically centered with safe walking and bike access. May be developed as a school-park facility.
Community Park	Area of diverse environmental quality. May include areas suited for intense recreational facilities, such as athletic complexes, large swimming pools. May be an area of natural quality for outdoor recreation, such as walking, viewing, sitting, picnicking. May be any combination of the above, depending upon site suitability and community need.	Several neighborhoods. 1 to 2 mile radius.	25+ acres	5.0 to 8.0A	May include natural features, such as water bodies, and areas suited for intense development. Easily accessible to neighborhood served.
TOTAL CLOSE-TO-HOME SPACE = 6.25-10.5 A/1,000					

TABLE 40 (Continued)

ACTIVITY/ FACILITY	RECOMMENDED SPACE REQUIREMENTS	RECOMMENDED SIZE AND DIMENSIONS	RECOMMENDED ORIENTATION	NO. OF UNITS PER POPULATION	SERVICE RADIUS	LOCATION NOTES
Badminton	1620 sq. ft.	Singles - 17' x 44' Doubles - 20' x 44' with 5' unobstructed area on all sides	Long axis north-south	1 per 5000	¼-½ mile	Usually in school, rec- reation center, or church facility. Safe walking or bike access.
Basketball 1. Youth 2. High School 3. Collegiate	2400-3036 sq. ft. 5040-7280 sq. ft. 5600-7980 sq. ft.	46' 50" x 84' 50' x 84' 50' x 94' with 5' unobstructed space on all sides	Long axis north-south	1 per 5000	¼-½ mile	Same as badminton. Outdoor courts in neighborhood and com- munity parks, plus active recreation areas in other park settings.
Handball (3-4 wall)	800 sq. ft. for 4-wall, 1000 for 3-wall	20' x 40' - Minimum of 10' to rear of 3-wall court. Minimum 20' overhead clearance.	Long axis north-south. Front wall at north end.	1 per 20,000	15-30 minute travel time	4-wall usually indoor as part of multi-purpose facility. 3-wall usually outdoor in park or school setting.
Ice Hockey	22,000 sq. ft. including support area.	Rink 85' x 200' (minimum 85' x 185'). Additional 5000 sq. ft. support area.	Long axis north-south if outdoor	Indoor-1 per 100,000. Outdoor—depends on climate.	¼-1 hour travel time	Climate important consideration affecting no. of units. Best as part of multi-purpose facility.
Tennis	Minimum of 7,200 sq. ft. single court. (2 acres for complex.)	36' x 78'. 12' clearance on both sides; 21' clearance on both ends.	Long axis north-south.	1 court per 2000.	¼-½ mile	Best in batteries of 2-4. Located in neighbor- hood/community park or adjacent to school site.
Volleyball	Minimum of 4,000 sq. ft.	30' x 60'. Minimum 6' clearance on all sides.	Long axis north-south	1 court per 5000.	¼-½ mile	Same as other court activities (e.g., bad- minton, basketball, etc.)
Baseball 1. Official 2. Little League	3.0-3.85 A minimum  1.2 A minimum	• Baselines—90' Pitching distance— 60 ½' Foul lines—min. 320' Center field—400'+  • Baselines—60' Pitching distance—48' Foul lines—200' Center field—200'- 250'	Locate home plate so pitcher throwing across sun and batter not facing it. Line from home plate through pitcher's mound run east-north-east.	1 per 5000  Lighted—1 per 30,000	¼-½ mile	Part of neighborhood complex. Lighted fields part of com- munity complex.
Field Hockey	Minimum 1.5A	180' x 300' with a minimum of 10' clearance on all sides.	Fall season—long axis northwest to southeast. For longer periods, north to south.	1 per 20,000	15-30 minutes travel time	Usually part of base- ball, football, soccer complex in community park or adjacent to high school.

TABLE 40 (Continued)

ACTIVITY/ FACILITY	RECOMMENDED SPACE REQUIREMENTS	RECOMMENDED SIZE AND DIMENSIONS	RECOMMENDED ORIENTATION	NO. OF UNITS PER POPULATION	SERVICE RADIUS	LOCATION NOTES
Football	Minimum 1.5A	180' x 380' with a minimum of 8' clearance on all sides.	Same as field hockey.	1 per 20,000	15-30 minutes travel time	Same as field hockey.
Soccer	1.7 to 2.1A	195' to 225' x 330' to 380' with a 10' minimum clearance on all sides.	Same as field hockey.	1 per 10,000	1-2 miles	Number of units depends on popularity. Youth soccer on smaller fields adjacent to schools or neighborhood parks.
Golf—Driving Range	13.5A for minimum of 25 tees	900' x 690' wide. Add 12' width for each additional tee.	Long axis south-west-northeast with golfer driving toward north-east.	1 per 50,000	30 minutes travel time	Part of golf course complex. As a separate unit, may be privately operated.
X-Mile Running Track	4.3A	Overall width—276' length—600.02' Track width for 8 to 4 lanes is 32'.	Long axis in sector from north to south to north-west-south-east with finish line at northerly end.	1 per 20,000	15-30 minutes travel time	Usually part of high school, or in community park complex in combination with football, soccer, etc.
Softball	1.5 to 2.0A	Baselines—60' Pitching distance—46' min. 40'—women. Fast pitch field radius from plate—225' between foul lines. Slow pitch—275' (men) 250' (women)	Same as baseball.	1 per 5,000 (if also used for youth baseball)	X-½ mile	Slight difference in dimensions for 18" slow pitch. May also be used for youth baseball.
Multiple Recreation Court (basketball, volleyball, tennis)	9,840 sq. ft.	120' x 80'	Long axis of courts with primary use is north-south.	1 per 10,000	1-2 miles.	
Trails	N/A	Well defined head maximum 10' width, maximum average grade 5% not to exceed 15%. Capacity rural trails—40 hikers/day/mile. Urban trails—90 hikers/day/mile.	N/A	1 system per region	N/A	
Archery Range	Minimum 0.65A	300' length x minimum 10' wide between targets. Roped clear space on sides of range minimum of 30', clear space behind targets minimum of 90' x 45' with bunker.	Archer facing north + or - 45°.	1 per 50,000	30 minutes travel time	Part of a regional/metro park complex.

TABLE 40 (Concluded)

ACTIVITY/ FACILITY	RECOMMENDED SPACE REQUIREMENTS	RECOMMENDED SIZE AND DIMENSIONS	RECOMMENDED ORIENTATION	NO. OF UNITS PER POPULATION	SERVICE RADIUS	LOCATION NOTES
Combination Skeet and Trap Field (8 station)	Minimum 30A	All walks and structures occur within an area approximately 130' wide by 115' deep. Minimum cleared area is contained within two superimposed segments with 100-yard radii (4 acres). Shot-fall danger zone is contained within two superimposed segments with 300-yard radii (36 acres).	Center line of length runs northeast-southwest with shooter facing northeast.	1 per 50,000	30 minutes travel time	Part of a regional/metro park complex.
GoH 1. Per 3 (18-Hole) 2. 9-hole standard 3. 18-hole standard	• 50-60A  • Minimum 50A  • Minimum 110A	• Average length-vary 600-2700 yards  • Average length-2250 yards  • Average length-6500 yards	Majority of holes on north-south axis.	--  • 1/25,000  • 1/50,000	½ to 1 hour travel time	• 9-hole course can accommodate 350 people/day. • 18-hole course can accommodate 500-550 people a day. Course may be located in community or district park, but should not be over 20 miles from population center.
Swimming Pools	Varies on size of pool and amenities. Usually ½ to 2A site.	<i>Teaching</i> —minimum of 25 yards x 45' even depth of 3 to 4 feet. <i>Competitive</i> —minimum of 25m x 16m. Minimum of 27 square feet of water surface per swimmer. Ratios of 2:1 deck vs. water.	None—although care must be taken in siting of lifeguard stations in relation to afternoon sun.	1 per 20,000 (Pools should accommodate 3 to 5% of total population at a time.)	15 to 30 minutes travel time	Pools for general community use should be planned for teaching, competitive, and recreational purposes with enough depth (3.4m) to accommodate 1m and 3m diving boards. Located in community park or school site.
Beach Areas	N/A	Beach area should have 50 sq. ft. of land and 50 sq. ft. of water per user. Turnover rate is 3. There should be 3-4A supporting land per A of beach.	N/A	N/A	N/A	Should have sand bottom with slope a maximum of 5% (flat preferable). Boating areas completely segregated from swimming areas.

SOURCE: NATIONAL RECREATION AND PARK ASSOCIATION REPRINTED FROM MODEL SUBDIVISION AND SITE PLAN ORDINANCE, NEW JERSEY DEPARTMENT OF COMMUNITY AFFAIRS, JANUARY, 1987

TABLE 41  
 OCCUPATIONAL DISTRIBUTION 1970-1980  
 WEST ORANGE

OCCUPATION	1970		1980		1970 - 1980	
	JOBS	PERCENT	JOBS	PERCENT	NET CHANGE	PERCENT CHANGE
Managerial	4231	13.2%	3275	16.6%	-956	-22.6%
Professional \	8322	25.9%	3488	17.6%	-4834	-58.1%
Technical /	0	0.0%	396	2.0%	396	---
Administrative Support/Clerical	4514	14.0%	4286	21.7%	-228	-5.1%
Sales	4188	13.0%	2652	13.4%	-1536	-36.7%
Private Household Services	152	0.5%	60	0.3%	-92	-60.5%
Protective Services	385	1.2%	436	2.2%	51	13.2%
Other Services	2551	7.9%	1482	7.5%	-1069	-41.9%
Farm/Forest/Fish	10	0.0%	127	0.6%	117	1170.0%
Production/Craft/Repair	3698	11.5%	1739	8.8%	-1959	-53.0%
Machine Operators, Etc.	2624	8.2%	851	4.3%	-1773	-67.6%
Transportation/Material Moving	436	1.4%	489	2.5%	53	12.2%
Handlers/Laborers	1022	3.2%	483	2.4%	-539	-52.7%
TOTAL	32133	100.0%	19764	100.0%	-12369	-38.5%

SOURCE: U.S. Census of Population, 1970 & 1980

Note: "Jobs" refers to the number of Borough residents employed in each occupation. The place of employment is not necessarily within the Township of West Orange.

COMPILED BY: Townplan Associates, 1988

TABLE 42  
1980 REGIONAL OCCUPATIONAL DISTRIBUTION  
WEST ORANGE & ESSEX COUNTY

OCCUPATION	WEST ORANGE		ESSEX COUNTY	
	JOBS	PERCENT	JOBS	PERCENT
Managerial	3275	16.6%	39785	11.1%
Professional	3488	17.6%	48755	13.6%
Technical	396	2.0%	9126	2.5%
Administrative Support/Clerical	4286	21.7%	76866	21.4%
Sales	2652	13.4%	30971	8.6%
Private Household Services	60	0.3%	2840	0.8%
Protective Services	436	2.2%	8925	2.5%
Other Services	1482	7.5%	35762	10.0%
Farm/Forest/Fish	127	0.6%	1435	0.4%
Production/Craft/Repair	1739	8.8%	33991	9.5%
Machine Operators, Etc.	851	4.3%	38679	10.8%
Transportation/Material Moving Handlers/Laborers	489	2.5%	14608	4.1%
	483	2.4%	17014	4.7%
TOTAL	19764	100.0%	358757	100.0%

Note: "Jobs" refers to the number of municipal or county residents, respectively, employed in each occupation. The place of employment is not necessarily within the respective municipality or county.

Source: 1980 Census of Population, STF IV  
Compiled By: Townplan Associates, 1988

TABLE NO. 43

HISTORIC SITES INVENTORY

1. DESCRIPTION: BETHANY EVANGELICAL FREE CHURCH  
LOCATION: 30 ASHWOOD TERRACE
2. DESCRIPTION: QUEEN ANNE RESIDENTIAL BUILDING  
LOCATION: 60 BENVENUE AVENUE
3. DESCRIPTION: STONELEA  
LOCATION: BEVERLY ROAD
4. DESCRIPTION: 2 1/2 STORY GEORGIAN/ADAM RESIDENTIAL BUILDING  
LOCATION: 47 BEVERLY ROAD
5. DESCRIPTION: EAGLE ROCK SCHOOL  
LOCATION: 179 EAGLE ROCK AVENUE
6. DESCRIPTION: 2 1/2 STORY GOTHIC RESIDENTIAL BUILDING  
LOCATION: 695 EAGLE ROCK AVENUE
7. DESCRIPTION: 2 1/2 STORY ECLECTIC RESIDENTIAL BUILDING  
LOCATION: 727 EAGLE ROCK AVENUE
8. DESCRIPTION: 2 STORY FRENCH ECLECTIC RESIDENTIAL BUILDING  
LOCATION: EDGEWOOD AVENUE
9. DESCRIPTION: 3 STORY SECOND EMPIRE RESIDENTIAL BUILDING  
LOCATION: 6 FAIRVIEW AVENUE
10. DESCRIPTION: 2 1/2 STORY GOTHIC REVIVAL RESIDENTIAL BUILDING  
LOCATION: 15 FAIRVIEW AVENUE
11. DESCRIPTION: 2 1/2 STORY SECOND EMPIRE RESIDENTIAL BUILDING  
LOCATION: 18 FAIRVIEW AVENUE
12. DESCRIPTION: 2 STORY COLONIAL REVIVAL RESIDENTIAL BUILDING  
LOCATION: 27 FAIRVIEW AVENUE

13. DESCRIPTION: 3 STORY SECOND EMPIRE RESIDENTIAL BUILDING  
LOCATION: 28 FAIRVIEW AVENUE
14. DESCRIPTION: 1 1/2 STORY SECOND EMPIRE RESIDENTIAL BUILDING  
LOCATION: 32 FAIRVIEW AVENUE
15. DESCRIPTION: 2 1/2 SECOND EMPIRE RESIDENTIAL BUILDING  
LOCATION: 48 FAIRVIEW AVENUE
16. DESCRIPTION: 2 STORY FARMHOUSE WITH GREEK REVIVAL FEATURES  
LOCATION: 52 FAIRVIEW AVENUE
17. DESCRIPTION: 3 STORY COLONIAL REVIVAL RESIDENTIAL BUILDING  
LOCATION: 64 FOREST HILL ROAD
18. DESCRIPTION: 3 STORY FRENCH SECOND EMPIRE RESIDENTIAL  
BUILDING  
LOCATION: 68 FOREST HILL ROAD
19. DESCRIPTION: 2 1/2 STORY QUEEN ANNE RESIDENTIAL BUILDING  
LOCATION: 72 FOREST HILL ROAD
20. DESCRIPTION: 2 1/2 STORY GOTHIC REVIVAL RESIDENTIAL BUILDING  
LOCATION: 86 FOREST HILL ROAD
21. DESCRIPTION: 2 1/2 STORY QUEEN ANNE RESIDENTIAL BUILDING  
LOCATION: 88 FOREST HILL ROAD
22. DESCRIPTION: 2 1/2 STORY QUEEN ANNE RESIDENTIAL BUILDING  
LOCATION: 92 FOREST HILL ROAD
23. DESCRIPTION: 2 1/2 STORY QUEEN ANNE RESIDENTIAL BUILDING  
LOCATION: 96 FOREST HILL ROAD
24. DESCRIPTION: 2 1/2 STORY QUEEN ANNE RESIDENTIAL BUILDING  
LOCATION: 100 FOREST HILL ROAD

25. DESCRIPTION: 2 1/2 STORY QUEEN ANNE RESIDENTIAL BUILDING  
LOCATION: 106 FOREST HILL ROAD
26. DESCRIPTION: 2 1/2 STORY QUEEN ANNE RESIDENTIAL BUILDING  
LOCATION: 110 FOREST HILL ROAD
27. DESCRIPTION: 1 STORY TUDOR RESIDENTIAL BUILDING  
LOCATION: 186-8 GREGORY PLACE
28. DESCRIPTION: 2 STORY FARMHOUSE  
LOCATION: 195 GREGORY AVENUE
29. DESCRIPTION: HAZEL AVENUE SCHOOL  
LOCATION: 45 HAZEL AVENUE
30. DESCRIPTION: HAZEL AVENUE SCHOOL - ADDITION  
LOCATION: 45 HAZEL AVENUE
31. DESCRIPTION: CHURCH OF GOD  
LOCATION: 135 HIGH STREET
32. DESCRIPTION: 3 STORY VERNACULAR SHINGLE RESIDENTIAL BUILDING  
LOCATION: 62 HILLSIDE AVENUE
33. DESCRIPTION: 2 1/2 STORY GOTHIC REVIVAL RESIDENTIAL BUILDING  
LOCATION: 78 HILLSIDE AVENUE
34. DESCRIPTION: 2 1/2 STORY QUEEN ANNE RESIDENTIAL BUILDING  
LOCATION: 85 HILLSIDE AVENUE
35. DESCRIPTION: 2 1/2 STORY QUEEN ANNE RESIDENTIAL BUILDING  
LOCATION: 25 LUDDINGTON ROAD
36. DESCRIPTION: 2 1/2 STORY VERNACULAR RESIDENTIAL BUILDING  
LOCATION: 27 LUDDINGTON AVENUE
37. DESCRIPTION: ST. MARK'S EPISCOPAL CHURCH  
LOCATION: 13 MAIN STREET

38. DESCRIPTION: 3 STORY QUEEN ANNE RESIDENTIAL BUILDING  
LOCATION: 122 MAIN STREET
39. DESCRIPTION: LLEWELLYN PARK  
LOCATION: MAIN STREET AT PARK AVENUE
40. DESCRIPTION: EDISON LABS  
LOCATION: MAIN STREET BETWEEN ALDEN AND LAKESIDE AVENUES
41. DESCRIPTION: WEST ORANGE COMMUNITY HOUSE  
LOCATION: 242 MAIN STREET
42. DESCRIPTION: 3 STORY CLASSIC REVIVAL COMMERCIAL/RESIDENTIAL  
BUILDING  
LOCATION: 269-271 MAIN STREET
43. DESCRIPTION: 3 STORY CLASSICIZING COMMERCIAL/RESIDENTIAL  
BUILDING  
LOCATION: 288-290 MAIN STREET
44. DESCRIPTION: WASHINGTON STREET SCHOOL  
LOCATION: 289 MAIN STREET
45. DESCRIPTION: HOLY TRINITY EPISCOPAL CHURCH  
LOCATION: 307 MAIN STREET
46. DESCRIPTION: 2 STORY DWELLING C. 1880  
LOCATION: 525 MELROSE PLACE
47. DESCRIPTION: 2 1/2 STORY GOTHIC RESIDENTIAL BUILDING  
LOCATION: 33 MOUNT PLEASANT AVENUE
48. DESCRIPTION: 3 STORY QUEEN ANNE RESIDENTIAL BUILDING  
LOCATION: 47 PARK AVENUE
49. DESCRIPTION: HOLY INNOCENTS EPISCOPAL CHURCH  
LOCATION: 681 PROSPECT AVENUE
50. DESCRIPTION: 2 1/2 STORY RESIDENTIAL BUILDING C. 1890  
LOCATION: 1 RIDGEWAY AVENUE

51. DESCRIPTION: 3 STORY SECOND EMPIRE RESIDENTIAL BUILDING  
LOCATION: 5 RIDGEWAY AVENUE
52. DESCRIPTION: THE ST. CLOUD PRESBYTERIAN CHURCH  
LOCATION: 6 RIDGEWAY AVENUE
53. DESCRIPTION: THE MONASTERY OF ST. CLOUD  
LOCATION: 29 RIDGEWAY AVENUE
54. DESCRIPTION: 3 STORY SECOND EMPIRE RESIDENTIAL BUILDING  
LOCATION: 30 RIDGEWAY AVENUE
55. DESCRIPTION: 2 1/2 STORY FOLK VICTORIAN RESIDENTIAL BUILDING  
LOCATION: 34 RIDGEWAY AVENUE
56. DESCRIPTION: 2 1/2 STORY FOLK VICTORIAN RESIDENTIAL BUILDING  
LOCATION: 36 RIDGEWAY AVENUE
57. DESCRIPTION: THE AUGUSTINIAN RECOLLECT SISTERS  
LOCATION: 55 RIDGEWAY AVENUE
58. DESCRIPTION: 2 STORY SECOND EMPIRE RESIDENTIAL BUILDING  
LOCATION: 58 RIDGEWAY AVENUE
59. DESCRIPTION: 2 STORY SECOND EMPIRE RESIDENTIAL BUILDING  
LOCATION: 60 RIDGEWAY AVENUE
60. DESCRIPTION: 2 STORY FARMHOUSE C. 1870  
LOCATION: 81 RIDGEWAY AVENUE
61. DESCRIPTION: ST. JOSEPH'S ROMAN CATHOLIC CHURCH  
LOCATION: 8 ST. CLOUD PLACE
62. DESCRIPTION: 2 1/2 STORY GOTHIC REVIVAL RESIDENTIAL BUILDING  
LOCATION: 21 SOUTH VALLEY ROAD
63. DESCRIPTION: 2 STORY RESIDENTIAL BUILDING WITH GOTHIC  
REVIVAL INFLUENCE  
LOCATION: 35-37 VALLEY ROAD
64. DESCRIPTION: RESIDENTIAL BUILDING

LOCATION: 41 VALLEY WAY

65. DESCRIPTION: 2 1/2 STORY QUEEN ANNE RESIDENTIAL BUILDING

LOCATION: 50 WALKER AVENUE

66. DESCRIPTION: WEST ORANGE HOSE CO. NO. 2

LOCATION: 92 WASHINGTON STREET

67. DESCRIPTION: 2 1/2 STORY QUEEN ANNE RESIDENTIAL BUILDING

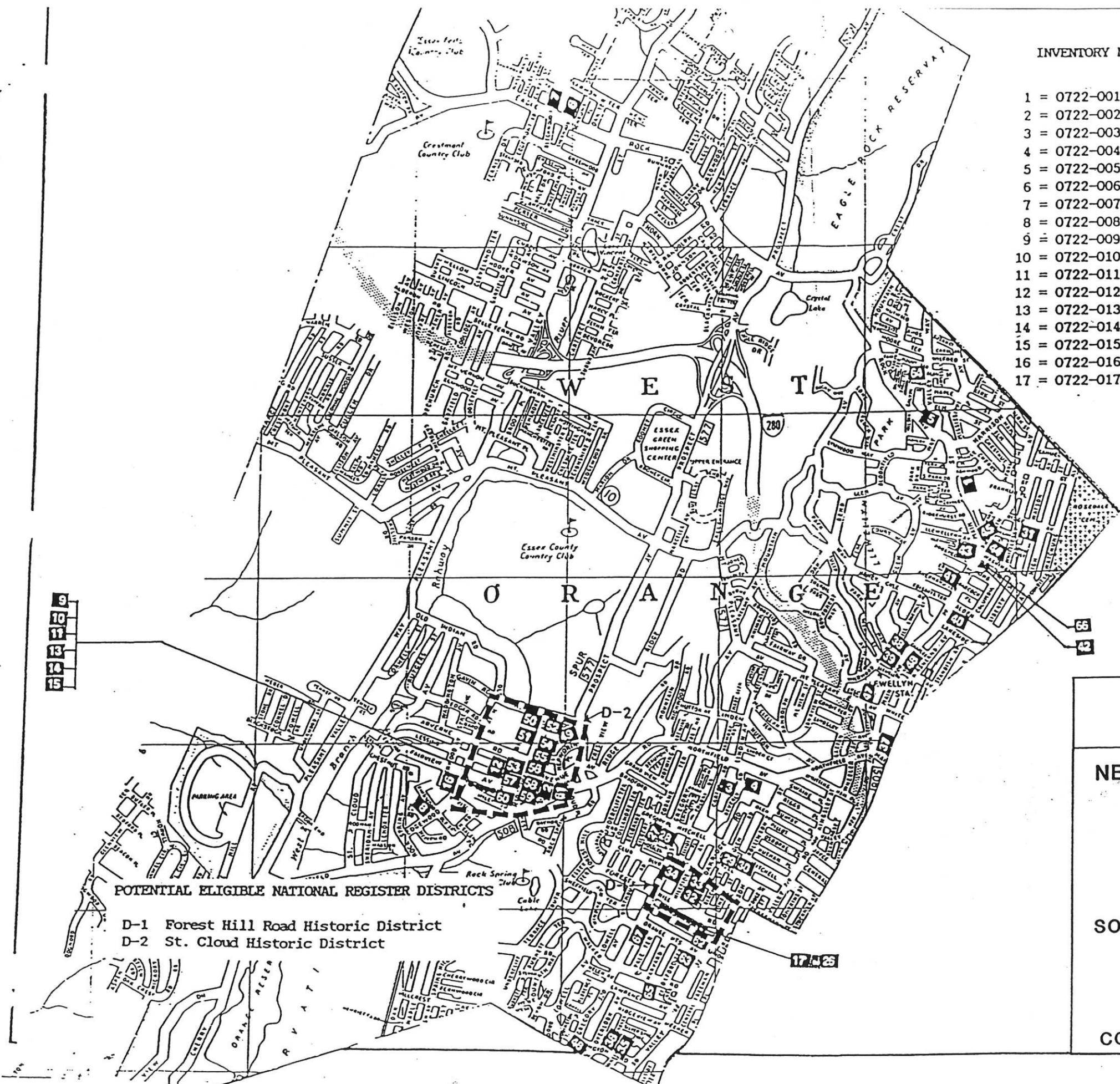
LOCATION: 1 YALE TERRACE

SOURCE: COUNTY OF ESSEX, DEPARTMENT OF PLANNING AND ECONOMIC  
DEVELOPMENT, JULY 1986

INVENTORY NUMBERS OF SURVEYED PROPERTIES

(See Table #43)

1 = 0722-001	18 = 0722-018	43 = 0722-043
2 = 0722-002	19 = 0722-019	44 = 0722-044
3 = 0722-003	20 = 0722-020	45 = 0722-045
4 = 0722-004	21 = 0722-021	46 = 0722-046
5 = 0722-005	22 = 0722-022	47 = 0722-047
6 = 0722-006	23 = 0722-023	48 = 0722-048
7 = 0722-007	24 = 0722-024	49 = 0722-049
8 = 0722-008	25 = 0722-025	50 = 0722-050
9 = 0722-009	26 = 0722-026	51 = 0722-051
10 = 0722-010	27 = 0722-027	52 = 0722-052
11 = 0722-011	28 = 0722-028	53 = 0722-053
12 = 0722-012	29 = 0722-029	54 = 0722-054
13 = 0722-013	30 = 0722-030	55 = 0722-055
14 = 0722-014	31 = 0722-031	56 = 0722-056
15 = 0722-015	32 = 0722-032	57 = 0722-057
16 = 0722-016	33 = 0722-033	58 = 0722-058
17 = 0722-017	34 = 0722-034	59 = 0722-059
	35 = 0722-035	60 = 0722-060
	36 = 0722-036	61 = 0722-061
	37 = 0722-037	62 = 0722-062
	38 = 0722-038	63 = 0722-063
	39 = 0722-039	64 = 0722-064
	40 = 0722-040	65 = 0722-065
	41 = 0722-041	66 = 0722-066
	42 = 0722-042	67 = 0722-067



POTENTIAL ELIGIBLE NATIONAL REGISTER DISTRICTS

- D-1 Forest Hill Road Historic District
- D-2 St. Cloud Historic District

FIGURE 16

NEW JERSEY HISTORIC SITES INVENTORY  
ESSEX COUNTY, NEW JERSEY

TOWNSHIP OF WEST ORANGE

SOURCE: COUNTY OF ESSEX DEPARTMENT OF  
PLANNING AND ECONOMIC DEVELOPMENT  
JULY 1986

COMPILED BY: TOWNPLAN ASSOCIATES 1988

*1989 Master Plan*  
*Township of West Orange, New Jersey*

