[redacted], South Brunswick 1982

- Master Plan

pgs. 54 (double sided)

Notes - maps included

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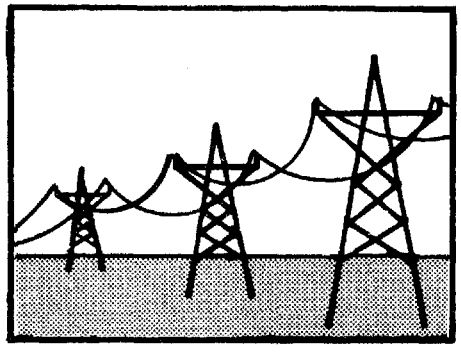
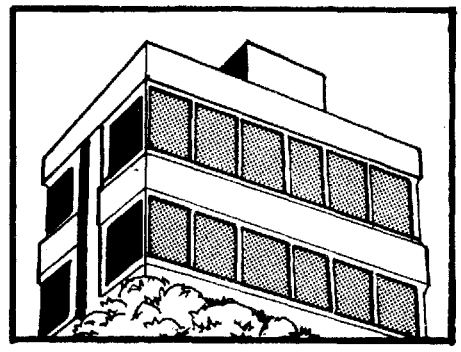
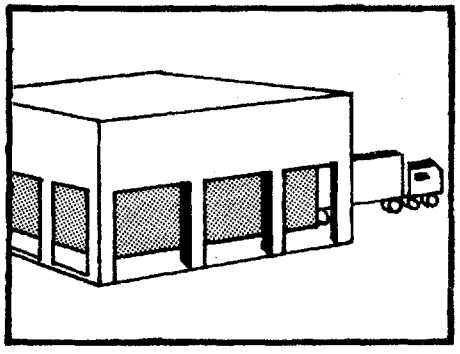
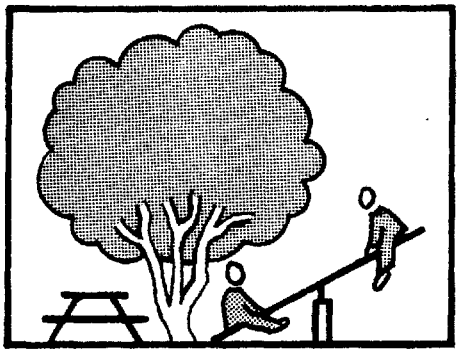
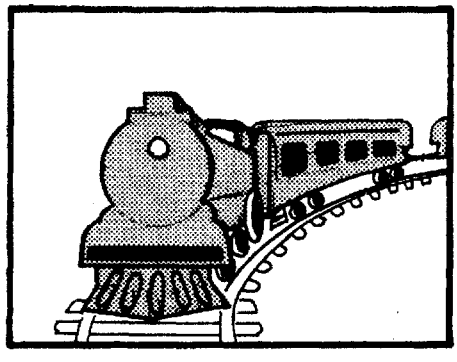


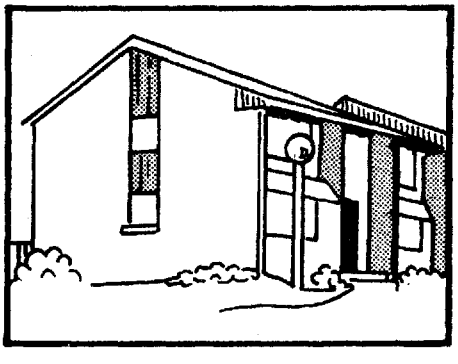


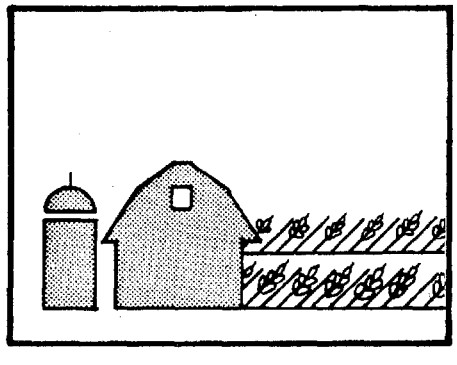


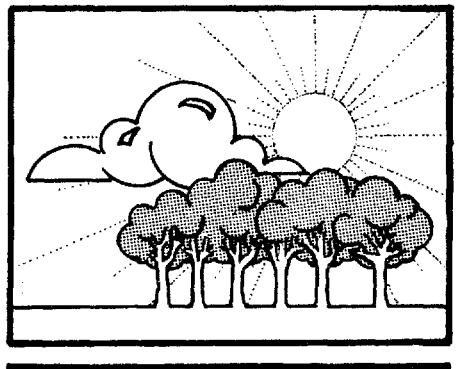
SOUTH BRUNSWICK TOWNSHIP











1982 MASTER PLAN

MASTER PLAN

Township of South Brunswick

Middlesex County, New Jersey

July, 1982

Prepared by:

QUEALE & LYNCH, INC.
2210 Yardley Road
Yardley, Pennsylvania 19067

John J. Lynch P.P.#19, AICP

SOUTH BRUNSWICK PLANNING BOARD

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David Matos
Richard Mittenthal
Paul Murray
Jerry Yaros

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Richard Mittenthal, Deputy Mayor
Theodore Cherry
Robert Faber
Bruce Jones

1982
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Robert Faber, Deputy Mayor
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Theodore Cherry
Carolyn McCallum

SOUTH BRUNSWICK DEPARTMENT OF PLANNING AND DEVELOPMENT

David H. Engel, P.P., A.I.C.P., Director of Planning
Leslie Luchonok, Assistant Director of Planning
Beatrice B. Cicchino, Administrative Secretary

TOWNSHIP OF SOUTH BRUNSWICK

Municipal Building **Monmouth Junction, N. J. 08852**

Phone
201 329-4000

Dear Citizens of South Brunswick Township:

On behalf of the South Brunswick Planning Board, I would like to thank all the volunteers and residents who have been involved in the development and preparation of the Township Master Plan over the last two years. Since the end of 1980, the Planning Board has been conducting monthly Planning Board workshop meetings, in an effort to openly discuss each component of the Master Plan. Once the Master Plan draft document was compiled, the Planning Board conducted numerous neighborhood meetings throughout the township, in an effort to solicit a diversity of points of view throughout the community, which exceeded the legal public hearing requirements for a Master Plan adoption.

We hope that the 1982 Master Plan will provide guidance to the township and will meet the people's needs for the future. That is certainly our interest.

We also wish to thank members of the Township Committees and various boards and commissions who have supported our efforts over the last several years.

For a better future!

Bernard P. Indik

Bernard P. Indik Chairman
South Brunswick Planning
Board

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MASTER PLAN

Township of South Brunswick

Middlesex County, New Jersey

1982

REEXAMINATION REPORT

The Municipal Land Use Law (MLUL) requires municipalities to reexamine their master plans at least every six years. The purpose of this requirement is to have regular reviews of current information and changing conditions in the interest of keeping long-range planning as up to date as possible.

In C. 40:55D-89 of the MLUL, the following language is set forth:

> "The governing body shall, at least every 6 years, provide for a general reexamination of its master plan and development regulations by the planning board which shall prepare a report on the findings of such reexamination, a copy of which shall be sent to the county planning board and the municipal clerks of each adjoining municipality. The 6-year period shall commence with the adoption or termination of the last general reexamination of such plan and regulations. The first such reexamination shall be completed within 6 years after the effective date of this act."

South Brunswick adopted its Master Plan on November 26, 1974, with substantive amendments in November, 1977 and August, 1979, at which times the Housing and Town Center Plan Elements, respectively, were incorporated in the Master Plan. The development regulations were completely revised in 1979 in response to the major revisions to the Master Plan and to assure compliance with the requirements of the MLUL.

The statute requires consideration of four areas of concern within the reexamination report. Those areas are identified below along with the response statements.

C.40:55D-89a.

This provision of the MLUL reads as follows:

> "a. The major problems and objectives relating to land development in the municipality at the time of such adoption, last revision or reexamination, if any."

Detailed information on some of the problems facing South Brunswick Township at the time of the adoption of the last revision of the Master Plan is set forth in the background studies incorporated in the 1974 Master Plan. Some

aspects of the 1974 Plan were based on master plan reports prepared in the latter part of the 1960's. However, the 1974 Plan took into account the latest information available at that time, including the 1970 Census. The plan elements adopted in 1977 and 1979 added more current information. In addition, the township was revising its regulatory ordinances to reflect the provisions of the MLUL, which had an effective date of August 1, 1976.

The goals and objectives of the 1974 Master Plan are set forth in detail in the Plan itself, and include an identification of the major problems facing South Brunswick at that time. The following listing identifies the major problems and objectives facing the township in the mid-1970's:

1. Non-compatible land uses that have existed in residential areas should be eliminated or adequately buffered and separated from residential uses.

2. Residential uses should be separated from roads which carry non-residential traffic loads.

3. Residential uses should be clustered and concentrated in wooded areas, both preserving woods and enhancing residential development.

4. Residential density concentrations should be based upon adequate consideration of facilities, utilities and transportation.

5. Creation of a town center area.

6. Filling in of the existing villages of Kendall Park, Franklin Park, Kingston, Monmouth Junction, Deans and Dayton and the creation of new village areas in the vicinity of Dayton, Monmouth Junction and the Heathcote area.

7. A variety of commercial complexes and uses should be planned to meet varying needs; i.e., neighborhood, community and regional commercial, office and professional.

8. The various commercial uses should not conflict with industrial and residential uses, but be compatible to them.

9. Commercial uses should not be scattered, but located in consolidated places, so that circulation to these areas can be controlled properly and so that public transportation may be provided.

10. The major arterial roads and railroads should be directly available to industrial sites.

11. Utilities, such as sewer, water and electric should be available.

12. Large amounts of land with good depth should be available for future expansion.

13. Residential uses opposite, or near, industrial uses should be buffered adequately.

14. Consideration should be given to ecologically sensitive constraints when designing industrial sites. The environment should not be impaired by the development of good ratables.

15. Industries which have light water use should be encouraged.

16. Provision should be made for inter- and intra-township traffic movement.

17. Local traffic should be separated, as much as is possible, from through traffic.

18. Provision of better access to the various land use elements should be made.

19. Safety and efficiency for traffic should be a constant parameter for circulation design.

20. Provision should be made for a variety of modes of transportation, including pedestrian, vehicular, equestrian, cycling and public transportation (rail, bus, etc.).

21. Adequate separation and linkages between various transportation modes should be made.

22. Roadways should be carefully designed to handle necessary volumes; however, they should not be over-designed.

23. Development of adequate housing for low and moderate income families (including senior citizens).

24. Improvement of the existing housing stock in the township.

25. A series of specific objectives for the Town Center area are set forth in the 1979 Plan Revision in detail, but in general they are intended to establish the Town Center area as the focal point for higher density development in the township, with safeguards built in to assure appropriate protection of the natural environment and adequate access to other parts of the township and the region.

C.40:55D-89b.
This provision of the MLUL reads as follows:

"b. The extent to which such problems and objectives have been reduced or have increased subsequent to such date."

Residential development has not kept pace with job growth in spite of an aggressive zoning policy favoring new development. Mortgage financing and general inflationary problems have had the effect of slowing residential growth so that the availability of affordable housing is a greater problem now than it was at the time of the last revision of the Plan.

A need for retail commercial development on Route 1 has been identified to serve the residents who will live in the development corridor planned for the westerly half of the township.

Industrial and office research uses continue to develop, but certain locations now shown for future employment centers appear to be excessive, potentially degrading to the natural environment, and inadequately served by traffic arteries. If development were to occur on these lands, relatively extraordinary infrastructure and development techniques would be required to make the areas suitable for the proposed use.

Some of the intersections along Route 1 have become excessively congested at certain times making it important to provide alternate access roads to developing areas both east and west of the highway, particularly in the central part of the township.

C.40:55D-89c.
This provision of the MLUL reads as follows:

"c. The extent to which there have been significant changes in the assumptions, policies and objectives forming the basis for such plan or regulations as last revised, with particular regard to the density and distribution of population and land uses, housing conditions, circulation, conservation of natural resources, energy conservation, and changes in State, county and municipal policies and objectives."

Since the last major reexamination of the Master Plan in 1974, the Municipal Land Use Law has been enacted. That has set new guidelines for the conduct of municipal planning, some of which were included in the Housing Plan element adopted in 1977, the Town Center Plan Element adopted in 1979, and the Land Use Ordinance, also adopted in 1979.

The background reports summarized in this update of the 1974 Master Plan provide part of the basis for the modifications incorporated in the long-range planning elements of the Master Plan. Other considerations relate to citizens and township official participation in the public meetings held as a part of the Master Plan reexamination process, and planning reports and participation by the professional planning staff of South Brunswick.

C.40:55D-89d.
This provision of the MLUL reads as follows:

"d. The specific changes recommended for such plan or regulations, if any, including underlying objectives, policies and standards, or whether a new plan or regulations should be prepared."

Specific changes in the Plan are incorporated in the various Plan elements. In general, they include a reduction in industrial land, an increase in retail commercial, a decrease in the amount of land shown for residential, and a modification in the traffic circulation system serving the township.

NATURAL RESOURCES

The South Brunswick Planning Department has recently completed an Environmental Resource Inventory identifying physical constraints on development. Such items as topography, excessive wetness, bedrock, prime agricultural soils, aquifer recharge areas, and areas of historic or community importance are identified to assist not only in long-range planning, but as a means of assisting applicants for development in their planning efforts on individual parcels.

Since the Environmental Resource Inventory is published as a separate document, it is incorporated herein by reference. It should be considered an integral part of the Master Plan, and should serve as a basis for evaluating the potential impact of development on environmentally sensitive areas. As a general guide, areas which have steep slopes (in excess of 15 percent), are subject to flooding, have excessive wetness, recharge aquifers, or have a seasonally high water table within 1.5 feet of the surface should have development limitations imposed through the Land Use Ordinance to reduce the potential for development and to minimize impact on these environmentally sensitive lands.

EXISTING LAND USE

During December, 1980, a lot-by-lot land use survey was conducted throughout the township. The observations in the field were noted on a set of tax maps on which the land use data from the 1968 survey had been recorded.

The results of the 1980 survey are shown on Plate 1, Existing Land Use, in tabular form. This compares the 1980 acreage and percent of land coverage by each land use category to the 1960 and 1968 information. The comparison provides an overview of the land use trends in the township. For example, the amount of undeveloped property since 1960 decreased by over 4,000 acres. More than 2,300 of these acres (56%) became public and quasi-public uses, of which about half became streets and other rights-of-way. There are about 800 more acres of industrial development since 1960, almost 100 additional acres of commercial use, and a little under 900 acres of additional residential development.

A comparison of the 1968 and 1980 surveys shows several significant areas where land use changes occurred. Plate 2, which is a map showing the pattern of existing land uses based on the 1980 field survey, and Plate 3, which shows the changes which occurred in mapped form, can assist in understanding the nature of change occurring in the township.

Plate 1

EXISTING LAND USE

1960, 1968, 1980

Land Use Category	Approximate Calculations					
	1960		1968		1980	
	Acres	%	Acres	%	Acres	%
Residential	1,745	7	2,215	8	2,615	10
Commercial	145	*	160	*	240	*
Industrial	1,105	4	1,620	6	1,910	7
Public & Quasi-Public	1,825	7	3,195	12	4,165	16
Vacant, Wooded, Agr., & Water	21,460	82	19,300	73	17,130	66
Total	26,272	100	26,496	100	26,240	100

Sources: 1960 and 1968 data from reports on file in the Planning Department. 1980 data based on field survey by Queale & Lynch, Inc.

* Less than 1 percent.

Note: Total acreage varies according to the most recent State information.

SOUTH BRUNSWICK TOWNSHIP

MIDDLESEX COUNTY, NEW JERSEY

1000 0 1000 3000
500 2000

SCALE IN FEET

SOURCE: TOWNSHIP TAX MAPS 1980

BASE MAP PREPARED BY QUEALE & LYNCH INC. PROFESSIONAL PLANNERS

Plate 2
EXISTING LAND USE
DEC., 1980

- SINGLE FAMILY
- MULTI-FAMILY & MOBILE HOMES
- COMMERCIAL
- INDUSTRIAL & UTILITY
- PUBLIC & QUASI-PUBLIC
- VACANT
- WOODED

SOURCE: FIELD SURVEY - QUEALE & LYNCH, INC.

SOUTH BRUNSWICK TOWNSHIP

MIDDLESEX COUNTY, NEW JERSEY

1000 0 1000 3000
500 2000
SCALE IN FEET

SOURCE: TOWNSHIP TAX MAPS 1980

BASE MAP PREPARED BY QUEALE & LYNCH INC. PROFESSIONAL PLANNERS

Plate 3
LAND USE CHANGES
1968-1980

SINGLE FAMILY

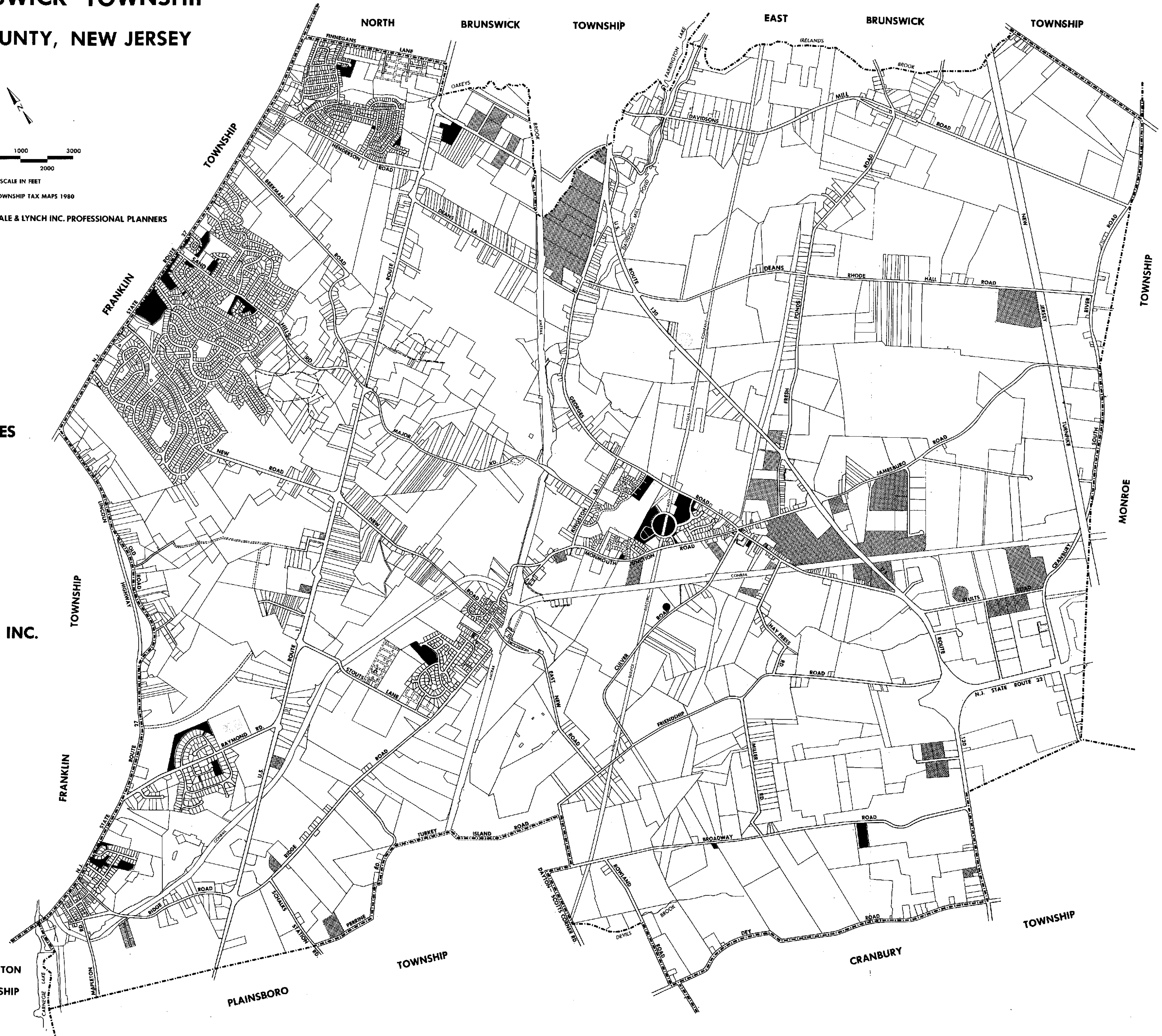
MULTI—FAMILY & MOBILE HOMES

COMMERCIAL

INDUSTRIAL & UTILITY

PUBLIC & QUASI-PUBLIC

SOURCE: FIELD SURVEY - QUEALE & LYNCH, INC.



1. The greatest number of changes occurred in the residential category. With regard to single family development, there were 1,289 additional single family units and a loss of 82 units. There were three additional apartment projects and two duplex projects.

2. The major concentrations of new single family development occurred along the broad Route 1 corridor. The largest is the development north of Henderson Road extending through to Finnegans Lane in an area adjacent both to Franklin and North Brunswick Townships. There was additional in-filling of homes north of Kendall Park on both sides of Sand Hill Road near Route 27. Other subdivisions occurred in the Kingston area and extending northeast on both sides of Raymond Road, while another major residential project was located south of Monmouth Junction north of Stouts Lane.

3. Multi-family development occurred along Route 27 in the Kendall Park area and west of Dayton between Monmouth Junction and Georges Roads. It is in the Dayton area that two duplex projects are being developed.

4. Scattered throughout the township are numerous single family homes stripped along the frontage of existing roads. The 82 homes recorded as having disappeared since the 1968 survey were also scattered around the township, but two observations are made: 1) several of these units appear to have been old farm houses; and 2) there was a pattern of losing homes along major highways such as Route 1, Route 130 and Route 27.

5. The changed commercial pattern is as much a reflection of the 19 commercial losses as it is a reflection of the 31 additions. The properties with vacant commercial uses (or razed buildings) seem most pronounced along Route 1. The new uses are scattered throughout the township. The new commercial uses were predominantly individual uses as opposed to shopping centers with multiple tenants.

6. The industrial changes are significant. There was a concentration of new development along Route 130 near the North Brunswick boundary; another east of Dayton, also along Route 130; and some new uses nearer the New Jersey Turnpike. In all, the differences between the 1968 and 1980 surveys were an addition of 45 new industrial uses and a loss of eight.

7. Public and quasi-public changes were scattered. Most of the additional acreage was the result of cluster zoning and the dedication of open space. Examples of non-open space uses are the County Mosquito Control Commission on Broadway Road, churches and synagogues, the Municipal Building, the Dayton Post Office, and community centers as part of the multi-family project in Dayton, and as part of the West New Road Park complex.

The general pattern of land uses in 1980 reflects an increasing diversification of residential development as well as a more complex mixture of public

and quasi-public uses. Compared to 1960 when the residential development was not identified by different land use categories, the 1980 pattern is able to separate single family developments from two-family, multi-family and mobile home developments. Also apparent are the development of major subdivisions. It is clear the more flexible zoning provisions permitting cluster zoning as well as optional housing choices have begun to emerge in the township compared to the predominantly single family pattern which existed in 1960. Although the acreage devoted to non-single family development is relatively small, the permitted densities in multi-family developments are higher. Less acreage is therefore required to provide multi-family units compared to single family units.

The land use pattern for residential development also reveals emerging concentrations of modern, single family developments in the corridor west of Route 1 and along Route 27. These concentrations are in three distinct areas: the northwest corner abutting North Brunswick Township; Kendall Park and Franklin Park area; and Kingston. Other concentrations can be seen around well-established villages such as Monmouth Junction and Dayton. Finally, the long history of the township still records the strip frontage development of homes along various country roads. Modest additions to this strip frontage pattern are still emerging. The majority of new single family homes, however, can be seen to have been located in major subdivisions designed to provide driveway access from interior local streets so controlled access and reverse frontage can be maintained along major roads.

The commercial pattern is scattered, but major patterns are identifiable. For example, the small concentration in Kingston can be seen as well as the concentration around Kendall Park on Route 27. Likewise, the strip frontage development around Franklin Park and some scattered commercial uses north of Franklin Park toward North Brunswick are apparent. Overall, Route 1 is dotted with individual commercial uses with no strong concentration in a given area. Each use on Route 1 is an individual operation oriented primarily to the travelling public. Of interest, however, is that there were 7 vacant commercial uses along Route 1 compared to 28 operating uses, or a ratio of 1:4.

Other commercial concentrations exist in the villages of Monmouth Junction and Dayton, while commercial strips occur along Route 130 and some portions of Georges Road. Basically, however, the commercial pattern is somewhat scattered and consists of a collection of individual uses as opposed to commercial services concentrated in a few shopping centers or "downtown" areas.

The industrial pattern reflects a healthy expansion of industrial development. This pattern shows concentrations along Route 1 east of Kingston; along Route 130 near the North Brunswick boundary; and a broad area around and east of Dayton served by Route 130 and the New Jersey Turnpike. While there are other scattered industrial uses, many are smaller operations compared to the vast manufacturing, warehouse, and office complexes built in the areas just identified.

Of all the land use categories, public and quasi-public uses had the most dramatic increase in acreage since the 1960 survey. Not only did the number of

acres increase, but the mixture of types of public/quasipublic uses increased. For example, with over 800 additional acres of industrial use, another 100 commercial acres, and almost 900 more acres of residential development since 1960, the 2,290 acres devoted to streets and other rights-of-way was more than double the 1960 figure. The acreage devoted to streets and other rights-of-way is approximately the same acreage devoted to single family uses and is not much more than the total acreage devoted to industrial uses. In addition to streets, the approximately 720 acres used for other public and quasi-public uses in 1960 (i.e. schools, municipal building, parks, cemeteries, churches, etc.) increased to 1,875 acres by 1980, or 2.6 times the acreage in 1960. (County and State acreage alone in 1980 almost equalled all the public and quasi-public property in 1960.)

The dominant land use pattern is still the undeveloped property which has been classified as wooded, agricultural, or vacant. In 1980 this represented two-thirds of the township. This is a significant drop from 1960 when these categories represented 82 percent of the township. The loss of about 4,150 acres of vacant, wooded, and agricultural land since 1960 is an indication of the township's size, its major highway access, the availability of basic utility services in some areas, and the township's favorable location within the major metropolitan area and the northeast development corridor.

Although several major development patterns have been established, as described above, with two-thirds of the township still undeveloped, it is apparent there are many options available to the township in the way of land use controls and development review to assure proper land use on that acreage.

It is not unusual to find established development patterns related to the better sites, whether by virtue of access, or utility services, or because of the absence of difficult environmental conditions. As the township continues to develop, the choice sites will be more difficult to find and the township's concerns will focus to an even greater extent on environmental issues, which can be expected to be encountered on a more frequent basis.

TRAFFIC CIRCULATION

The traffic circulation report analyzes traffic conditions in South Brunswick. The information contained in this report serves as part of the foundation for recommending improvements in the road network and mass transportation as a part of the support system for land use planning.

This report provides an analysis of traffic volumes, traffic accidents, road conditions, road functions and mass transportation. It summarizes a more detailed background report submitted to the Planning Board in the development stages of the Master Plan reexamination.

Traffic Volumes

Route 1 has the most traffic volume information available because of the three permanent counters. These counters are located north of Raymond Road, north of Major Road, and north of Henderson Road.

Traffic volumes have increased slightly at the counter north of Raymond Road, while in the other two locations significant declines in traffic volumes have

occurred since 1977. Peak flows actually occurred in 1978 in all three locations, with the highest count observed at the location north of Major Road which showed 36,680 vehicles in 1978. With volumes having dropped off to 27,860 by 1980, this two year decline was a significant 24 percent. However, the counts raised several questions, the most significant of which is the disparity in counts between the Major Road and Henderson Road volumes in 1977, while in 1980 they were virtually the same. For the years 1977, 1978 and 1979, the Major Road location showed approximately 3,000 more vehicles per day than the Henderson Road location.

One additional trend related to Route 1 which seems to be significant is the large increase in traffic volumes south of Ridge Road between 1977 and 1979. The increase in this two year period amounted to over 29 percent at a time when traffic volumes were either stabilizing generally or beginning to decline along Route 1. Much of this increase can be related to Ridge Road, which saw traffic volumes west of Route 1 increase from 3,950 to 7,280 in the same two year period (a growth of 84 percent) while east of Route 1 the gain was a correspondingly significant 75 percent, increasing from 4,710 in 1977 to 8,220 in 1979. Many turning movements take place at the intersection of Ridge Road and Route 1, as is evidenced by the significant drop in Route 1 traffic volume as shown in the 1979 intersection count. Route 1 traffic immediately north of Ridge Road was 25,140, a drop of 10 percent and 2,700 vehicles per day compared to the location immediately south of Ridge Road.

Looking at the broader patterns of traffic flows through the township on the state highways, Route 1 carries about two times the volume of Routes 27 and 130. While both Route 1 and Route 130 have center barriers, Route 27 operates essentially as a two lane road throughout its entire length on the westerly border of South Brunswick.

Route 32 extending easterly from Route 130 is a very short stretch of state highway connecting Interchange 8A of the New Jersey Turnpike with Route 130. This road carries lower traffic volumes than any of the other state highways in South Brunswick, with the heaviest volumes located immediately west of the access to Exit 8A. This road also serves a valuable function as an access road to the industrial area of South Brunswick.

The highest traffic volumes on county and municipal roads are found in the following locations, listed in order:

1. Ridge Road in the vicinity of Route 1.
2. Route 535 south of Route 32.
3. Georges Road in the vicinity of Kingston Lane.
4. Route 522 in Monmouth Junction.
5. Route 522 in Dayton.
6. New Road between Route 1 and Route 27.
7. Henderson Road.
8. Deans Lane.
9. Route 535 north of Route 32.
10. Ridge Road in the vicinity of Stouts Lane.

Looking at the most significant traffic carriers among the county and municipal roads, Ridge Road shows variations in traffic volumes throughout its length, with the lowest volumes found just east of Kingston Lane and the highest volumes in the vicinity of Route 1. This variation in traffic volumes indicates that the road is used primarily to service adjoining uses and to provide access to the regional road network, rather than serving as a predominantly long-range traffic carrier itself.

Route 535 shows a significant difference in volumes north and south of Route 32, indicating that it is serving an important function in providing access to the New Jersey Turnpike, while its secondary function is as a service road to local industry and as an intermunicipal road connecting Cranbury and South Brunswick to East Brunswick and South River.

Georges Road shows much higher traffic volumes at its intersection with Kingston Lane than it does either in Deans, Dayton or at its southerly access to Route 130. This higher volume in the central portion of Georges Road is undoubtedly related to the schools in the area.

New Road is the major collector road for Kendall Park, providing access to Route 27 and Route 1. The difference in traffic volumes east and west of Route 1 indicates that a significant number of turning movements occur at this intersection.

One other important traffic volume relationship is that existing between Deans Lane and Henderson Road. The segment of Route 1 lying between those two roads shows more traffic compared to Route 1 segments both north and south. This indicates that Henderson Road and Deans Lane are part of an indirect east/west link connecting Route 27 and Route 130 in the northern part of the township. Although there are no traffic volume counts available at the intersection of Deans-Rhode Hall Road and Route 130, it is apparent that this section extending all the way to Route 535 is used in sufficient volume to represent a part of the intermunicipal road network linking Franklin Township with Jamesburg.

Accidents

The mapping and analysis of traffic accidents provides important additional insight into traffic flows and problem areas, supplementing traffic volume information and providing a basis for comparison with problems identified in the road survey.

An analysis has been made of the location of traffic accidents for the calendar year 1980. During that year a total of 708 accidents were handled by the South Brunswick Police Department. Nine of the accidents involved fatalities.

The heaviest months for traffic accidents were December and March, with 96 and 73 accidents respectively, while the lightest months were September and August, which showed 38 and 45 accidents. Correspondingly, December and March also showed the highest number of accidents involving the peak hours of travel occurring between 7 and 9 a.m. and 4 and 6 p.m. It should be noted that more accidents occur during the afternoon peak hours than occur in the morning.

This is partially related to the heavier traffic volumes which are found at the P.M. peak hours since there is a combination of commuter traffic and other general travel which is not found in the corresponding morning peak hours. However, P.M. peak hour traffic volumes are typically only about 20 to 25 percent higher than morning peak hour volumes, so the incidence of traffic accidents is higher compared to traffic volume in the P.M. peak hours.

More than one out of every four accidents involved injuries, and the number of fatalities involved over one percent of the accidents. Six of the 9 accidents involving fatalities occurred on state highways, with Route 130 accounting for three fatalities, Route 1 having two fatalities and Route 27 one fatality.

With the relatively few accidents involving fatalities compared to total traffic volumes, it is difficult to draw any statistical significance as to the higher number of fatal accidents on Route 130 compared to other roads in the township.

About 10 percent of the accident reports involved accidents on private property, while almost two-thirds of all the accidents were located on state and county roads.

A map has been prepared showing high accident areas in the township, and it is shown on Plate 4. Accident locations were grouped into three categories. The first category shows those locations which had 10 or more accidents in 1980, the second category shows those with 5 to 9 accidents and the third category shows the areas with 3 or 4 accidents.

Eight locations had 10 or more accidents in 1980. They are listed below with some discussion on each:

1. Route 1 and New Road: This location had 30 accidents, including one fatality. This is the highest accident area in the township but, interestingly, it is not the highest traffic volume intersection along Route 1. Ridge Road carries considerably more traffic than New Road, but it had far fewer accidents, while Henderson Road carries about the same volume of traffic and also had far fewer accidents. It is believed that the major problem involving traffic accidents at New Road is the number of turning movements. The intersection is controlled by a traffic light, as are all intersections along Route 1, but the jughandle design is one which creates some conflicts since only 2 of the 4 corners have jughandles. Unless the state's Department of Transportation becomes involved in accommodating northbound turns from eastbound New Road traffic through the addition of a jughandle on the southeast corner of the intersection, problems will continue. Also, traffic entering New Road from northbound Route 1 has to cross over eastbound New Road traffic. The general concern of drivers passing through the intersection on New Road is the limited time available, which can impair driver judgment. This could be alleviated by adding a jughandle on the northeast quadrant to more effectively accommodate this turning movement. It does not appear to be necessary to add a jughandle at the southwest corner of this

SOUTH BRUNSWICK TOWNSHIP

MIDDLESEX COUNTY, NEW JERSEY

1000 0 1000 3000
500 2000

SCALE IN FEET

SOURCE: TOWNSHIP TAX MAPS 1980

BASE MAP PREPARED BY QUEALE & LYNCH INC. PROFESSIONAL PLANNERS

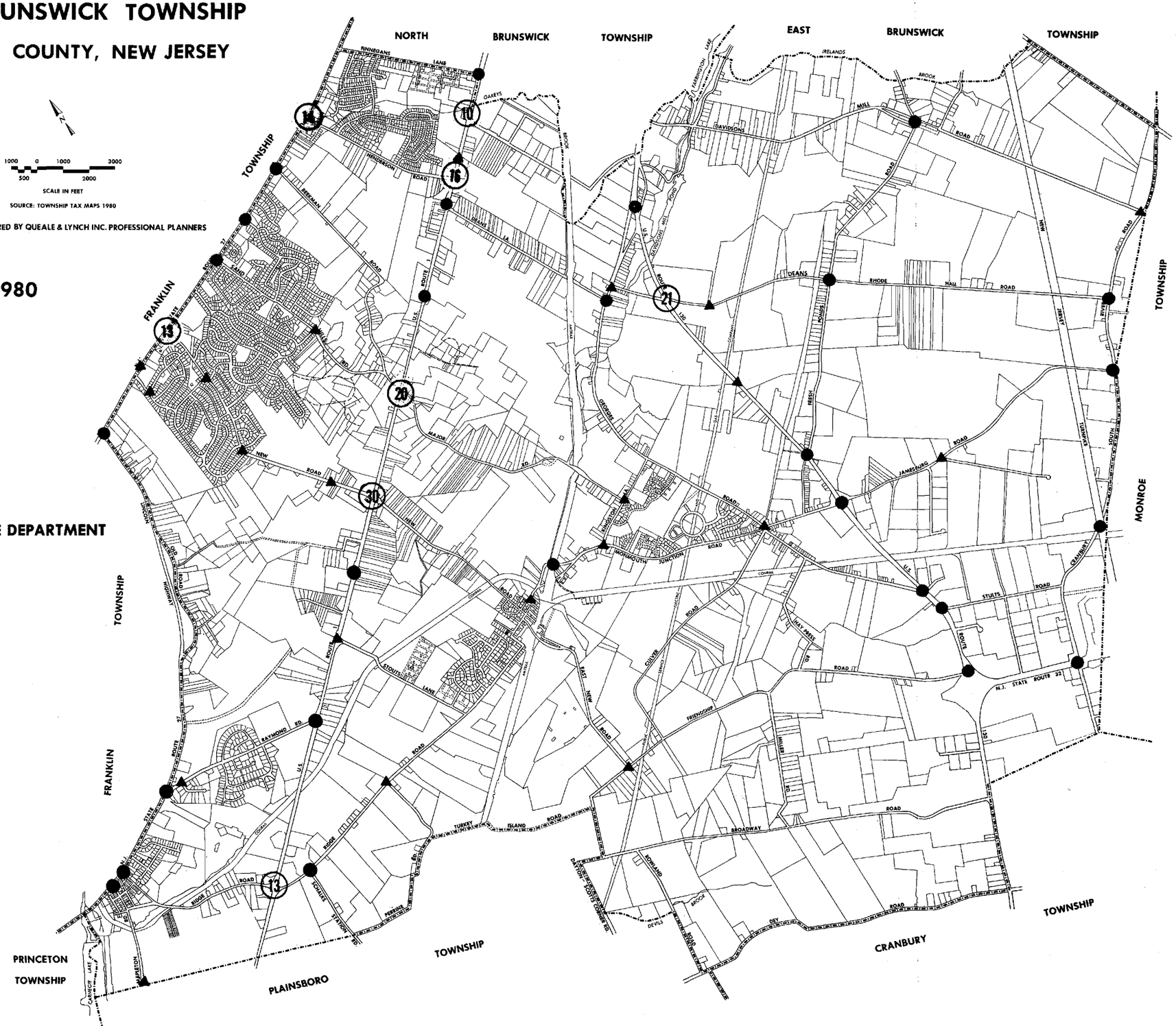
Plate 4
HIGH ACCIDENT AREAS - 1980

(18) 10 + ACCIDENTS

● 5 - 9 ACCIDENTS

▲ 3 - 4 ACCIDENTS

SOURCE: ACCIDENT RECORDS
SOUTH BRUNSWICK POLICE DEPARTMENT



intersection to accommodate traffic heading toward Monmouth Junction from southbound Route 1, although this may be warranted if additional development takes place east of Route 1.

2. Route 130 and Deans-Rhode Hall Road: This intersection had a very high 21 accidents. It is not traffic light controlled and visibility is very good at this location. Turning movements must be made from the high speed lanes of Route 130, which cause problems because of an absence of room for vehicles on the shoulder along the median strip. It is apparent that crossing traffic is misjudging the speed of vehicles on Route 130 causing this very high rate of accidents. Based on the limited information available on traffic volumes at that intersection, it appears as though this location may be among the highest when relating traffic volume to the number of accidents. An apparent early response to this problem could be the installation of a traffic light, or at the very least a reworking of the intersection design to more effectively accommodate left turns for both north and south bound Route 130 traffic.

3. Route 1 and Major Road: Twenty accidents occurred at this location in 1980. Traffic volume information is not available for Sand Hills Road immediately west of Route 1, but based on its location and collector function in Kendall Park, as well as the volumes on Sand Hills Road at Route 27, it is apparent there is significantly more traffic on Sand Hills Road entering this intersection than there is at Major Road, which only carries about 1,500 cars a day in this immediate area. Turning movements again become part of the problem as traffic flow generally relates to northbound access to Route 1 and the corresponding return flows to Kendall Park. Also, there is very limited visibility for traffic entering the intersection from Major Road to travel north on Route 1. Right-turn-on-red is permitted at this intersection, but insufficient sight distance exists to provide safe access for cars desiring to make this northbound turn onto Route 1. It is recommended that no turn on red be permitted for traffic from Major Road to Route 1.

4. Route 1 and Henderson Road: This intersection has about the same traffic volumes associated with it as are found in the intersection of Route 1 and New Road, but has only about half the accidents (16). Part of this is because there is no crossing traffic except that associated with the jughandle. Also, much of the traffic travelling through this intersection is connecting to Deans Lane as opposed to northbound Route 1. This is evidenced by the fact that the Department of Transportation traffic count in 1977 showed Route 1 traffic north of Henderson Road to be 28,680 compared to immediately south of Henderson Road at 29,560.

5. Route 27 and Henderson Road: This is a traffic light controlled intersection which saw 14 accidents occur during 1980. Apparently, many of the conflicts in this location are related to commercial uses in the area and left turns onto Henderson Road from southbound Route

27 traffic. Henderson Road has only a 33 foot right-of-way in the vicinity of the intersection with Route 27, and the overall congestion levels on Route 27 itself cause problems at the points at which turning movements take place, as is apparent in a review of the map of high accident areas.

6. Route 1 and Ridge Road: The number of accidents occurring at this location, which totalled 13 in 1980, reflects a far lower incidence of traffic accidents than one might expect given the relatively high volume of traffic both on Route 1 and on Ridge Road. Much of the Ridge Road traffic is through traffic at this location, particularly eastbound. It was mentioned in the traffic volume section of this report that there are many turning movements at Ridge Road. However, most of these turning movements are related to traffic exiting Route 1 in a northbound direction and travelling east on Ridge Road. This traffic uses the exit ramp and has good visibility to merge with other eastbound traffic crossing Route 1 on Ridge Road. No major redesign of this intersection appears to be necessary based on existing conditions, although if Route 92 is built this will have to be allowed for in the anticipated movement of traffic.

7. Route 27 and New Road: There were 13 accidents at this location in 1980. Commercial activities in the area as well as significant left turns on to New Road from southbound Route 27 contribute to the problems associated with this intersection. The intersection is traffic light controlled, as is Henderson Road, but this location does not have the inherent problem of a narrow right-of-way, which is a complicating factor at Henderson Road. Also, traffic bound for different sections of Kendall Park has several opportunities to enter the local road network before reaching New Road, with the major access points being Stillwell Road, Sand Hills Road and Stanworth Road. If these opportunities for left turns from Route 27 did not exist, traffic problems at the New Road intersection would be that much more severe.

Twenty-seven intersections experienced between 5 and 9 accidents during 1980, while 21 had 3 or 4 accidents during the same year. Some of the problems associated with these intersections become apparent in a review of the conditions observed in the road survey, which will be discussed later in this report.

Road Conditions

This section of the traffic circulation report deals with right-of-way widths and the results of a road survey identifying types of roads, visibility problems, road surface conditions and pavement width problems.

Five categories of road widths have been inventoried as a part of this analysis. The widest widths are those with rights-of-way of 80 feet or more. This includes the New Jersey Turnpike, Route 1, Route 130, Route 32, and portions of Route 535 in the vicinity of Route 32 and Stults Road. Also, Georges Road north of Deans-Rhode Hall Road is in this category.

SOUTH BRUNSWICK TOWNSHIP

MIDDLESEX COUNTY, NEW JERSEY

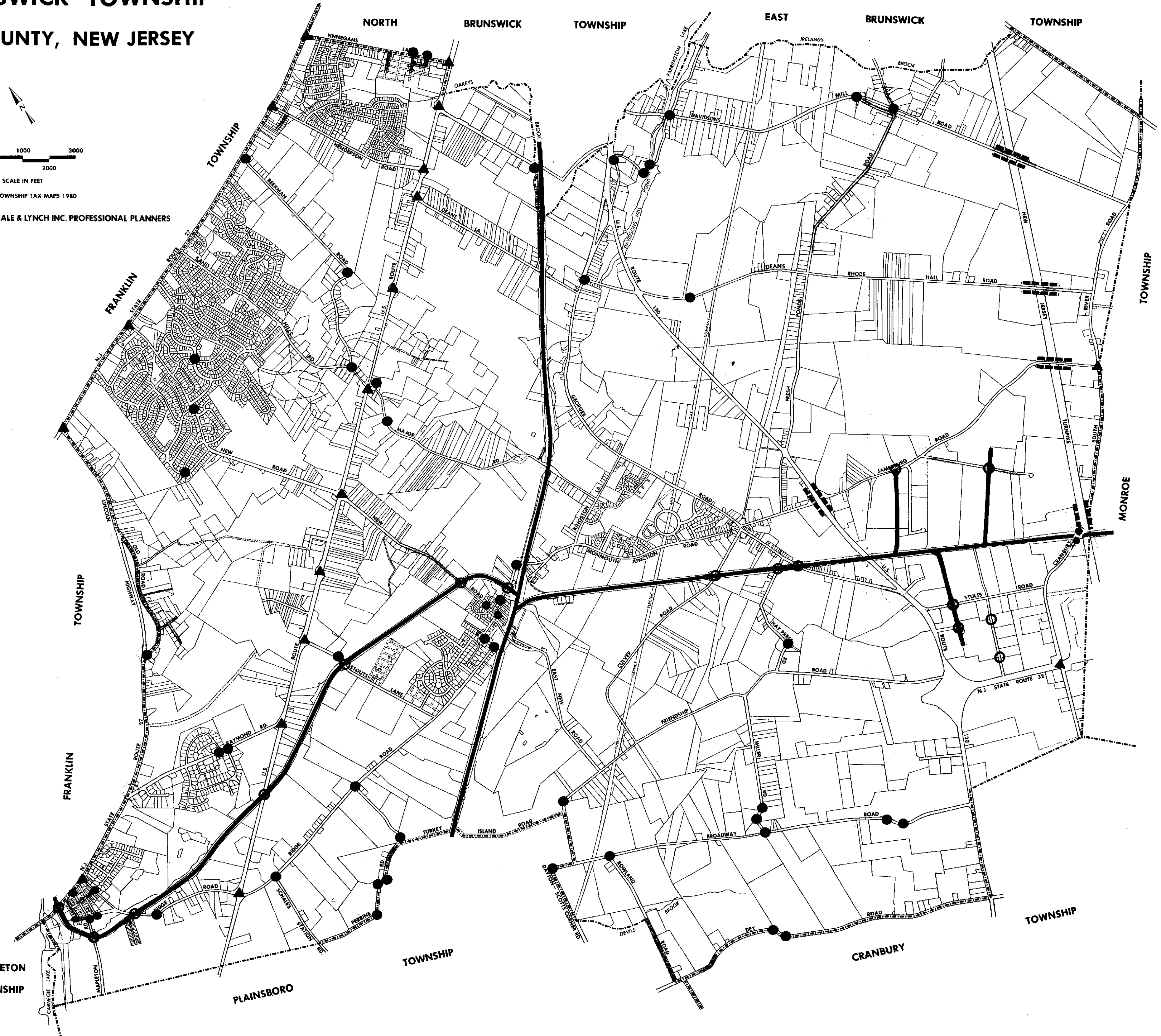
SCALE IN FEET (1000 0 1000 2000 3000; 500)

SOURCE: TOWNSHIP TAX MAPS 1980

BASE MAP PREPARED BY QUEALE & LYNCH INC. PROFESSIONAL PLANNERS

Plate 5
ROAD CONDITIONS - 1982

- ▲ TRAFFIC LIGHT
- ● LIMITED VIS. SHARP CURVE
- ACUTE ANGLE INTERSECTION
- POOR PAVEMENT
- RAILROAD
- O AT-GRADE R.R. CROSSING
- GRADE SEPARATED
  - RR CROSSING
  - ROAD



The next right-of-way width category shows those roads with widths between 60 feet and 79 feet. Several roads have segments in that range, but this listing includes only those roads which show that width essentially throughout their entire length in the township. Among the roads falling in this category are Route 27, Raymond Road, Georges Road, Stults Road and Route 535. Significant sections of New Road and Sand Hills Road in Kendall Park as well as Stouts Lane between Ridge Road and the railroad also fall in this category. Deans-Rhode Hall Road between Georges Road and Route 130 has a right-of-way width in this range as well.

The third range is 50 to 59 feet. With the exception of internal roads in subdivisions, the number of roads falling in this category is limited. Between Route 27 and Route 1, only New Road has major sections falling in this category and also has no sections less than 50 feet in width. Of course, as mentioned earlier, Raymond Road is in the 60 feet to 79 feet category along its entire length between Route 27 and Route 1. Two other roads are in this category throughout their entire length in the township and they are Davidsons Mill Road and Friendship Road.

The balance of the road network falls in either the 34 to 49 foot range or 33 feet. Many of these roads have partial dedications which result in variations in right-of-way width along their entire length. However, it is safe to say that throughout most of the township, particularly in the area lying east of Route 1, the supporting road network is largely less than 50 feet in right-of-way.

The road survey identified various road conditions. It was undertaken in February, 1981. Plate 5 is a map which identifies traffic lights, locations with limited visibility or sharp curves, acute angle intersections, areas with poor pavement, railroad tracks, at-grade railroad crossings, grade separated railroad crossings and grade separated highway intersections.

Nineteen intersections in the township have traffic lights. Eleven of these are located on Route 1 and they include all intersections and jughandles on Route 1. In addition, 5 intersections along Route 27 have traffic lights. They are Finnegan's Lane, Henderson Road, New Road, Route 518 and Ridge Road. The remaining 3 traffic lights are found at Route 32 and 535 near the Turnpike entrance; at Route 535 and 522; and at Route 130 and Georges Road north of Deans. The highest volume intersections along Route 27 which are not controlled by traffic lights are the intersections of Raymond Road and Sand Hills Road. As was pointed out in the traffic accident analysis, the very high accident area on Route 130 at Deans-Rhode Hall Road seems to warrant traffic light consideration, as does the intersection of Georges Road and Route 522, not so much because of traffic volumes through that intersection but because of its complexity.

Fifty-four locations in the township were identified as having limited visibility or sharp curves. While it is unnecessary to list all these locations, the following represents those areas where limited visibility or sharp curves coincide with identified high accident areas:

1. Route 27 and Beekman Road
2. Route 27 and Academy Street
3. Route 1 and Major Road
4. Ridge Road and Schalks Station Road
5. Ridge Road and Perrine Road
6. Route 522 and Walnut Avenue
7. Route 522 at railroad overpass
8. Georges Road at Deans-Rhode Hall Road
9. Fresh Pond Road at Davidsons Mill Road
10. Deans-Rhode Hall Road at curve near cemetery east of Route 130
11. Route 535 at railroad overpass near N. J. Turnpike overpass.

Ten acute angle intersections were identified, most of which are in low traffic volume areas. Those acute angle intersections which are also identified as high accident areas are as follows:

1. Route 27 and Raymond Road, which appears to warrant a traffic light.

2. Route 522 and Georges Road, which also appears to warrant a traffic light.

3. Route 522 and Docks Corner Road, which appears to have a considerable amount of truck traffic entering 522 at this point.

Two other high accident areas have acute angle intersections, but the problems associated with these intersection do not appear to be related to acute angle as much as to traffic volumes and turning movements. These are the two intersections of Georges Road with Route 130, one in Dayton and one in Deans. Based on traffic volumes, traffic lights appear to be warranted at these locations, both of which showed between 5 and 9 accidents in 1980, including one fatality at the Deans intersection. Since the traffic survey was completed in early 1981, the Deans intersection has been redesigned and a traffic light has been installed, improving a poor design situation.

Areas with poor pavement were identified. The incidence of poor pavement is extremely limited in South Brunswick, which has apparently had a successful road maintenance program over the years. Roads identified on the display map as having condition problems for the most part have those problems only in a relative sense when compared to the overall high quality road conditions in the township. Areas identified as poor pavement would include roads with an undulating surface, pavement breaking at the road edge, dirt roads, pot holes, and uneven or inconsistent topping. The major road sections identified as having poor pavement in the road survey include:

1. Rowland Road between Devil's Brook and Dey Road. (This road is on the township border with Plainsboro and it is unclear from the road survey which municipality has maintenance responsibility.)

2. Fresh Pond Road north of Deans-Rhode Hall Road

3. Black Horse Lane between the curve and Deans Lane

4. Old Road

5. New Road extending west from the railroad approximately one-half mile.

6. Portions of Docks Corner Road

Other identified problem areas are shown on Plate 5.

Railroad crossings can represent a significant problem in traffic circulation in a municipality, particularly those which are at grade. South Brunswick has 10 at grade railroad crossings on the major spurs extending in an easterly and westerly direction from the main line. The westerly spur has 6 of these crossings, but appears to have a very low volume of freight traffic. The easterly section along the Jamesburg line has 3 at grade crossings, the most significant of which is at Georges Road. All other rail crossings are grade separated, including the Route 130 and Route 535 crossings of the Jamesburg line and the East New Road, Route 522, Major Road and Deans Lane crossings of the main line of the railroad. Road access east and west across the main line of the railroad provides significant limitations for traffic circulation across this major northeast corridor facility. All 4 crossings are narrow and have only 2 lane capacity, with the highest traffic volumes carried on Route 522, which also is the narrowest crossing of the railroad. The East New Road crossing is the most recently developed, but it is narrow and, based on land use patterns, is the least important of the four crossings. The remaining three crossings are in poor condition. The two bridges at Major Road and Route 522 are in deteriorating condition and need replacement or major renovation, while the Deans Lane underpass is narrow and subject to flooding. Because of clearance requirements associated with major rail lines and the grade at which the rail line is found in South Brunswick, additional crossings will be difficult to develop. Re-aligned Route 522 is the major proposed crossing point for east/west travel through the township and the southern part of Middlesex County.

Grade separations for roads exist only in 5 locations in the township, 4 of which are associated with the N. J. Turnpike. The fifth location is where 522 passes under Route 130.

Road Functions

The purpose of identifying road functions is to set the foundation for recommending right-of-way and pavement widths in the Traffic Circulation Plan. An identification of those roads which are serving arterial and collector functions within South Brunswick at the present time helps in relating existing conditions to right-of-way widths, road characteristics and future land use patterns so that future roadway improvements, realignments and new road locations can be set forth in as practical and achievable a framework as possible.

Four major road categories are shown on Plate 6, which is a map indicating existing road functions. It should be kept in mind that these evaluations are based on existing road functions and not on the way the township would like to see them function. Future road functions are shown on the Traffic Circulation Plan.

The first category of road functions is called "Freeway and Major Arterial". This is identified as those roads which carry high volumes of regional traffic, serving only incidentally as service roads to the township and as intermunicipal connectors. The two roads falling in this category are the New Jersey Turnpike and Route 1.

The next level of road function is identified as "Secondary Arterial". These roads are lower volume subregional or inter-municipal roads. Routes 27, 130 and 32 are shown as Secondary Arterials, while County Routes 522 and 535 are also shown in this category. Among the roads in this category, Route 130 could be classified as either a Major Arterial or Secondary Arterial because of its design and long-standing function in the carrying of traffic between the urbanized portions of Southern New Jersey and the New Brunswick area. However, since the New Jersey Turnpike was constructed about 30 years ago and Route 1 has been upgraded to handle more traffic between the Trenton area and the New Brunswick area, the importance of Route 130 as a major artery has diminished, with traffic volumes at a relatively low level compared to the capacity of the highway.

Among the Major and Secondary Arterial roads, Middlesex County Planning Board identifies areas where traffic volumes exceed design capacity. These are Route 27 north of Route 518, Route 1 throughout its entire length, Route 522 east of the railroad bridge, and Route 535 throughout its entire length. By way of comment on the County's identification of capacity problems, the section of Route 522 between Route 27 and the railroad overpass, and the section passing through Monmouth Junction, should be added to this list. Also, Route 1 has its capacity problems at the intersections, not throughout its length.

The next identified road function is "Major Collector". These roads serve important functions either as part of a subregional moderate volume road network or as collector roads for areas which have concentrated development.

The fourth road function is identified as "Minor Collector", and this includes those roads which serve primarily a local function or are of such low volume that they are relatively unimportant parts of the intermunicipal road network.

Mass Transit

Only limited opportunities for mass transportation exist within the township.

Local buses are found along Routes 27 and 130. Commuter buses are found on Route 27 as well as on the Turnpike utilizing Exit 8A for access.

The County Transportation Report shows a proposed park-and-ride for commuter buses in the vicinity of the intersection of Routes 27 and 518. This location is apparently picked because of its convenience to Kendall Park and to offer an opportunity to remove some traffic from heavily travelled Route 27.

With the main line of the northeast corridor passenger rail service running through the center of South Brunswick Township, some mention should be made of the opportunities for rail transit within the township. In past years, a railroad station offered passenger service at Monmouth Junction. The County

SOUTH BRUNSWICK TOWNSHIP

MIDDLESEX COUNTY, NEW JERSEY

1000 0 1000 3000
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SCALE IN FEET

SOURCE: TOWNSHIP TAX MAPS 1980

BASE MAP PREPARED BY QUEALE & LYNCH INC. PROFESSIONAL PLANNERS

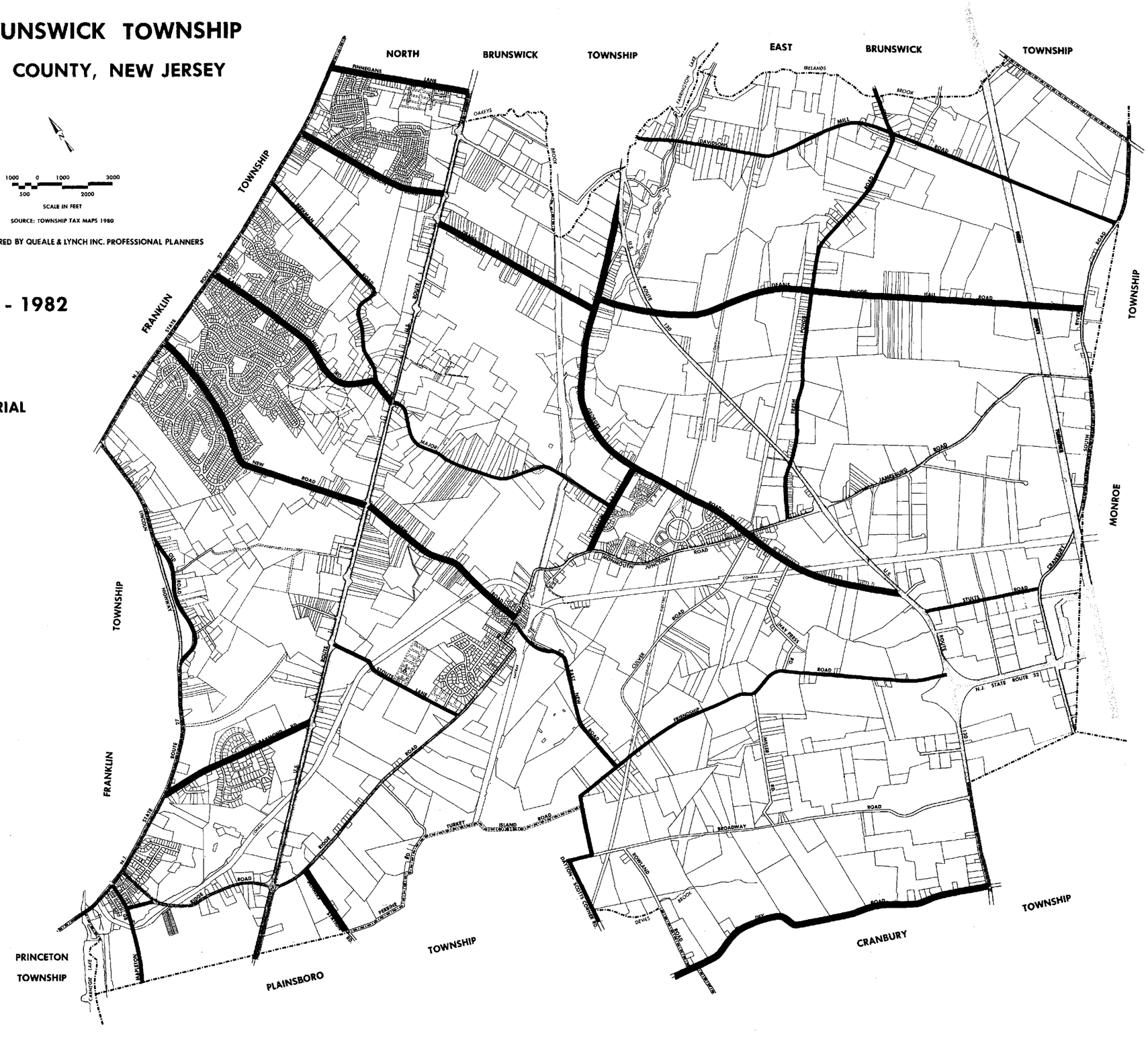
Plate 6
EXISTING ROAD FUNCTIONS - 1982

FREEWAY & MAJOR ARTERIAL

SECONDARY ARTERIAL

MAJOR COLLECTOR

MINOR COLLECTOR



Transportation Plan includes a proposal for a new passenger station in the vicinity of the re-aligned Route 522 crossing of the railroad near Monmouth Junction.

POPULATION AND HOUSING

This study is prepared to analyze population and housing trends and characteristics for the purpose of assisting in long-range planning. Three basic planning tools are generated from the information developed in this report:

1. Zoning for future employment levels.

2. Zoning for sufficient housing to meet population and employment projections.

3. Planning for public facilities whose needs are closely related to future population levels and characteristics, such as schools.

The topics covered in this report include general population trends, detailed age group analysis, births, deaths, migration, natural increase, household characteristics, income, employment, general housing trends, vacancies, housing value, jobs related to housing, housing size, age group projections, household projections, and housing unit needs. As appropriate, the information is analyzed for South Brunswick and its census tracts, the planning region within which South Brunswick lies (Middlesex, Somerset and Mercer Counties) and the State as a whole. A background report was prepared and discussed with the Planning Board containing detailed information on each of these topics, including 28 plates providing a significant array of data on demographic characteristics.

Population

Plate 7 shows some of the general population characteristics of South Brunswick, the region and the state. It shows that the township is growing at a faster rate than the region and the state since 1950; the township population is younger; there is a considerably lower population density in the township compared to the region and state; and South Brunswick has a larger household size than the region and state.

South Brunswick's median age increased by four years between 1970 and 1980, the population under 15 showed a relative decline, and the number of people 55 and over increased at a much faster rate than the overall township growth rate. The region and state showed similar overall changes as those shown for the township, although they both had higher ratios of older people and a lower percentage of younger people.

Births in the township have been fairly constant over the 1970's decade, while both the region and state experienced a decline in the early years, a leveling off in the middle years, and slight increases toward the end of the 1970's. Deaths at all three levels did not show much variation in absolute numbers in the 1970's. The township, region and state showed an excess of births over deaths.

Plate 7

GENERAL POPULATION CHARACTERISTICS

	South Brunswick	M/S/M* Region	New Jersey
1950 Population	4,001	593,705	4,835,329
1960 Population	10,278	844,161	6,066,782
% Increase 1950-1960	156.9%	42.2%	25.5%
1970 Population	14,058	1,086,301	7,171,112
% Increase 1960-1970	36.8%	28.7%	18.2%
1980 Population	17,127	1,106,885	7,364,823
% Increase 1970-1980	21.8%	1.9%	2.7%
Increase 1950-1980	13,126	513,180	2,529,494
% Increase 1950-1980	328.1%	86.4%	52.3%
Age Groups - 1980			
Under 5	7.0%	5.8%	6.3%
5-17	23.4%	20.1%	20.7%
18-64	63.4%	64.5%	61.3%
65 & Over	6.2%	9.6%	11.7%
Persons/Square Mile			
1950	97.6	704.6	645.1
1960	250.7	1,001.9	809.4
1970	342.9	1,289.2	956.7
1980	417.7	1,313.7	982.5
Land Area - Square Miles	41.0	842.6	7,495.7
1980 Characteristics			
Median Age	30.5	31.3(est.)	32.2
Total Households	5,443	369,895	2,548,594
Population in Households	17,038	1,068,231	7,228,290
Median Household Size	2.99	2.58(est.)	2.47
Minority Composition			
Black	4.0%	9.2%	12.6%
Hispanic	2.4%	4.4%	6.7%
Group Quarters Population	0.5%	3.5%	1.9%

Source: U.S. Census

Calculations by Queale & Lynch, Inc.

M/S/M Region = Mercer, Somerset and Middlesex Counties in total.

Natural increase, which is the excess of births over deaths, is an important characteristic to analyze since it can indicate tha amount of growth attributable to migration. The township shows a net inmigration, while both the region and state showed a net outmigration.

Birth rates related to women in their child-bearing years (ages 15-44) declined in the early 1970's, essentially leveling off since 1974, even though total births increased toward the end of the period. The increase in births was based on a greater number of women of child-bearing age rather than on a higher birth rate. Death rates showed no significant variation over the decade.

The township, the region and the state showed net outmigration in the older age groups, and a net inmigration in the 1980 age group of 25-34. This group had the largest growth impact on the township in the 1970's. The township showed sizeable gains in the younger age groups, while the region showed losses and the state showed a mixed pattern. Sizeable outmigration is shown in the 15-24 age group at all three levels.

Based on projections developed by the New Jersey Department of Labor & Industry for future age group composition for the region, the greatest in-migration is expected to continue in the young adult population, while the elderly population will continue to out-migrate in the 1980's and essentially stabilize as it relates to migration patterns in the 1990's. Overall, the greatest regional increases by age group are expected in the 65 and over population, which will increase by about 70 percent in spite of anticipated net out-migration over the next two decades. Based on the in-migration assumptions, considerable gains will be seen in the year 2000 population group of 35-44, which includes those people born in the high birth rate years between 1956 and 1965.

Trends toward smaller households are evident at all three levels, including significant absolute declines in large households. Households of 3 persons or less, which represent the major market for multifamily units as well as one and two bedroom units, represent over 60 percent of the township households, and about two-thirds of the regional and statewide households.

South Brunswick's per capita income is increasing at a faster rate than that of the state, Mercer and Middlesex Counties, while Somerset shows a higher rate of increase. The township has a per capita income very close to that of New Jersey, but this is somewhat misleading because of the higher proportion of persons under 15 in South Brunswick. This fact, and the related larger household size in South Brunswick compared to the state, means that household income is higher in the township than the state.

Covered employment trends for all three study levels show increases at all levels, and South Brunswick showing an increasing share of the region's jobs. Employment projections show the township having an increasing share of the regional employment base, with recent trend lines on covered employment showing a total of 15,800 to 21,400 jobs projected for South Brunswick by the year 2000, compared with a 1980 employment level of 7,431 jobs.

Housing

Plate 8 shows general housing characteristics for the township, the region and the state. Housing unit gains reported in the census closely paralleled building permit records for the township. However, in the region and statewide, Census figures showed greater gains than building permit records would indicate. Two reasons for this disparity may be involved:

a. Possible errors in the 1970 Census.

b. Illegal conversions by homeowners to create second dwelling units in formerly single family homes to accommodate either an extended family or to provide additional income.

Of the two reasons outlined, the second is probably the major contributing factor.

Vacancy levels in sales and rental housing in the township are higher in 1980 than in 1970, in spite of an increasing housing need. Market conditions, including the cost of building housing and financing costs are the primary problems.

The township has about 1.5 percent of the region's housing stock, but produced about 3.1 percent of the housing in the region in the 1970's. Housing production in the region and township is primarily single family. However, included in single family are attached units, so the information reported on housing types based on building permit records is somewhat misleading.

Statewide in 1970 and 1980, there was over one housing unit for every covered job. This is a desirable goal to strive for, because it reflects not only the needs of the employed, but the retired as well. Jobs in the township and region have been more plentiful than housing opportunities. During the last decade, the township produced an average of 2.5 jobs for every housing unit. In the region, 2.8 jobs were added per housing unit. Significantly, job growth in the township in the last 5 years of the decade took place at a rate 4 times greater than housing production. Statewide, primarily because of significant gains in employment over the same period, 1.5 jobs were added for every housing unit.

Trends in housing unit size show that four out of five units added in South Brunswick in the 1970's were 6 rooms or larger in size, while about two-thirds were added in that size category in the region and state.

Projections

Two assumptions were used in making projections of age groups and the total number of households. One assumes a total population in South Brunswick as projected by the county, with age group composition based on the three county region projections made by the New Jersey Department of Labor & Industry. The second assumption is a continuation of 1970-1980 trends in births (assuming 50 births annually per 1000 women aged 15-44), deaths according to U. S. Census survival rates, and inmigration patterns proportional to those experienced 1970-1980.

Plate 8

GENERAL HOUSING CHARACTERISTICS

	South Brunswick	M/S/M* Region	New Jersey
1970 Housing Units	3,903	326,451	2,388,689
1980 Housing Units	5,626	384,802	2,772,149
Net Increase 1970-1980	1,723	58,351	383,460
% Increase	44.1%	17.9%	16.1%
1970-1979 Authorized Units by Building Permits	1,831	59,879	405,608
1970-1979 Demolitions	82	3,568	52,742
Net Increase 1970-1980	1,749	56,311	352,866
% Difference Between Census and Building Permits	1.5%	3.5%	8.0%
1980 Year-Round Units	5,626	384,602	2,687,754
Occupied	5,443	369,895	2,548,594
Owner Occupied	4,526	248,858	1,549,827
Renter Occupied	917	121,037	968,767
Vacant	183	14,707	139,160
For Sale	45	2,651	22,694
For Rent	66	6,125	49,154
Other	72	5,931	67,042
Vacancy Rate	2.0%	2.3%	2.8%
Sales	1.0%	1.1%	1.4%
Rental	6.7%	4.8%	4.8%

Sources: U.S. Census
N.J. Department of Labor & Industry

Calculations by Queale & Lynch, Inc.

The first assumption shows a significant increase in total households, a continuing decline in household size, and about 5 times as many elderly households in 2000 as compared to 1980. The second assumption also shows a continuing decline in household size, a smaller increase in households, and about a doubling of elderly households over the 20 year period.

School age population will increase at a rapid rate under Assumption #1, but much slower in Assumption #2. School enrollment projections are treated separately in the Community Facilities section of the Master Plan.

South Brunswick experienced a net in-migration of 1,897 persons from 1970-80 while the region and state experienced net out-migration. Assumption #2 calls for net in-migration of 2,311 persons from 1980-1990, and 2,753 from 1990-2000. Inmigration will have to occur at about 4 to 5 times that rate in order for the projections in Assumption #1 to materialize.

Converting age group and household forecasts into housing unit needs results in the projections shown on Plate 9, which includes not only the needs based on the two assumptions described herein, but an average of the two showing a mid-range condition.

In the low projection, approximately 200 housing units per year are needed during the 1980's, while the 1990's would need about 170 units per year. During the 1970's, housing production took place at an average of 180 units per year.

Production at the high end would have to be about 590 units annually in the 1980's and 480 units in the 1990's, in order to reach the population levels projected by the county.

From a zoning perspective, capacity should exist to meet the high projection of need, even though it is unlikely that it will be realized in actual production. The reason for using the high projection is that it relates well to the projections of employment made by the county, which correlate well with recent trends.

The number of housing units needed to meet the requirements of lower income households varies based on the assumptions and forecasts used. The New Jersey Division of State and Regional Planning projects a 1970-1990 need of 3,213 housing units for those households earning less than 80 percent of the area's median income. Using this same basis, the total number of lower income households in South Brunswick will range from 2,545 to 3,861 in 1990, and 3,109 to 5,477 in the year 2000. Aside from making sure zoning standards do not artificially inflate housing costs, there are few alternatives available to meet this sizeable and growing need. The absence of available housing subsidies from the Federal and State governments, and the continuing problems facing the private housing industry based on the cost of financing, will make it most difficult to effectively address this increasing need.

Plate 9

POPULATION PROJECTIONS AND HOUSING UNIT NEEDS

1990 & 2000

South Brunswick

	Low	Medium	High
1990 Population	20,405	25,703	31,001
1990 Households	7,270	9,151	11,031
3% Optimum Vacancy	218	275	331
Housing Loss - 1980-1990	95	110	125
1990 Total Units Needed	7,583	9,536	11,487
Low/Moderate Income Households	2,545	3,203	3,861
2000 Population	24,110	33,557	43,004
2000 Households	8,884	12,267	15,649
3% Optimum Vacancy	267	368	469
Housing Loss - 1990-2000	125	145	165
2000 Total Units Needed	9,276	12,780	16,283
Low/Moderate Income Households	3,109	4,293	5,477
1980-1990 Production Needed	1,957	3,910	5,861
Single Family Detached	979	1,955	2,931
Attached, Multi-Family	978	1,955	2,930
1990-2000 Production Needed	1,693	3,244	4,796
Single Family Detached	847	1,622	2,398
Attached, Multi-Family	846	1,622	2,398

Notes:
1. Low projection based on continuation of 1970-1980 trends.
2. Medium projection based on average of Low and High.
3. High projection based on job growth and County Planning Board projection.
4. Housing Loss based on estimated fire, demolitions, conversions, etc.
5. Low/Moderate Income Households earn less than 80% of median.

For zoning purposes and to provide a reasonable relationship to employment projections, the High projection should be used to establish minimum housing capacity levels.

COMMUNITY FACILITIES

This report addresses school, library, municipal, police, fire and rescue squad facilities in the context of the needs of the existing and projected population and development levels of the township. Existing community facilities are shown on Plate 10.

Schools

The South Brunswick Township Board of Education developed a Master Plan in 1979, which provided a description of existing facilities, trends in student enrollment, projections of enrollment by grade, and recommendations for changes in school facilities.

The district covers all grades kindergarten through twelve. There are seven elementary schools serving grades kindergarten through six, one middle school for grades seven and eight and South Brunswick High School serving grades nine through twelve. They are shown on Plate 10, along with other community facilities.

The seven elementary schools in use during the 1981-1982 school year include the following, with their enrollment capacities shown:

School	Capacity
Brunswick Acres	450
Cambridge	500
Constable	400
Dayton/Deans	400
Greenbrook	450
Monmouth Junction	525
Total K-6 capacity	2,725

At the end of the 1981-1982 school year, the Greenbrook School closed, reducing the capacity of the K-6 facilities to 2,275.

Enrollment trends for the elementary grades for the period 1970 through 1981 indicate that enrollments were at their highest in 1970 at 2,263, and dropped to 1,567 in 1981. Declines have been more severe since 1975, averaging a loss of about 88 students per year. Most of this loss has been due to larger classes leaving sixth grade than incoming kindergarten classes. This class size differential accounted for an average loss of 60 students each year, while the remaining 28 student loss has been due to students leaving the system because of out-migration or changing to attendance at non-public schools.

Projections of student enrollment by the Board of Education through the latter part of the 1980's were based on development assumptions which may or may not materialize. If the projections are correct, elementary school capacity will be exceeded by about 1988. However, in order for that to occur, new construction would have to take place at about three times the rate at which it occurred in the 1970's. Using 1990 as a target year, since the population and

SOUTH BRUNSWICK TOWNSHIP

MIDDLESEX COUNTY, NEW JERSEY

1000 0 1000 3000
500 2000
SCALE IN FEET

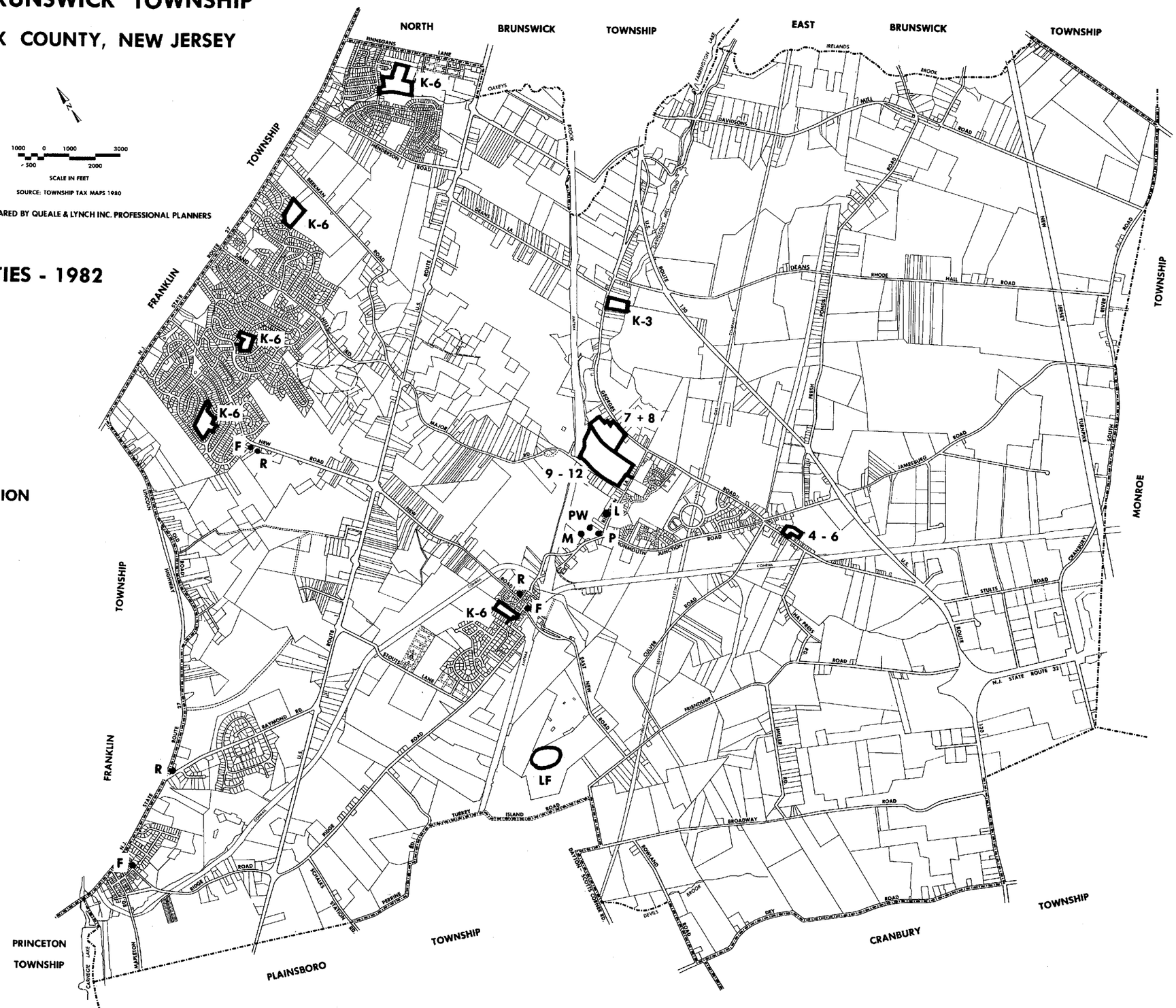
SOURCE: TOWNSHIP TAX MAPS 1980

BASE MAP PREPARED BY QUEALE & LYNCH INC. PROFESSIONAL PLANNERS

Plate 10
EXISTING COMMUNITY FACILITIES - 1982

SCHOOLS

K-6	ELEMENTARY
7 & 8	MIDDLE
9-12	HIGH SCHOOL
L -	LIBRARY
M -	MUNICIPAL ADMINISTRATION
PW -	PUBLIC WORKS
P -	POLICE
F -	FIRE
R -	RESCUE SQUADS
LF -	LANDFILL



housing study of this Master Plan provides age group projections for 1990, elementary school capacity will be sufficient up to a housing production level which would average 440 units per year throughout the 1980's. By comparison, housing production in the 1970's averaged about 175 units per year.

Enrollment trends for the middle school, which is the Crossroads school on Georges Road, show grades 7 and 8 reached their highest enrollment levels in 1973 at 692 students. Since that date, enrollments have declined at an average of 18 students per year to 548 students in 1981. Of that decline, 13 were a result of smaller incoming 7th grade classes than outgoing 8th grade classes, while the remaining 5 were a result of out-migration or student loss to other schools. The capacity of the Crossroads school is 650 students, and that level was exceeded in the 1972 through 1974 period.

Enrollment trends indicate that capacity in the Crossroads school should be sufficient through 1990 if housing production occurs at a rate of up to 440 units per year, under the same unit mix assumptions outlined for elementary schools.

The high school is being renovated, with a corresponding increase in capacity from 1,000 to 1,400 total students. The extra 400 student capacity will be available in the middle of the 1982-1983 school year. High school enrollment trends show that the 1,000 student capacity has been exceeded consistently since 1971, with the highest enrollments occurring in 1975 at 1,302. Declines since then have averaged 35 students per year, with incoming 9th grade classes averaging 7 students more than outgoing 12th grade classes. This means that out-migration, transfers and drop-outs averaged 42 per year. In 1979, incoming 9th grade classes started to be smaller than outgoing 12th grades.

With the increased capacity provided by the renovations to the high school, sufficient capacity exists in the high school to handle new development in the 1980's up to a rate of 525 housing units per year. At that rate, the high school's capacity would not be exceeded until 1990. As with the elementary schools, it is important to note that this level of development is about three times that which occurred during the 1970's.

The following table shows anticipated enrollment levels using three alternate assumptions on the rate of housing development. Using this information and monitoring building permit activity, the Board of Education should be in a position to correlate facility needs with development activity. The Low, Medium and High projections relate to the housing needs analysis shown on Plate 9 of this Master Plan.

	Development Assumptions		
Grades	Low	Medium	High
K-6	1,850	2,170	2,590
7-8	530	620	740
9-12	1,060	1,240	1,480
Total	3,440	4,030	4,810
1980-1990 Housing Units per Year	196	390	586

Library

The municipal library is located on Kingston Lane adjoining the municipal complex. The library has 7,361 square feet of space, and 44,104 volumes.

The 1980 population of South Brunswick was 17,125. Based on that population level, the Public Library Association (a division of the American Library Association) recommends a total of 12,000 square feet of total floor area, and a total of 34,250 volumes. Based on these criteria, the library is deficient in floor area but is above the minimum in volumes.

With South Brunswick growing at a fairly rapid rate, and with the middle and high schools located nearby, the library should be expected to play a more important role in South Brunswick than might be the case for other municipalities of similar size. The Library Director sees a need for a library expansion to 80,000 volumes and a total of almost 20,000 square feet. If this type of expansion occurs, it should accommodate the needs of the township up to a population of 40,000 based on volumes and 33,300 based on floor area. The residential development anticipated in this Master Plan provides for a total population of 43,000 by the year 2000, but it is uncertain whether sufficient development will take place to reach that number.

The proposed expansion appears reasonable in light of the overall growth planned for the township. The library is centrally located, convenient to future population centers, near projected major roads (Route 522), and convenient to the middle and high schools. While it is generally advisable to locate a library in a high activity area, such as near a shopping center, the existing location is suitable because of the concentration of public facilities and the location near the geographic center of the township.

Municipal Administration

The municipal building is located at Kingston Lane and Monmouth Junction Road in the municipal complex. As with the library, the municipal building is located near the geographic center of South Brunswick.

Originally occupied in early 1977, the building contains about 24,000 square feet of floor area and accommodates 50 full-time and 12 part-time employees. All municipal functions are handled from this building except for police and

public works, which are located in adjoining buildings in the municipal complex.

In spite of anticipated growth in the township, no expansion of the municipal building is foreseen in the near future. If expansion is required, it should occur on-site, with continued concentration of municipal functions in this portion of the township.

Maintenance Facilities

The Department of Public Works is located in the municipal complex in its own building near the municipal building and police headquarters. Among the Department's responsibilities are road maintenance and improvements, maintenance of municipal buildings and grounds, as well as public parks and recreation areas. All vehicles and equipment are maintained by the Department, which also has the responsibility for maintaining storm sewers, and maintaining and installing water and sewer lines.

The Department has many pieces of major equipment to carry out its functions. Of the 27 pieces of equipment, 18 were built 10 or more years ago. Of the remaining 9 pieces, only two are less than five years old. While age alone is not an indication of the need to replace or upgrade equipment, it is an indicator of the remaining useful life and can serve as a basis for a replacement schedule for the equipment and vehicles.

The Department proposes a replacement program to update all the equipment and vehicles by 1986, including the addition of a warehouse and some new equipment. While this is an ambitious program, it is important to work with effective equipment in the provision of municipal services.

There are 48 employees in the Department. In addition to the Director, there are 3 supervisors, 6 foremen, 34 operators, maintenance men and laborers, one part-time laborer and 3 administrative or clerical personnel.

Police

The Police Department is located in the public safety building in the municipal complex at Kingston Lane and Monmouth Junction Road. Near the geographic center of the township, and in the heart of the other township facilities, the location is highly suitable not only for present, but for projected development patterns as well.

There are 43 sworn officers in the Department. Five civilian dispatchers, 3 secretaries and 8 regular school crossing guards fall within the Department's jurisdiction.

General guidelines on the number of officers needed to serve a municipality indicate 1.5 to 2.0 officers per 1,000 population. At that standard, South Brunswick should have 26 to 35 officers. However, adjustments are warranted based on the nature of the area being served. While there are no precise formulas, the fact that the township has over 20 miles of State highways (not counting the New Jersey Turnpike), an above average land area, difficult access from one side of the township to the other because of limited railroad

crossings, and an above average concentration of employment centers lean toward police ratios in excess of 2.0 per 1,000.

In a township as large as South Brunswick, police vehicles are an integral part of the force. The Department has 23 marked and unmarked cars, two of which are used for administrative purposes while the balance are for police duties. Since police vehicles are subject to heavy usage, there should be a regular replacement program. A two year replacement program is recommended. At that rate, about 12 vehicles should be replaced every year.

The public safety building is experiencing some problems in providing sufficient space and facilities to meet the day-to-day needs of the Department. It is beyond the scope of this Master Plan to comment on the extent to which expansion may be warranted. However, it is important to continue this location as the police headquarters, and accommodate whatever expansion may be required on-site.

If the township's population increases to 43,000 by the year 2000 along with the anticipated increases in employment, a total force of 85 to 100 officers should be provided. If the low projection of 24,000 is realized, along with a lower rate of job related growth, the number of sworn officers by the year 2000 should increase to 48 to 55. Therefore, depending on the rate of growth, the township should add as little as one officer every 4 to 5 years and as many as 2.5 to 3 per year, with adjustments made on the basis of building permits issued. If building takes place at the rate of less than 200 units per year, the number of officers would increase at the low rate indicated in this paragraph, while the production needed to justify the high rate would be almost 600 units per year.

Fire

Three fire stations are located in South Brunswick, all of which are found to the west of the main railroad line. The general standard for station locations is that they should serve 1.5 miles in built-up areas and 3 to 4 miles in rural areas. It is particularly important that they have convenient access to the major industrial and office/research areas of the township.

The most easterly station is located in Monmouth Junction at the intersection of Ridge Road and East New Road. It has convenient access to the rural areas to the east of the railroad, and by travelling east on Route 522, it has access to developing portions of Dayton, although it must rely on the existing narrow bridge crossing of the railroad to get to the Dayton area. A 1.5 mile service radius reaches the New Road-Route 1 intersection to the north, the Ridge Road-Perrine Road intersection to the west, the Stout's Lane crossing of the railroad branch to the northwest, and the high school and IBM in the Dayton area. A four mile service radius in the rural area to the south covers the entire area to the industrial zone along Route 130. The station has an aerial truck, a field truck and two pumpers. It sees the need for a new pumper at the present time, another in 1986 and a utility truck in 1988. A new facility in the Dayton area is nearing completion. This new facility is important in providing fire protection in the township. It is located in the vicinity of proposed Route 522 at its intersection with Georges Road, and it

will provide much needed coverage for the residential and industrial areas located east of the railroad.

The Kingston Volunteer Fire Company serves the southwest portion of the township. It is located in the heart of Kingston and serves the industrialized portions of Ridge Road east of Route 1, the southerly end of Route 1, and the Route 27 corridor almost up to Old Road within the recommended 1.5 mile service radius. The Company feels the equipment at the station is performing in a satisfactory manner, not requiring any replacements within the next six years. Its equipment includes three pumpers and an emergency truck. Station personnel see the need for a new station located near Route 1 and Raymond Road to provide service to an area proposed for development in this Master Plan, particularly in the proposed Route 522 corridor. A station in this general area of Route 1 near Raymond Road and Stouts Lane would improve the coverage of the Route 1 area, which now has large sections lying outside a 1.5 mile service radius of any fire stations. It is recommended that the station be located closer to Route 1 than Route 27 to improve coverage within the township.

The Kendall Park Volunteer Fire Company is located on New Road about half-way between Routes 1 and 27. Most of Kendall Park lies within the 1.5 mile optimum service radius. The Company has five pieces of major equipment, including an aerial truck, two pumpers, a truck for fighting brush fires, and a rescue vehicle. An engine replacement is seen for 1985-1986, but the major change proposed for this section of the township is a new station in the Brunswick Acres area. In order to get maximum advantage from the new station, it should be located near Route 1 close to either the Deans Lane or Henderson Road jughandles. In this location, improved coverage can be provided not only to Brunswick Acres, but to Deans, the nearby industrial areas, and areas proposed for higher intensity development in this Master Plan. This will provide coverage from within the township which can be supplemented by coverage from the fire station located in Franklin Park.

With the types of fire station proposals outlined above, most of the township will be adequately covered. The weakest coverage area will be in the industrial area along the section of Route 130 lying south of Stults Road, which is a major part of the township's tax base. If possible, an additional station should be considered for this area, although this should only be seriously considered if it could attract sufficient volunteers to staff it.

Rescue Squad

There are three first aid and rescue squads located in the township, one in the Kingston area, one in Kendall Park and one in Monmouth Junction. The location and quantity of rescue squads should relate to several factors, not the least of which is the ability to secure a sufficient number of volunteers to operate an effective station. Travel time to various parts of the township is a very important consideration in site selection. It is also important to locate rescue squads in areas where there is little chance that traffic congestion or restricted access would result in costly delays in reaching the scene of an emergency.

The Kingston First Aid & Rescue Squad is completing a new station at Route 27 and Raymond Road, with access provided to both roads. It replaces a rented facility in Kingston. This new location should provide improved access in the Route 27 corridor and throughout the southwesterly part of the township. The station has three vehicles to handle emergencies. During 1980, this station averaged about 5 calls per week.

The Kendall Park First Aid & Rescue Squad had the most calls of the three stations in the township, having responded to an average of about 15 calls per week during 1980. The station is located on New Road next to the fire station, providing reasonably convenient access to all of Kendall Park, the northerly part of the Route 27 corridor, and the central part of the Route 1 corridor. The station has three ambulances and a crash truck.

The Monmouth Junction First Aid & Rescue Squad is located on New Road in the village. It is the only facility located east of Route 1, so its coverage must extend to the Route 130 corridor, including the industrial areas. With the congestion which occurs at times in Monmouth Junction, this station can have its response time affected, particularly if it attempts to travel east on Route 522. During 1980, the station averaged 14 calls per week, which is almost as high as the Kendall Park station. With continuing residential and industrial development occurring east of the railroad, the squad sees the need for a new station in the Dayton area, which makes good sense. Site selection could be coordinated with the fire house site, and should focus either on the intersection of proposed Route 522 with Georges Road or 522 and Route 130. Equipment at the station includes a van, an ambulance and a boat.

With a new station in the Dayton area, particularly if it has good access to Route 130, no additional rescue squad coverage would appear to be needed. Coverage of the northerly part of the township, particularly west of the railroad, could be provided by either the Dayton, Monmouth Junction or Kendall Park squads. If future development and slow response times to the northerly section show a need for an additional station, it should be located near Route 1 in the vicinity of Deans Lane or Henderson Road. Since Deans Lane provides access to the easterly side of the railroad, it would supplement the coverage provided by the Dayton squad.

Historic Resources

The South Brunswick Township Environmental Resource Inventory, prepared by the township's Planning Department, identifies areas and sites of historic significance. Included are 23 specific buildings, structures or sites which should be considered for preservation and protection of the township's heritage. Also shown are the many additional buildings and features which remain from past eras which require further study to determine their historic and cultural significance in the township.

In addition to the specific structures and sites, the older sections of the villages of Kingston and Monmouth Junction are shown as potential historic districts, which would have a particular zoning treatment to assure considerate treatment of building renovations and the placement of new structures so the historic character is not adversely affected.

Identification and protection of historic features should be an integral part not only of long-range planning, but of site plan and subdivision review as well. Developers and residents alike should be placed on notice that the township takes its historic resources seriously, and that it will endeavor to incorporate historic preservation in its review of all development applications.

UTILITIES

This background report provides information on water, sanitary sewers, storm drainage and landfill in the township. The limitations and opportunities they offer for development are presented, along with conclusions on the extent of service to be provided in each of these utility categories.

Water

A Water Master Plan was developed in 1975 and updated in May, 1981 by Van Cleef Engineering Associates. It describes the existing system operated by South Brunswick Township and offers recommendations on improvements to the system as well as expanded service areas.

The township's Planning Department prepared a report in April, 1982 entitled "South Brunswick Township: Development and Potable Water Supply in the 1980's", which addresses the general problem of limited diversion rights from groundwater resources and its effect on development opportunities in the township.

The Van Cleef report identifies service areas, existing lines and facilities, and proposed improvements to the system. The major improvements recommended are a new storage tank in the vicinity of the Sand Hills Road - Beekman Road intersection, an elevated tank in the Old Road area to alleviate a low pressure problem due to the high elevation of the land, correction of a design problem at Five Corners in Dayton, completion of two loops along Route 27, connection of Black Horse Lane main to Route 1, completion of a loop in the northerly part of Route 130 in the vicinity of Georges Road, completion of a connection between Jamesburg Road and Stults Road mains, and completion of a connection between Davidson's Mill Road and Cranbury-South River Road to provide a loop which would eliminate an existing dead-end problem on Davidson's Mill Road.

The Van Cleef report cautions against overdrawing groundwater resources, although it concedes there are many opinions on the extent to which safe yields can be quantified. The report of the township's Planning Department considers the diversion rights allowed to the township by the New Jersey Department of Environmental Protection, and draws certain conclusions on the limitations those rights impose on future development in South Brunswick.

It is reasonable to conclude from a reading of both reports that South Brunswick must look to surface water resources to accommodate future development. Continued reliance on groundwater as the sole resource will place the township in the position of not being able to accommodate new development, since development which has already been approved by the Planning Board could cause water consumption during peak months in excess of diversion rights.

Since the long-standing history on water consumption is that it increases without any development occurring because of lax consumer habits, increasing industrial usage, and leakage developing as the system ages, it is particularly important to identify alternate water sources at the earliest possible date to avoid interruptions in the growth of the township.

Sanitary Sewers

The provision of appropriate systems for the treatment of effluent from residential, commercial and industrial development is covered in a Draft Master Plan of Sanitary Sewerage Facilities prepared by Van Cleef Engineering Associates in June, 1981. The Plan identifies major watersheds and service areas in the township, identifies the existing system and its facilities, relates the system to projections of growth for the township, identifies major problems, and provides recommended solutions.

In order to avoid unnecessary repetition of the findings, the report should be consulted for details on service and proposals. However, the major conclusions are set forth herein, along with comments on their relationship to long-range planning in South Brunswick.

The township's sewer service is provided in two major watersheds. The Lawrence Brook watershed drains toward the Middlesex County treatment plant in Sayreville, which is part of a regional system serving some 30 municipalities. The Millstone River watershed drains toward the treatment plant operated by the Stony Brook-Millstone Sewerage Authority in Princeton.

The major problems identified in the Van Cleef report include infiltration, inadequate downstream capacity in the Lawrence Brook system related to pipe sizes in North Brunswick, and limited capacity to serve the industrially zoned area near the New Jersey Turnpike.

Recommendations included in the report, and their relative importance in the context of long-range planning for the township, are outlined below:

1. Provision of a gravity sewer interceptor along Route 130 and upgrading the pumping capacity at the Jamesburg Road Pumping Station No. 1 are recommended to improve service to the industrially zoned areas in the vicinity of the New Jersey Turnpike. To the extent these improvements are warranted, they are consistent with the objectives of providing for continued industrial development in that portion of the township.

2. The addition of a collection system to service Major Road between Route 1 and the railroad is not consistent with long-range planning because of projected continuation of low density development along Major Road. Improvements in this area should only be carried out if they help to serve the needs of the Town Center development.

3. The diversion of Kendall Park flows from the Stony Brook-Millstone system to the Middlesex system is based on cost savings and is not related to long-range land use planning.

4. The recommended collection system to service East New Road is not consistent with long-range plans for the area, which call for low density or rural development patterns because of access problems, existing low density development and the need to take extraordinary measures to provide sanitary sewers.

5. Replacement of the Plainsboro Pumping Station No. 6 would apparently be of benefit primarily to Plainsboro rather than South Brunswick. Since the effluent discharges into the South Brunswick system, the township has an obligation to address this problem, which should have its primary financial obligation carried by Plainsboro.

6. The use of high technology systems to service outlying areas which are not planned for general development should be evaluated on a case-by-case basis, relying on health related considerations to determine the need for abandoning traditional septic systems and using either septic management, vacuum or low pressure systems. Septic management should be limited to those area where there are no septic system problems, since it is not a cure for those problems. For problem septic system areas, the vacuum system is preferred over the low pressure system on the basis of easier maintenance.

7. A collection system to serve the Old Road area is needed to compensate for poor soil conditions, even though the area and the nearby portion of the Route 27 corridor is proposed for relatively low density development. Higher density areas between Route 27 and Route 1 will require sewer service from the Kendall Park interceptor, which as noted in the Van Cleef report, will have additional available capacity as the result of diversion of Kendall Park flows.

8. The proposed non-sewered areas are generally consistent with long-range planning. They include the area lying generally east of Route 130 and north of proposed Route 522, which includes the Pigeon Swamp Green Acres area. The other area lies west of the industrial zone in the southerly portion of Route 130, south of the Jamesburg Branch of the railroad and east of the main railroad line. In order to make the non-sewered areas consistent with long-range planning, the Culver Road area should be included. It lies in the Devil's Brook watershed, it is primarily undeveloped and it has significant access problems.

Storm Drainage

Consideration of the impact of long-range planning on storm water management is an important part of land use planning. Recent amendments to the Municipal Land Use Law call for preparation and adoption of a Storm Water Management Plan, but only after funding is provided by the State of New Jersey to finance 90 percent of the cost of plan preparation. This recognizes not only the importance of storm water management planning, but the relatively high cost of such engineering planning and the impact of proper management on statewide development.

In 1979, four specific problem areas were studied and reported on in a report prepared by Parsons, Brinckerhoff, Quade & Douglas, Inc. entitled "Drainage and Flood Control Study."

Two problems and related solutions were set forth for the Oakey's Brook watershed. The Route 1 crossing is subject to flooding, with a recommendation made for establishing a relatively large detention basin. The inadequacy of the storm drains in the Brunswick Acres street system was noted. Since it was a relatively minor deviation from accepted design standards, no improvements were recommended, but a more frequent maintenance program for the outfall and catch basins was advised. In this Oakey's Brook watershed, medium density residential development is proposed along Beekman Road, necessitating assurance that no existing conditions will be aggravated, which can be accomplished through the effective use of detention ponds.

The two other identified problem areas are on Major Road at the Terhune Run crossing, and in an adjoining watershed to the north at a crossing of the railroad by an unnamed stream. Both of these improvements are recommended to be coordinated with future development activity in the area. The upstream area of the Terhune Run crossing is not proposed for high or medium density development, but since an existing problem is found at this location, the need to provide a solution will be stimulated by its impact on access to an increasing population base projected for the Town Center area. Major Road will not be a prime access road for this area because of the proposed construction of Beekman Road Extension, which will cross Major Road near the flooding area, raising the possibility of solving the flooding problem at the time of construction of Beekman Road Extension.

About one-half the watershed involved in the railroad crossing of the unnamed stream lies in an area proposed for light industrial and research/office development, with the balance shown for low density development. The need for improvement to the crossing relates to the development of one large adjoining tract, so the solution should be able to be effected at the time of development of that parcel.

Specific reference is made to the South Brunswick Environmental Resources Inventory for a more detailed discussion and inventory of surface water problems and characteristics, including an identification of areas which are subject to flooding.

Landfill

The township has a landfill site in the East New Road area, consisting of 17 acres. Garbage and trash collection is provided by private collectors under individual contracts.

The ultimate reuse of the landfill is proposed to be recreation, which is consistent with an adjoining recreation area. Long-range plans for this part of the township call for rural development densities, so continued landfill operations should not adversely affect future development.

Surface water quality downstream of the landfill is monitored, and there is ongoing monitoring of groundwater quality. It is particularly important that

both surface and groundwater quality be monitored because of the landfill's location in an area which has wet soils, is subject to flooding and is near highly permeable soils which overlay the Raritan Formation, one of New Jersey's major aquifers.

RECREATION

South Brunswick has an active recreation program administered through the Recreation Department, with advice and guidance from the Recreation Advisory Committee. In the development and use of recreation facilities, it has been guided by a plan developed in June, 1975 entitled Parks Master Plan, prepared by the South Brunswick Planning Department.

The township is served by a variety of state, county and municipal park and recreation areas, and additional areas are proposed for acquisition and development.

At the state level, there are three park facilities. The Delaware/Raritan Canal State Park in the Kingston area is part of a linear park system oriented to the canal, with the intention of preserving part of the historical significance of the canal in the development of central New Jersey. While the existing holdings of the state along the canal do not encompass much more than the immediate canal area, the Parks Master Plan calls for expansion to Mapleton Road, which will not only improve the setting for the park, but improve its accessibility and enjoyment by township and other nearby residents. Also in the vicinity of Kingston is the Cook Natural Areas, which encompasses 52 acres. It was donated to the state as a natural area with no improvements. The other state facility is an acquisition of land in the Pigeon Swamp area. This is projected to be a major park area, primarily established to protect the environmental quality of Pigeon Swamp and the underlying aquifer. While its size is reduced from the original extent of proposed acquisition, it still represents a sizeable land area, lying generally west of the New Jersey Turnpike, north of proposed Route 522, east of Fresh Ponds Road and along both sides of Deans-Rhode Hall Road. Both state park facilities are shown on the map entitled Existing Parks and Open Space on Plate 11.

The county has a major park facility located northeast of Deans known as Davidson's Mill Pond Park. It includes most of the land lying east of Route 130, south of Davidson's Mill Road, west of the PSE&G right-of-way and north of Deans-Rhode Hall Road. The county also proposes acquisition of lands along Ireland's Brook to protect the areas subject to flooding and the environmentally sensitive steep slopes defining the limits of the stream corridor. The soil characteristics along Ireland's Brook indicate that they are highly permeable, and that it is an outcrop area of the aquifer, making it very important to protect the integrity of surface water quality because of its functional relationship to the aquifer and groundwater resources.

The existing municipal park system includes active and passive recreation areas in a variety of locations. School buildings and lands should be considered as a part of the total recreation system because of the relationship which exists in South Brunswick of active community use of the schools and grounds for recreation purposes.

In addition to the schools, township park facilities are found in the areas shown on Plate 11, and described below:

1. West New Road Park: The largest of South Brunswick's municipal parks, it encompasses 152.5 acres and includes 3 ballfields, tennis courts, basketball courts and a community center.

2. East New Road Park: This park has a total of 110.7 acres, part of which is the municipal landfill. There are five ballfields in this actively used park, which has room on-site to expand both its active and passive recreation facilities. While the landfill is in operation, there are some conflicts between park users and trucks, which are proposed to be resolved through the construction of a new access road to the landfill on the westerly side of the park.

3. Heathcote Park: At 41.7 acres, this park is the largest of the neighborhood parks, dedicated to public use through the cluster provisions of the zoning ordinance. It primarily serves the needs of residents of the immediate area.

4. Brunswick Acres Park: This 41.2 acre park area adjoins a 20 school site, providing an extensive recreational and educational complex also reserved through the cluster provisions of the zoning ordinance. Because of somewhat higher density development than in the Heathcote area, this facility is accessible to a greater number of people within convenient walking or bicycling distance. As with Heathcote Park, the orientation of this park is toward serving the immediate neighborhood.

5. Reichler Park: This is the most geographically central location of the township parks. Located in the municipal complex between Kingston Lane, Major Road and Route 522, it includes 26.5 acres and a variety of facilities, including 4 ballfields, a kitchen facility, pavilion and lavatory. Orientation of this park is township-wide, but it is convenient to a growing residential area which will have convenient access. It has a sound orientation to the high school and middle school, and relates well to long-range plans for township development.

The above listing and descriptions represent the larger facilities in South Brunswick. Smaller parks, primarily neighborhood oriented, include Kingsley Park at 6.9 acres, Bedford Park at 2.4 acres, Aldrich Park at .5 acres, Dayton Square Park at .47 acres and Walnut Park at .36 acres.

It has been the township's practice to acquire park and open space areas through the subdivision review process, with the objective of protecting environmentally sensitive areas such as flood plains, and establishing active recreation areas where warranted based on anticipated needs of the population. In addition to dedications of land through the subdivision process, the township is attempting to upgrade its recreation facility system through the use of funds from the New Jersey Green Acres Program. Active proposals under consideration for Green Acres funding include:

SOUTH BRUNSWICK TOWNSHIP

MIDDLESEX COUNTY, NEW JERSEY

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SOURCE: TOWNSHIP TAX MAPS 1980

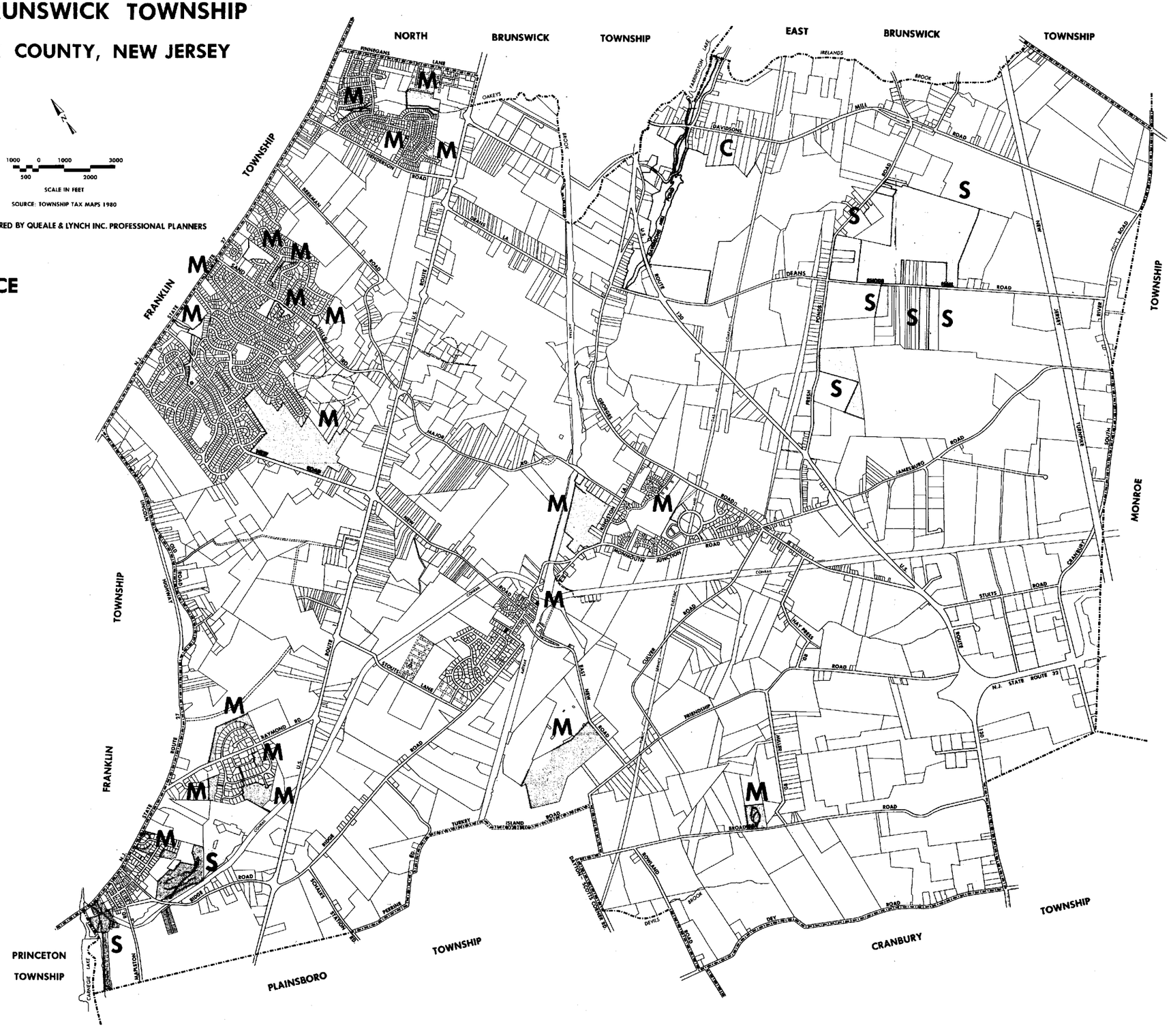
BASE MAP PREPARED BY QUEALE & LYNCH INC. PROFESSIONAL PLANNERS

Plate 11
PARKS AND OPEN SPACE

S STATE

C COUNTY

M MUNICIPAL



1. Expansion of Reichler Park to include the lands lying west of the current holdings, extending to the proposed alignment of Route 522 at its crossing of the railroad. While acquisition would include the area to existing Route 522, active recreation development would lie north of proposed 522 only. In addition, a variety of new recreation facilities are proposed at this park, including swimming. The entire recreation complex is projected to provide a full range of recreational activities for the enjoyment of all township residents. Supporting facilities, such as parking, lighting, fencing and improvement of the lavatories and concession stand, would be provided as needed to enable the park to function effectively.

2. The East New Road Park would have parking facilities added as well as a concession stand and lavatories, lighting, fencing and separate access to the landfill.

3. Funds have been requested to acquire lands for the Deans Pond Recreation Area, which would be primarily oriented to boating and passive recreation, serving also as a storm water management facility.

4. Improvements to the West New Road facility are not required to any great extent because of the comprehensive nature of the improvements made in recent years. Improvements called for include a concession stand and lavatory, an exercise course, a sprinkler system, and the establishment of fishing facilities and nature trails at the pond.

5. Other miscellaneous facilities are called for in the request for Green Acres assistance, including establishment of a totlot on Old Road, development of a new Kingston Acres Park, development of a new Fresh Impressions Park, and construction of a handball wall at Brunswick Acres.

While the total quantity of active and passive recreation areas in South Brunswick exceeds the generally accepted standards cited in detail in the Parks Master Plan, the township should continue to pursue the establishment of lands devoted to these purposes in the review and approval of new developments. One of the primary objectives should be to provide a comprehensive system of park and open space areas, linked together through green belts as shown on the Land Use and Housing Plan and the Recreation and Conservation Plan in the plan elements section of this Master Plan.

MASTER PLAN ELEMENTS

LAND USE AND HOUSING PLAN

The Land Use Plan is the major element of the Master Plan. The Municipal Land Use Law indicates that it serves as the basis for the ordinance regulating land use, thereby increasing its value as a planning tool. The Housing Plan, while identified in the MLUL as a separate plan element, is an integral part of the residential portion of the Land Use Plan, which is the basis for treating the two elements in the same part of the Master Plan.

Since municipal development regulations ordinances cannot effectively provide explanations and rationale for land use decisions, these matters should be explained in the Land Use and Housing Plan. In this way, the public and the elected officials responsible for adopting land use regulation ordinances can view them in the context of an overall long-range plan for the township.

Plate 12 is a map showing the Land Use and Housing Plan. It includes rural and open space designations as well as areas for residential, commercial, industrial and public/quasi-public uses. The following sections provide the basis for the conclusions drawn in the Plan.

The last Land Use Plan prepared by the Planning Board was adopted in 1974, with amendments in 1977 to incorporate more detailed housing plan information and in 1979 to add the Town Center aspect to the Plan. In order to provide continuity in the planning process, this Plan retains and restates the specific guidelines used in the earlier plans, where it is determined they are still valid. The explanatory text outlining the rationale for the various land use and housing decisions reached in this Plan relates to the planning concepts outlined in this update, providing an explanation for departures from earlier planning policies where appropriate.

A variety of land use categories is shown on the Land Use and Housing Plan. In some instances, two inherently incompatible uses abut each other, creating potential transition problems for small lots which may be located in residential areas adjoining commercial or other nonresidential districts. Consideration can be given to allowing compatible transition uses on these small lots, which may include offices, quasi-public uses or similar uses. Proper site planning is essential in order for these transition uses to function effectively.

Rural

Two large rural areas are shown, one in the Fresh Ponds area and the other in the area lying west of Route 130 and south of the villages of Monmouth Junction and Dayton. Both of the Rural areas are not projected to be served by sanitary sewers and have extensive environmentally sensitive features. They are important aquifer recharge areas, they are served by a primarily rural road system, and they include a significant amount of land having high quality agricultural soil.

Extensive development should be discouraged in these areas. Uses should be limited to residential, agricultural, public and open space/ conservation areas. Lot sizes should not average more than .5 dwelling units per acre. Zoning techniques can be employed which will provide for lot averaging based on the ability of the soil to accommodate septic systems. However, the overall density should be retained. The purpose of lot averaging would be to encourage rural housing to be built on those soils which can more effectively handle on-site disposal of effluent. Individual building lots should not be smaller than one acre with septic systems.

Based on the desire to retain recharge into the aquifer, land use regulations could be incorporated allowing on-site sewer systems for a larger development using techniques such as spray irrigation which will retain effluent for recharge. While the overall density of .5 units per acre should be retained, more reduction in individual lot sizes and increased variety in housing types could be incorporated in these developments.

A limited form of development credit transfer could be utilized within the Rural area in conjunction with the concept of using more sophisticated treatment of effluent on-site. This would involve a modified form of cluster development which would provide for the transfer of development credits based on the suitability of the sending lot for supporting development with on-lot septic systems. The septic suitability criteria of the Soil Conservation Service could be used along with the critical areas ordinance. An example of this type of control would be to allow a sending tract credits for no more than an overall .5 units per acre, but the actual number of units transferred could be less than that amount based on allowing one unit per acre for soils with "slight" limitations for septics, one unit per two acres for "moderate", and one unit per three acres for "severe". No credit would be given for critical areas such as flood plains, slopes over 15 percent, or areas of excessive wetness where the seasonally high water table is at or near the surface.

Another variation on development credit transfer could apply to the suitability of the developing site to accommodate conventional septic systems. The capacity of the developing site would be based on the formula outlined in the preceding paragraph. If the tract could accommodate more than .5 units per acre based on its suitability for septics, credits could be transferred from other Rural tracts up to the maximum septic capability of the tract, with the sending tract formula also following the approach outlined in the preceding paragraph.

Residential

The residential categories cover densities from one to seven units per gross acre. The variety of housing types provided for in this Plan meets the projected needs based on anticipated family composition, job growth and projections of total population in South Brunswick through the year 2000.

The residential aspect of the Master Plan includes the Housing Plan element as called for in the Municipal Land Use Law. The background study on population and housing characteristics summarized earlier in this report provided the basis for many of the housing mix and total quantity decisions included in this element of the Plan.

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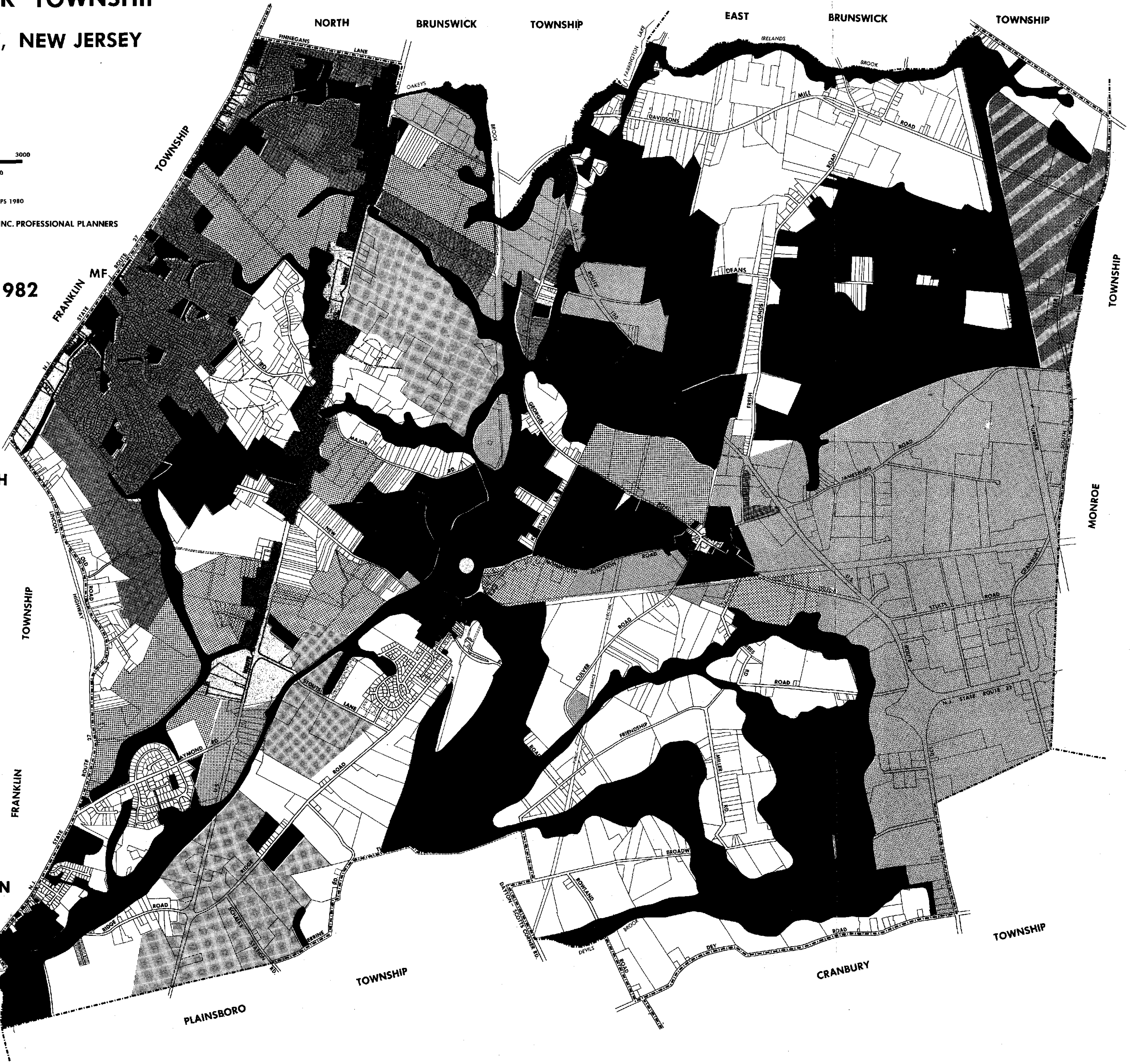
SOURCE: TOWNSHIP TAX MAPS 1980

BASE MAP PREPARED BY QUEALE & LYNCH INC. PROFESSIONAL PLANNERS

Plate 12

LAND USE PLAN AND HOUSING PLAN- JULY, 1982

RURAL .5/AC.
LOW DENSITY RESIDENTIAL 1-1.5/AC.
MED. DENSITY RESIDENTIAL 2/AC.
PLANNED ADULT COMMUNITY/
OFFICE-RESEARCH
MED. DENSITY RESIDENTIAL 3-4/AC.
HIGH DENSITY RESIDENTIAL
V VILLAGES
MH MOBILE HOMES 4/AC.
MF EXISTING MULTI-FAMILY
PRD P.R.D. 5-7/AC.
NEIGHBORHOOD COMMERCIAL
RETAIL COMMERCIAL
HIGHWAY GENERAL COMMERCIAL
LOCAL SERVICE PROFESSIONAL
EMPLOYMENT CENTERS
GENERAL INDUSTRIAL
LIGHT INDUSTRIAL
RESEARCH
OFFICE/CORP. HEADQUARTERS
PUBLIC/QUASI-PUBLIC
OPEN SPACE/CONSERVATION/RECREATION



The residential land use goals and objectives are set forth in general terms below, and more specifically as they relate to the individual density categories identified in this Plan:

1. Incompatible land uses that have existed in residential areas should be eliminated or adequately buffered and separated from residential uses.

2. Residential uses should be separated from roads which carry primarily non-residential traffic loads.

3. In wooded areas, residential uses should be clustered in order to preserve woodlands and enhance residential development.

4. Residential density concentrations should be based on adequate consideration of facilities, utilities and transportation.

5. Creation of a town center area with higher density housing, supporting commercial development and a focus on a new road network and a proposed rail passenger station.

6. Continued recognition of the existing villages of Kendall Park, Franklin Park, Kingston, Monmouth Junction, Deans and Dayton and the creation of new villages in the vicinity of Dayton, Monmouth Junction, the Heathcote area and near Deans Lane.

7. Development of adequate affordable housing for low and moderate income families (including senior citizens).

8. Improvement of the existing housing stock in the township.

The approaches called for to meet the affordable housing objectives of the township, and particularly the needs of lower income households, are as follows:

1. Modification of standards in the development regulations ordinance which inhibit the production of lower cost housing, while retaining all those standards necessary for the protection of the public health, safety and welfare.

2. Encourage the production of subsidized housing and "least cost" housing, such as manufactured housing.

3. Limit production of housing for lower income households to preserve an appropriate balance between this housing and the total housing stock, not permitting the number of "least cost" units to exceed 35 percent of the total number of housing units in the township.

4. Encourage the construction of affordable housing in or near built up areas and as convenient as possible to public transportation, employment, shopping and community facilities.

5. Encourage the preservation of existing housing, particularly giving attention to the older established neighborhoods.

The following sections describe the various residential density categories and include general guidelines for land use regulation.

Low Density Residential / 1-1.5 Units per Acre: This land use category is found primarily west of the main railroad line and includes a variety of areas, some of which are developed. For areas of new development, clustering techniques can be used, but the primary housing type should be detached single family homes. New units in these areas should be served by public sewer and water systems since the densities are too high for individual septic systems. Where development occurs without sewer and water, the guidelines set forth for the Rural areas should apply, along with the recommended flexibility in land use control outlined in that section of the Land Use and Housing Plan.

Several of the Low Density Residential areas reflect a pattern of existing lots with relatively narrow street frontage and significant depth. These areas are shown on Black Horse Lane, Deans Lane, Major Road, New Road and Route 1 south of New Road.

The areas shown for this land use in the Sand Hills area both east and west of Route 1 reflect not only an existing development pattern, but an area impacted by relatively steep slopes.

The area along Georges Road and Kingston Lane is shown in recognition of an existing development pattern as well as some environmental sensitivities east of Georges Road. The designation along Route 27 and Old Road also recognizes the pattern of existing development as well as the limited capacity of both roads to accommodate additional development.

The area west of Route 1 and south of New Road is included in this category because of the potential negative impacts from the landfill site located to the north. If the problems associated with the landfill are resolved sufficiently to allow for intensive residential development, this site could be increased in density. Subsequent Master Plan reexamination should monitor progress in this regard.

The area west of Route 1 and including the Raymond Road area south to the Plainsboro line is shown in this use because of existing development patterns and the limited traffic carrying capacity of Ridge Road. The area east of Route 1 served by Ridge Road is similarly impacted by limited traffic carrying capacity, and includes existing development in this density range.

In broad terms, this area should not be considered a major supplier of future housing for the township, since the areas included do not lend themselves to large volume production of housing.

Medium Density Residential / 2 Units per Acre: This category includes the developed portions of Kendall Park and Brunswick Acres as well as some areas for new develpment. Clustered single family detached homes and duplex or

semi-detached units would be appropriate in this area within a gross density of two units per acre.

The three larger areas for new development in this use category are located south of Henderson Road, west and south of Kendall Park, and east of the New Jersey Turnpike north of Route 522.

The area south of Henderson Road is proposed to serve as a transition to the medium density area of mixed housing types proposed along Beekman Road. It is intended to provide for similar density development along both sides of Henderson Road.

The area south and west of Kendall Park is related to several important factors. While the density relates to the gross density of Kendall Park, this density should not be permitted until the extension of Route 518 is made. If access is provided only to Route 27 or Old Road without a connection to Route 518, the gross density should be reduced to the Low Density Residential level of 1-1.5 units per acre. The technique for development control is outlined later in the Land Use and Housing Plan in the section on Development Timing.

The area shown east of the Turnpike is recommended for a planned retirement community at the same gross density of two units per acre, which should be low enough to provide sufficient flexibility in design to provide for the treatment of effluent using spray irrigation or similar on-site treatment, all of which would have to be compatible with recharging the aquifer. A buffer should be established along the Turnpike to shield the noise impacts in this location. Because of this area's location and visibility from the Turnpike, an alternate land use could be low density offices. This is covered in greater detail in the section on employment centers later in this Plan.

The three remaining areas of two units per acre residential are found along Finnegan's Lane and in the vicinity of Deans and Dayton. Only the Finnegan's Lane area has the locational characteristics which would support clustering to include duplex and semi-detached units. The Deans and Dayton areas should be limited to single family detached units.

Medium Density Residential / 3-4 Units per Acre: Eight areas of the township are shown in this use category, which includes only lands for new development at a gross density of three to four units per acre. A wide variety of housing types should be permitted in these areas ranging from small lot detached single family to zero-lot-line and patio house designs, semi-detached and duplex, attached housing and garden apartments. Lower cost housing can be provided in these areas along with conventional market-rate housing. Net development densities can be considerably higher than the gross densities shown in order to provide for reduced development costs and the production of housing which is more affordable. These areas should include consideration of environmental characteristics in the assignment of gross densities, with adjustments in density based on flood plains, wetlands, steep slopes and other areas of critical environmental concern.

Many of these areas are affected by the Development Timing and Off-Tract Improvement provisions of this Plan, as outlined in subsequent sections, and

described below. The base density which should be allowed in each of these areas in the absence of providing the specific improvements called for should be about one-half the total units or square footage of nonresidential use permitted on the site, considering appropriate adjustments based on the critical areas ordinance:

1. The area located between Deans Lane and Black Horse Lane should only achieve full development based on the extension of Henderson Road to Black Horse Lane, as shown on the Circulation Plan.

2. The area located along Beekman Road should have full development related to improved access to Route 27 and the completion of the Beekman Road extension to Route 1, which would also be coordinated with the development of the Retail Commercial area on Route 1.

3. The area lying between Route 1 and Route 27 lying north of Raymond Road should have full development related to the completion of that section of realigned Route 522 between Routes 1 and 27. The connection to Route 1 would be coordinated with the development of the Retail Commercial area on Route 1.

4. East of Route 1 between Stouts Lane and New Road, full development should be based on the New Road to Route 1 section of Route 522 and the completion of a connector between Route 522 and Route 1 at the jughandle between Stouts Lane and New Road. Because of the high proportion of improvements related to the size of this area, and due to the proximity of this area to the Town Center development and the opportunity for properly handling traffic flows, consideration can be given to treating this area in the residential density category of up to 7 units per acre, provided the added units above 4 units per acre are constructed to least cost or affordable housing standards.

5. The area lying between New and Major Roads should have full development based on either the upgrading of the Major Road intersection with Route 1 or an internal connection to new Route 522 or Beekman Road Extension.

6. The area lying east of Monmouth Junction across from the municipal complex should have full development conditioned on the completion of the proposed Route 522 bridge over the railroad.

7. The area east of Georges Road should have full development based on completion of the portion of Route 522 between Georges Road and Route 130.

8. The remaining Medium Density Residential area lying south of Dayton along Georges Road would not be affected by development timing.

<u>High Density Residential / Villages:</u> The existing villages of Kingston, Monmouth Junction and Dayton are included in this category. Zoning should be

established to permit a continuation of the existing development pattern. In the Dayton area, some expansion of the village is called for in the Plan, providing for growth both southwest and northeast of the village center. Development densities for these limited growth areas should correspond to existing gross densities, which are about 2 to 3 units per acre. However, new development on these somewhat larger tracts can provide for some added housing variety, but in a manner compatible with the general scale of Dayton. Land uses in the Village areas can be more varied, allowing conversions of larger homes into smaller residential units for two or more households, home occupations, and other uses which support the pedestrian scale of development common to small villages.

High Density Residential / Mobile Homes: Four areas fall in this use category, three of which are existing mobile home parks located along Route 1. The fourth area provides a location for a new a manufactured housing development off Route 130 south of Deans-Rhode Hall Road. While this is strongly recommended for this type of development as opposed to more conventional housing, the land use regulations ordinance could allow for greater development flexibility than just manufactured housing by including the area in a Medium Density Residential use at 3 to 4 units per gross acre, which is the suggested density range for the site. Full development of the area shown for new mobile homes in the vicinity of Deans-Rhode Hall Road should not be permitted until satisfactory improvements are made to the Route 130 intersection with Deans-Rhode Hall Road, which is one of the most hazardous intersections in the township.

It is important to note that manufactured housing built to conform to the New Jersey Uniform Construction Code is permitted throughout the township subject to the same restrictions imposed on site-built housing. The distinction drawn in this section is to recognize the potential for locating manufactured housing built under the code promulgated by HUD on a national basis, and generally consisting of individual ownership of homes on land that is leased and in common ownership.

High Density Residential / Existing Multi-Family: This simply provides for Land Use and Housing Plan recognition of existing multi-family housing areas. New developments of multi-family housing should be incorporated as a housing type in the Medium and High Density Residential areas to be developed on larger tracts.

High Density Residential / 5-7 Units per Acre: Two areas are shown in this use category. One is located north of Dayton, which is developing at a gross density of five units per acre, while the other is the area referred to as the Town Center area, which provides for a gross density of seven units per acre. As in other development areas, density adjustments should be made based on the environmental characteristics of each site, as provided for in the township's critical areas ordinance.

Full development of the Town Center area is affected by development timing. Road access to the area is poor, so full development should not be permitted until new Route 522 provides a direct link from Town Center to Route 1, the

northerly link to Route 1 is completed through the connection of Beekman Road Extension to Town Center through the area northeast of Major Road, and the Route 522 bridge over the railroad is completed just north of the existing bridge. Development timing should provide for no more than one-third of the units to be authorized for construction based on the existing road network, an additional one-third based on the completion of the proposed Route 522 bridge, an additional one-sixth based on the completion of Beekman Road Extension to Route 1, and the remaining one-sixth based on the completion of a connection to Route 1 south from proposed Route 522.

No new connections should be made from Town Center to Route 1 between New and Major Roads because of the limited distance between the two existing traffic lights.

Town Center should provide sufficiently high density development to establish apartments and attached housing within walking distance of the proposed rail passenger facility north of Monmouth Junction.

Commercial

The following objectives and guidelines are established for commercial uses:

1. A variety of commercial complexes and uses should be planned to meet varying needs, i.e. neighborhood, retail, highway and local service professional.

2. The various commercial uses should not conflict with industrial and residential uses, but be compatible with them.

3. Commercial uses should not be scattered, but located in consolidated places, so circulation and public transportation can be effectively provided.

Neighborhood Commercial: Six Neighborhood Commercial areas are shown. They include local retail sales of goods and services, primarily to meet the needs of residents of the immediate area.

Four of these areas are established, lying in the villages of Kingston, Monmouth Junction, Dayton and Deans. The two remaining areas are shown to service the High Density Residential / 5-7 Units per Acre uses.

This is the only commercial use category which should allow both residential and local service commercial uses.

Retail Commercial: The two retail areas established along Route 27 are continued, with a reduction in the vicinity of Finnegan's Lane. This use category is intended to provide for a variety of stores, ranging from food stores to small department stores. It is not intended to include regional shopping centers of the type normally anchored by one or more major department stores, but are more oriented to serving are relatively local market, but with a larger service area and a broader variety of retail offerings than would be found in the Neighborhood Commercial areas.

Two new retail locations are shown on the Plan along Route 1. Both locations involve the extension of roads considered vital to traffic circulation in South Brunswick. Intensive commercial retail development is not encouraged at these locations in the absence of at least an accommodation of the road connections to the jughandles. The Development Timing and Off-Tract Improvement sections of the Master Plan should be applied to retail commercial development in these two areas, which were selected because they are unencumbered by intensive highway development and an established pattern of conflicting turning movements and high accident rates.

Local Service Professional: This use category includes a variety of professional and related office uses designed to serve the needs of nearby residents. Typical uses would include medical, dental, legal, accounting and real estate.

Three areas are shown on the Plan in this category, two of which are along Route 27. In the vicinity of Beekman Road, this category is intended to provide an alternate use for the dwellings located along Route 27. In the Finnegan's Lane area, this use is proposed to lessen the potential impact which retail commercial development could have had on traffic flows in the area. The remaining area is located in Dayton on Culver Road between the village center and the industrial area to the west, serving as a transitional use.

Highway and General Commercial: This category is found primarily along Route 1, with a small area located on Route 130 north of Deans. It should consist primarily of highway-oriented uses, offices, motels and hotels, restaurants, garden centers, home supply, lumber yards, automobile sales and service, single establishment retail stores, but not to include food stores, department stores, shopping centers and other similar high traffic generating retail uses, which should be located in the Retail Commercial use areas.

Employment Centers

This use category includes industrial, research and major office centers. The following goals and objectives are established for Employment Centers:

1. Major arterial roads and railroads should be directly available to industrial sites.

2. Utilities, such as sewer, water and electric should be available.

3. Sufficient land should be provided to allow for expansion.

4. Residential uses opposite or near these uses should be buffered adequately.

5. Consideration should be given to environmentally sensitive areas when designing developments in Employment Center areas. The environment should not be impaired by the development of ratables.

6. Industries which have light water use should be encouraged.

General and Light Industrial: This use category applies to those lands located along Route 130 in the vicinity of the Turnpike. This is the largest industrial area in the township, is served by rail, and is relatively unencumbered by residential development.

Three smaller areas are oriented to industrial use, including the area north of Black Horse Lane, the area north of Deans, and the area along Stouts Lane. The light industrial distinction can be made through restrictions on outdoor storage of materials, as well as lower building and lot coverage.

Office, Research and Corporate Headquarters: This would include less intensive use than the industrial categories. The largest of these areas are found east of Route 1 between Major Road and Deans Lane, and in the southerly portion of Route 1 extending south from the proposed Retail Commercial area near Raymond Road. The relatively small area at the intersection of Deans-Rhode Hall Road and Route 130 is suitable for this designation, as are the Employment Center areas around Dayton because of their proximity to residential development and the need to minimize incompatibility.

As mentioned in the Medium Density Residential / 2 Units per Acre category, the area lying east of the Turnpike and north of Route 522 could accommodate low density office or corporate headquarters development. Careful attention would have to be given to traffic generation and on-site disposal of effluent in accordance with the goal of protecting the integrity of the aquifer.

Development Timing

Reference was made in several sections of this Land Use and Housing Plan to coordinating development with the completion of certain road improvements considered necessary to effectively service these areas. The specific areas have been identified in the discussions of the various land use categories. This approach has been included in the Plan as an alternative to the earlier Master Plan recommendations related to development stages.

The relationship of development timing to specific applications for development should be covered in the land use regulations ordinance. Applicants would be able to design their developments to the ultimate density outlined in the Plan, but they could not develop more than one-half the units (one-third in the case of the Town Center High Density Residential area because of the higher overall permitted density and the critical nature of road access in that area) until the required improvements were either completed or covered in a bond. Development timing would also be coordinated with the Off-Tract Improvement provisions of this Master Plan and those outlined in the ordinance regulating land use.

Plate 13 identifies those areas which would be restricted in their development timing based on the improvements specifically called for in this Master Plan.

CIRCULATION PLAN

The 1974 Master Plan set forth certain goals and objectives for traffic circulation which are still valid and continue as the objectives under this Master Plan:

SOUTH BRUNSWICK TOWNSHIP

MIDDLESEX COUNTY, NEW JERSEY

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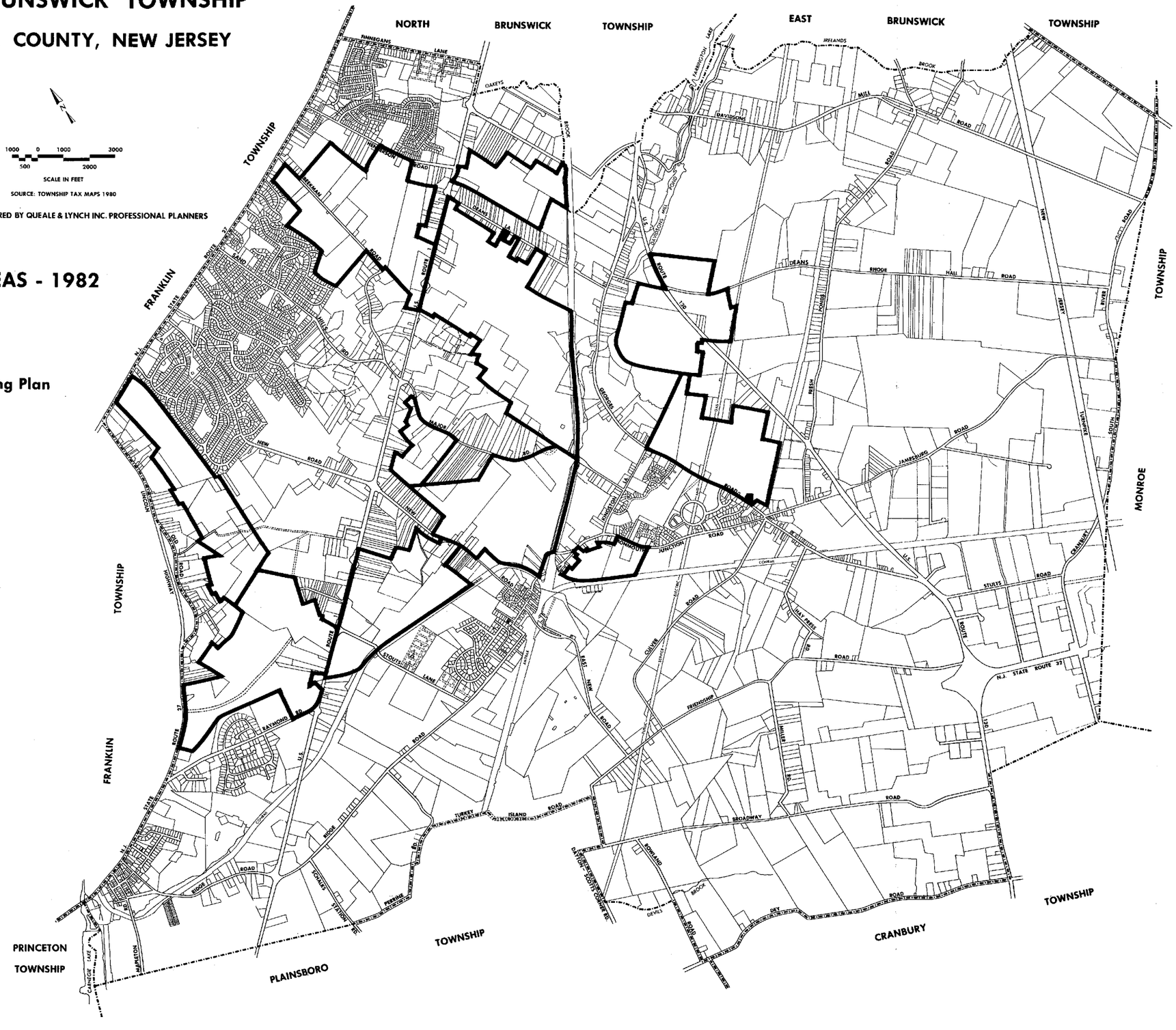
SOURCE: TOWNSHIP TAX MAPS 1980

BASE MAP PREPARED BY QUEALE & LYNCH INC. PROFESSIONAL PLANNERS

Plate 13
DEVELOPMENT TIMING AREAS - 1982

NOTE: See text of Land Use and Housing Plan



1. Provision should be made for inter- and intra-township traffic movement.

2. Local traffic should be separated, as much as possible, from through traffic.

3. Provision of better access to the various land use elements should be made.

4. Safety and efficiency for traffic should be a constant parameter for circulation design.

5. Provision should be made for a variety of modes of transportation, including pedestrian, vehicular, equestrian, cycling and public transportation (rail, bus, etc.).

6. Adequate separation and linkages between various transportation modes should be made.

7. Roadways should be carefully designed to handle necessary volumes; however, they should not be over-designed.

Plate 14 shows the Circulation Plan in mapped form. Each of the road categories is described in detail below, with an explanation of the nature of the road functions and improvements outlined, as well as a description of the mass transit and bikeway proposals suggested to support the land development patterns shown in the Land Use and Housing Plan.

Major Arterials

These are the roadways projected to carry the highest volumes of traffic. Their ultimate design should be a minimum of four lanes with paved shoulders, although the specifics of road width and access limitations are generally controlled by the state. The following is a listing of the Major Arterial roads and a description of their function:

1. Route 27 North of Route 518: Extensive development exists along the corridor served by this section of Route 27, and considerable additional development is projected both in South Brunswick and Franklin Township. This road is under state jurisdiction and, where possible, should ultimately be widened to four lanes with paved shoulders. Intersection improvements are needed at the following locations:

    a. At Route 518 to accommodate an extension of 518 to proposed Route 522.

    b. At Sand Hills Road to provide a traffic light and accommodation of left turns for southbound Route 27 traffic.

    c. At Beekman Road to improve visibility, add a traffic light, accommodate left turns for southbound Route 27 traffic, and reflect the increased importance of Beekman Road in future traffic circulation in the township.

d. At Henderson Road to accommodate left turns for southbound Route 27 traffic, and to allow for more flexibility for turning movements by widening Henderson Road in the vicinity of the traffic light.

e. At Finnegan's Lane to relocate the primary intersection to the north opposite South Drive, involving North Brunswick and Franklin Townships, and reflected in their Master Plans. This intersection improvement will provide a more direct link between the developing areas of Franklin Township and Route 1, and ultimately to Route 130 along an extension of Finnegan's Lane called for in the North Brunswick Master Plan.

2. Route 1: This is a U.S. Highway maintained by the state, and is one of the major traffic carriers in New Jersey, providing not only a direct link between Trenton and northern New Jersey, but serving as the primary access road to the rapidly expanding employment centers and residential developments located in the Princeton - New Brunswick corridor. As it exists, Route 1 is a divided highway with four lanes and paved shoulders, and all intersections with crossing streets controlled by traffic lights and jughandle intersections. In spite of the level of traffic control on Route 1, several intersection need improvement, as described below:

a. At Ridge Road, intersection redesign will be carried out as a part of the construction of Route 92. This will be a major reconstruction project which must accommodate heavilly travelled Ridge Road as well as Route 92. In the event Route 92 is not built, the Ridge Road intersection will need to be upgraded to handle increasing traffic from employment center development. Providing jughandles at the northeast and southwest corners of the intersection should help to minimize conflicts related to turning movements in the intersection.

b. At Stouts Lane, the intersection will have to be upgraded to provide for realigned Route 522.

c. At the jughandle between Stouts Lane and New Road, improvements will be required to reflect the construction of access roads linking the jughandle to proposed Route 522 to the east and proposed Route 518 extension to the west.

d. At New Road, the many conflicting turning movements and the high volume of traffic call for redesign of the intersection, which may require installation of jughandles at the northeast and southwest corners to minimize turning movement conflicts. As the highest accident intersection in the township, and in an area proposed for more development, it is critical to upgrade this intersection before additional development intensifies already existing problems. As with other intersections along

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Plate 14
CIRCULATION PLAN - 1982

EXISTING PROPOSED

MAJOR ARTERIAL

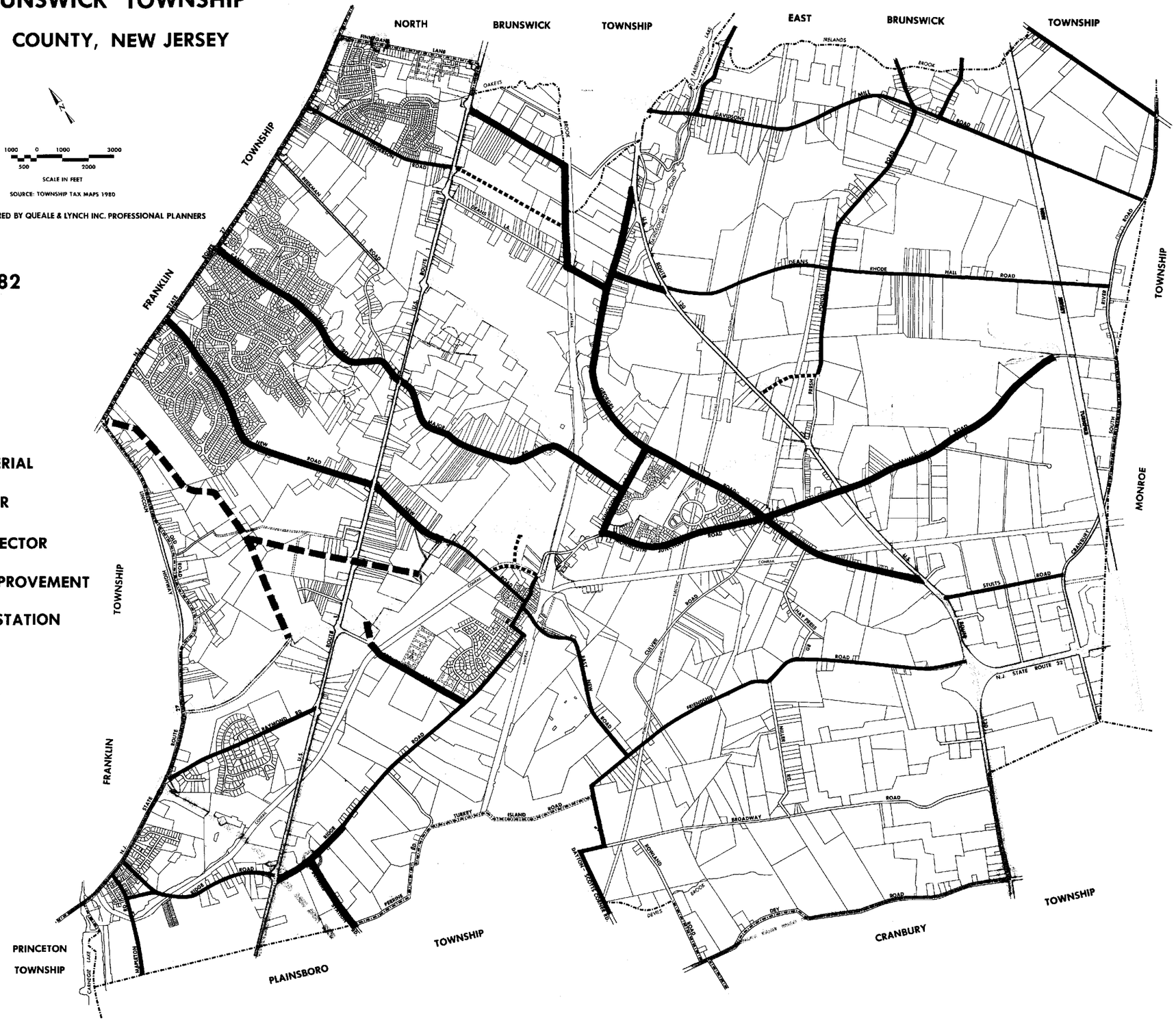
SECONDARY ARTERIAL

MAJOR COLLECTOR

SECONDARY COLLECTOR

INTERSECTION IMPROVEMENT

RAIL PASSENGER STATION



state highways, improvements must be carried out by the New Jersey Department of Transportation. Because of the problems related to turning movements at the intersection, the possibility of three phase timing of the light to handle left turns more effectively should be pursued to see whether it can be accomplished without affecting the "green" time for Route 1 traffic, which is critical to the regional traffic flows.

e. At Major Road, which also is one of the highest accident intersections in the township, the emphasis should be on reducing traffic volumes through the intersection through the construction of Beekman Road Extension. Improvements to this intersection are not easily defined, and the roads feeding the intersection, primarily Sand Hills Road and Major Road, are not able to handle high volumes of traffic because of relatively narrow and winding alignments. Due to limited sight distance for traffic at the light, "NO TURN ON RED" signs should be installed for both Major Road and Sand Hills Road traffic. As with New Road intersection, the possibility of a left-turn phase in the traffic light cycle should be explored.

f. At the jughandle north of Major Road, redesign will be needed to accommodate the extension of Beekman Road, which is proposed as a Secondary Arterial and a major part of the street system in the future of South Brunswick. Full four-way jughandle design should be incorporated in this at-grade intersection.

g. At the combined intersection of Deans Lane and Henderson Road with Route 1, redesign should reflect the construction of Henderson Road Extension to Black Horse Lane and the reduced importance of the westerly portion of Deans Lane in the overal flow of traffic in the township. If possible, the Deans Lane jughandle with Route 1 should be eliminated, and a new jughandle added at the southwest corner of the intersection of Route 1 and Henderson Road to serve left turns from southbound Route 1 travelling toward Deans.

h. At Black Horse Lane, improve the intersection as necessary to handle the anticipated increase in volume due to the designation of Black Horse Lane as a major collector, and the deemphasis on Deans Lane.

i. At Finnegan's Lane, intersection redesign will be needed to reflect the extension of Finnegan's Lane to Route 130. Until that road extension in North Brunswick is carried out, no intersection improvements are recommended.

3. Route 130: This major truck route has four traffic lanes, shoulders and a center island. It is important to the proper development of the industrial area south and east of Dayton. Improvements are needed to the center divider, which offers too many opportunities for

turning movements out of the high speed lane, cutting down on the traffic carrying capacity of the highway and increasing the possibility of traffic accidents. Several intersection improvements are needed as well, and are listed below:

a. At Dey Road, improvements will be needed because of the increasing importance of that road in the traffic circulation pattern in Cranbury and Plainsboro. A traffic light and an improved accommodation of left turns off Route 130 are needed improvements.

b. At Georges Road south of Dayton, traffic will increase due to both residential and industrial growth, necessitating a traffic light.

c. At Griggs Road and Fresh Ponds Road, realigned Route 522 will cross Route 130, requiring major intersection redesign and proper routing of traffic from Dayton heading toward East Brunswick via Fresh Ponds Road, which is an important secondary collector serving the rural area in that part of the township.

d. At Deans-Rhode Hall Road, the township's second highest accident intersection, traffic light and turning lane improvements are needed to correct a very serious design problem in the intersection. This is the highest priority improvement in the Route 130 corridor.

4. New Jersey Turnpike: Interchange 8A has become an important part of the economic growth and development of South Brunswick. Improvements to the Turnpike are outside local control.

5. Route 32: This four lane highway provides direct access between Route 130 and the Turnpike entrance. No improvements or changes are recommended for this road.

6. Route 92: This is a proposed major arterial highway bypassing Princeton and connecting Route 206 to the Turnpike at Exit 8 in Hightstown. This limited access highway will have interchanges with Route 27 and Route 1 in South Brunswick.

7. Route 522 between Route 1 and Route 130: Realigned Route 522 is planned to extend from Route 27 to the New Jersey Turnpike crossing of existing Route 522. However, the only portion of the road which is considered a Major Arterial is the section lying between Routes 1 and 130, because of the anticipated heavy traffic volumes. This section should be planned as a limited or highly controlled access four lane highway, with two paved shoulders. This entire roadway is a critical part of the overall development plan for the township since most of the higher density development proposed is oriented in some way to this proposed road alignment. As mentioned in the Land Use and Housing Plan, many of the development timing features of this

Master Plan are related to completion of sections of this roadway. Its importance to the township cannot be understated if significant additional development is to be accommodated. Several intersection improvements will be needed as a part of the development of this highway, and they have been addressed in the detailed alignment studies already completed. The intersections needing improvement are shown on Plate 14, which includes all the existing roads traversed by Route 522 as well as Beekman Road Extension and the link to Route 1 between New Road and Stouts Lane.

Secondary Arterials

These roadways are the major carriers of heavy local or intermunicipal traffic. The general design standard for these roads is an 80 foot minimum right-of-way, but a paved width adequate to provide initially for two moving lanes of traffic and two wide paved shoulders, which should be able to be accommodated in a 40 foot paved width. The reason for the excess right-of-way is to provide sufficient reserve in the event widening to four lanes is necessary. The reason four lanes is not encouraged initially is because it requires a much more controlled traffic situation because of the difficulties involved in crossing four lane roads without the assistance of traffic lights. Land uses along these arterials should have controlled access as much as possible entering the road system through secondary collectors or local streets, rather than having direct access through driveways, which have a tendency to reduce the carrying capacity of the roads.

The following is a description of the existing and proposed Secondary Arterials, which are also shown on Plate 14:

1. Route 27 South of Route 518: This section of Route 27 is shown at a lower function than the northerly section because of more restrictive development proposed in the Route 27 corridor in both Franklin and South Brunswick, and further because the volumes are lighter at this end of the highway, and the opportunities for widening are more limited because of narrow right-of-way in the Kingston area. Intersection improvements in this section of Route 27 will be needed at proposed Routes 92 and 522, with the Route 92 intersection impacting the Raymond Road intersection as well.

2. Beekman Road between Route 27 and Route 522: This is an important link between developing areas of South Brunswick and Franklin Township and the Town Center area and new Route 522. It is a key part of the development timing program called for in the Land Use and Housing Plan, and at full development it should provide effective access to Route 1 to the north, and in conjunction with new Route 522 will provide access to southbound Route 1 as well. It will also be an important link to Route 130 and the Turnpike since it will provide local road access to the important proposed Route 522 crossing of the railroad.

3. Finnegan's Lane between Route 27 and Route 130: This proposal primarily involves North Brunswick Township, but it would also provide a

new crossing of the railroad, which are relatively infrequent in this area.

4. Route 522 West of Route 1: Most of this right-of-way has been acquired through dedication. It should be developed as a part of the development of residential uses in the area, as called for in the Land Use and Housing Plan.

5. Route 522 East of Route 130: This alignment lies along the southerly boundary of the taking line for Pigeon Swamp. South of the roadway, properties are zoned for industrial use. Property owners should be approached for right-of-way dedications for this section of the roadway, which in terms of priorities for the entire Route 522 realignment is the least important of all the sections to be built.

6. Route 535 from Cranbury to East Brunswick: This is an important county road, connecting Route 130 in Cranbury, past the entrance to the Turnpike at Exit 8A, extending through the heart of East Brunswick and into South River. It is more important as a regional roadway than as a road providing service for residents of South Brunswick, although it does provide for an effective service road to the industrial area in that part of the township.

7. Dey Road: This is a more important road for the region than it is for the township, serving to improve traffic flows in both Cranbury and Plainsboro. The realignment shown is being undertaken by the county.

Major Collectors

The Major Collectors shown on Plate 14 are intended to serve primarily local needs. They should be designed to provide for two moving lanes of traffic and two paved shoulders. Four lane design is discouraged because of the difficulties it presents in gaining access to adjoining uses. Controlled access to these collectors is important. Right-of-way width should be a minimum of 66 feet, which allows for a minimum 40 foot paved width and sufficient additional right-of-way for pedestrian walks or bikeways. Residential and industrial development along these roads should have additional front yard setbacks or reverse frontage with dense planting, and direct driveway access should be kept to a minimum.

Major collectors shown on the Circulation Plan are listed below:

1. New Road between Route 27 and proposed Route 522.
2. Sand Hills Road.
3. Major Road.
4. Black Horse Lane and the easterly portion of Deans Lane.
5. Schalks Station Road extending from Ridge Road into Plainsboro.
6. Ridge Road extending from Route 1 to east of Schalks Station Road.
7. Stouts Lane.
8. Kingston Lane.
9. Georges Road.

10. Monmouth Junction Road east of Kingston Lane.
11. Jamesburg Road.

Secondary Collectors

A specific listing of secondary collectors is not provided herein, but they are shown on Plate 14. The design standard for this roadway is a minimum right-of-way of 60 feet, with two 10 to 12 foot wide travel lanes and two 5 to 6 foot wide paved shoulders. Since these roads are not projected to carry high volumes of traffic, controlled access is less important than with the major collectors and arterials. However, when major development plans are submitted for review, every effort should be made to minimize driveway access to these secondary arterials. Individual lot development should provide on-site turnarounds for traffic to avoid problems associated with traffic backing into the roadway.

Mass Transit

Local bus service is found on both Route 27 and Route 130. Commuter bus service is provided both on Route 27 and the Turnpike. As development occurs in South Brunswick in accordance with the Land Use and Housing Plan, bus service should be expanded to link areas of residential development and employment centers, which could be effectively accomplished by providing connecting bus service between Routes 27 and 130 along proposed Route 522 and Beekman Road Extension.

Passenger rail service is provided along the main line of the railroad running through the township. However, the nearest access points to the system are in Princeton Junction and New Brunswick. The 1974 Master Plan recommended reestablishment of a rail passenger station in the vicinity of Monmouth Junction, south of Route 522. This recommendation is continued in this Master Plan because of the relationship of the proposed station to the Town Center, realigned Route 522 and the Beekman Road Extension. Included on the Circulation Plan are recommended alignments of secondary collector roads which would by-pass Monmouth Junction and provide access to Beekman Road Extension and Route 522 in the vicinity of the new station. In the establishment of a specific location for the new station, it is recommended that it be located south of the existing Route 522 bridge, allowing the bridge to be incorporated in the pedestrian circulation around the facility. Parking areas will have to be provided on both sides of the tracks, which will require using most of the area lying north of Monmouth Junction village extending to the existing Route 522 bridge. The parking areas to be established east of the tracks would require improvements in road access. While these improvements are not specifically shown on the Circulation Plan, they are considered particularly important to the successful functioning of the station complex.

Bikeways

A system of bikeways was presented in the 1974 Master Plan, linking residential areas with activity centers in the township. The objective for the township should be to provide a bikeway system which will be interconnected throughout the township, not requiring cyclists to travel on roadways carrying in excess of 3,000 cars per day unless special bike lanes are provided in the paved shoulder areas.

Bikeways can be provided in three types. The most exclusive is the separate bikeway, totally separated from automobile traffic. These should be paved to a width of about 8 feet to handle two way traffic effectively. These can be located near major roads, but are more often found in open space and park areas. Since the Recreation Plan, presented later in this Master Plan, provides for a township-wide system of linked open space and recreation areas, this system would provide an opportunity for incorporating bikeways, which would link with other elements of the bikeway system.

The second type of bikeway is that located in the paved width of the roadway, identified by special painted markings in the road, but not physically separated from traffic. This type of bikeway should be considered where traffic volumes are not excessive, and should be coordinated with parking restrictions along the road to minimize hazards to the cyclist.

The third bikeway category is one where signs are simply erected identifying a local road as a bike route, with no special painting or design considerations for the cyclist. These should be low volume minor streets, with all collector and arterial streets on which bikeways would be located needing at least markings in the pavement to designate the bikeway.

Plate 15 shows a long-range plan for the provision of bikeways both in the street rights-of-way and throughout the township's open space system. Wherever possible, bikeway grades should not exceed 3 percent, except for short distances.

Off-Tract Improvements

Contributions for off-tract improvements may be required by the Planning Board in its review of development applications for areas covered under the development timing provisions of this Master Plan, and as identified on Plate 13.

For development timing related to improvements of Major or Secondary Collectors, the service areas for each collector should have a saturation plan drawn to determine the total amount of residential, commercial and industrial development permitted. The saturation plan would take into consideration the critical areas ordinance and its effect on the total development capacity of the site. The full development cost of the collectors should be shared by development in the service area based on residential units or residential unit equivalents in the non-residential areas. Total square footage allowed in the Commercial areas shown in the Land Use and Housing Plan on Plate 12 would be equated to residential housing units at the rate of 400 square feet of allowable floor space per housing unit. For Employment Center areas also shown on Plate 12, the conversion factor would be 800 square feet of allowable floor space per housing unit.

Development timing related to Secondary Arterials should use the same criteria as outlined above, but they should be adjusted to 75 percent of the total cost because of the benefit of the arterial road to traffic unrelated to development occurring along the roadway. For Major Arterials, the adjustment factor should be 50 percent.

SOUTH BRUNSWICK TOWNSHIP

MIDDLESEX COUNTY, NEW JERSEY

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SCALE IN FEET

SOURCE: TOWNSHIP TAX MAPS 1980

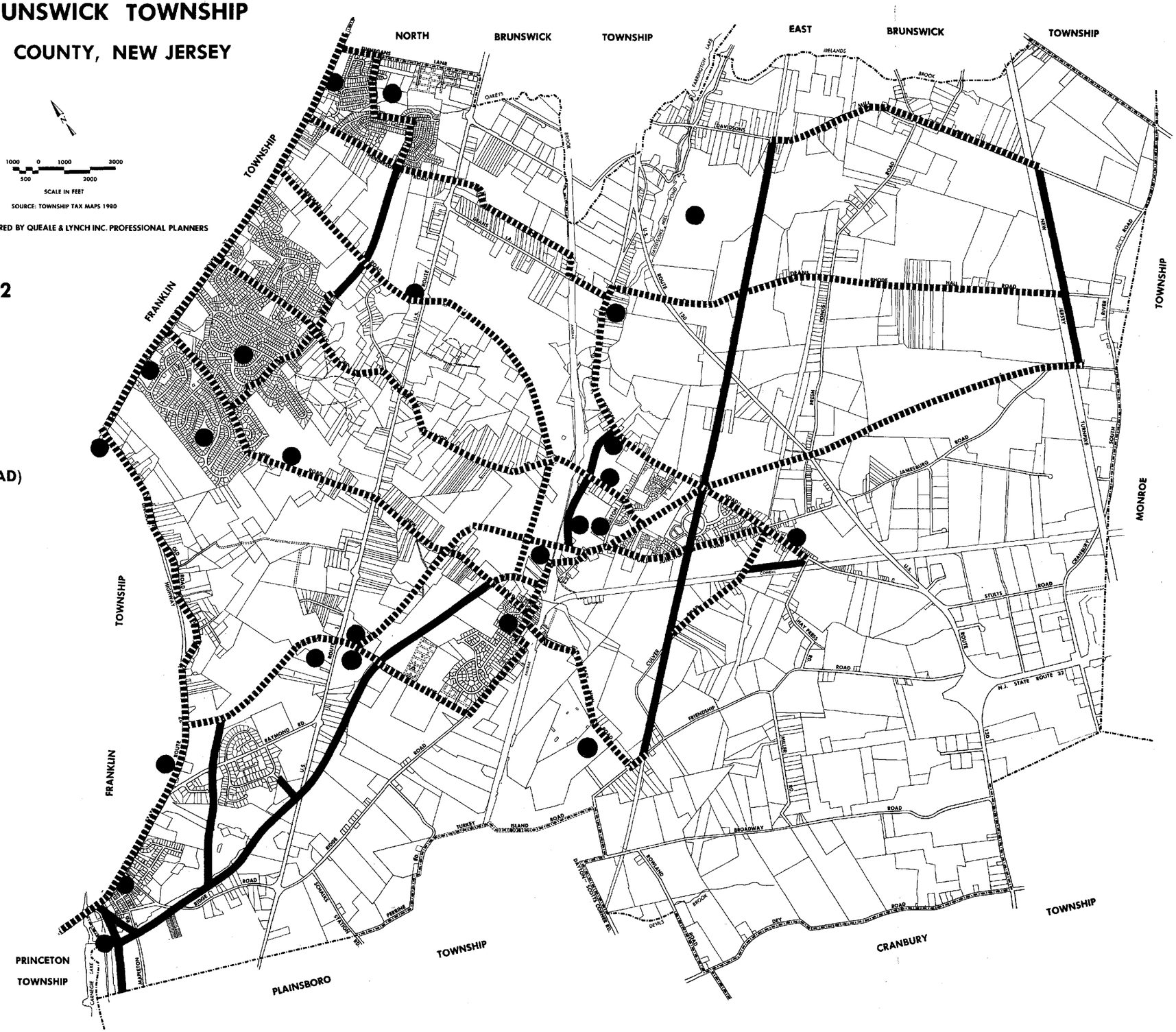
BASE MAP PREPARED BY QUEALE & LYNCH INC. PROFESSIONAL PLANNERS

Plate 15
BIKEWAYS PLAN - 1982

MAJOR DESTINATIONS

BIKEWAYS (OFF ROAD)

BIKE ROUTES (ALONG ROAD)



Tracts through which proposed new roads are shown should provide dedicated rights-of-way in accordance with the standards outlined in this Circulation Plan for the road. Cost sharing for off-tract improvements should relate only to the cost of improvements, not to the cost of rights-of-way.

COMMUNITY FACILITIES PLAN

The Community Facilities Plan objectives stated in the 1974 Master Plan are continued herein, as follows:

1. Facilities should be convenient to serve the residents of the township.

2. Facilities should provide a full range of services to persons of all socio-economic backgrounds.

3. Facilities should promote the health, safety and welfare for the municipality.

The Community Facilities Plan is shown in mapped form on Plate 16. It shows the functional location for new facilities, but not necessarily a specific location. With most facility sites, the general area to be served is the primary consideration, which generally allows for some flexibility in site selection within a given neighborhood.

The background report on Community Facilities presented earlier in this Master Plan provides a detailed review of existing and proposed facilities. The recommendations are summarized herein.

School enrollment projections become highly speculative beyond an 8 or 10 year forecast. However, coordinating population forecasts with school enrollment projections indicates that existing school facilities should be adequate through the 1980's unless development occurs at the highest forecast rate. If that is the case, elementary and middle school capacity will be exceeded before high school, but it should be noted that continued development at the rate experienced during the 1970's over the next two decades should be able to be handled within the existing school facilities. If rapid development occurs and new school facilities are needed, the existing middle school facility in the Crossroads School could be converted to an elementary school, and a new middle school built in the general vicinity of Town Center or the municipal complex. Depending on the educational program desired and the pressures on high school and elementary enrollments foreseen at the time such a decision would have to be made, the new middle school could be a three or four grade facility, handling either 6-8, 7-9 or 6-9. In this way, through the possible addition of only one school, future enrollments could be accommodated even under the highest anticipated development levels.

In the municipal complex, library expansion is needed, as outlined in the background report. The maintenance facilities should be augmented by more warehouse space and a regular replacement program for major equipment. The municipal building is well located near the geographic center of the township. while no expansion is seen for the near future, if it is necessary, it should be provided on-site with no consideration given to an alternate location.

Police headquarters in the Public Safety Building should continue as an integral part of the municipal complex. Police needs increase in direct proportion to population, employment and traffic growth, requiring corresponding increases in space in the Public Safety Building to accommodate increases in the force. The background report provides some guidelines on the future size of the police force based on the number of sworn officers.

Some expansion in fire coverage is called for, as indicated in the background report. New stations or sub-stations are called for near Route 1 in the vicinity of Raymond Road and Stouts Lane, near Route 1 in the vicinity of Deans Lane and Henderson Road, and the recently added facility in Dayton. With the addition of these three stations, adequate coverage will be provided to all parts of the township, with the possible exception of the industrial area near the Turnpike, which may require an additional station in that portion of the township if adequate volunteer help can be found in close enough proximity to staff the station. If not, the new Dayton station will service this area.

Rescue squad coverage in the township is provided by three stations, as noted in the Community Facilities Report. Their coverage should be augmented by a substation of the Monmouth Junction Rescue Squad in the Dayton area, possibly located near the new fire station. One additional station may be necessary near Route 1 in the vicinity of Henderson Road if response times to the northerly part of the township are hindered by distance and traffic considerations. This total of four or five stations should adequately serve the needs of the anticipated development of the township.

While historic resources are identified in the Environmental Resources Inventory, and protection should be given to the historic sites and areas of the township, land use regulations should be considered which would provide for the establishment of two historic districts, one in Monmouth Junction and the other in Kingston. Within these districts, the specific historic significance of the areas should be identified so standards could be developed which would provide guidance to the property owners and Planning Board in approving building renovations. In exchange for these tightened controls on building appearance from the streets, greater flexibility could be permitted in the range of uses allowed.

UTILITIES PLAN

The Utilities Plan is shown on Plate 17, which should be read in conjunction with the more detailed utility plans developed by Van Cleef Engineering Associates in 1981. The background report on utilities presented earlier in this Master Plan provides an analysis of the existing and proposed utility systems for water, sanitary sewers, storm drainage and landfill. The conclusions and recommendations set forth in that section of the Master Plan are incorporated herein as a plan element and summarized in the following paragraphs.

The primary consideration in the adequate provision of potable water is the limitation placed on new development by continuing reliance on groundwater supplies. No significant quantity of additional development can be accommodated based on groundwater diversion rights, necessitating future reliance

SOUTH BRUNSWICK TOWNSHIP

MIDDLESEX COUNTY, NEW JERSEY

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SOURCE: TOWNSHIP TAX MAPS 1980

BASE MAP PREPARED BY QUEALE & LYNCH INC. PROFESSIONAL PLANNERS

Plate 16
COMMUNITY FACILITIES PLAN - 1982

EXISTING	PROPOSED	
S	S	SCHOOL
L		LIBRARY
A		MUN. BLDG.
P		POLICE
M		MAINTENANCE
F	F	FIRE
R	R	RESCUE
H		HISTORIC DISTRICTS
◯		EXPANSION

SOUTH BRUNSWICK TOWNSHIP

MIDDLESEX COUNTY, NEW JERSEY

1000 0 1000 2000
500 2000

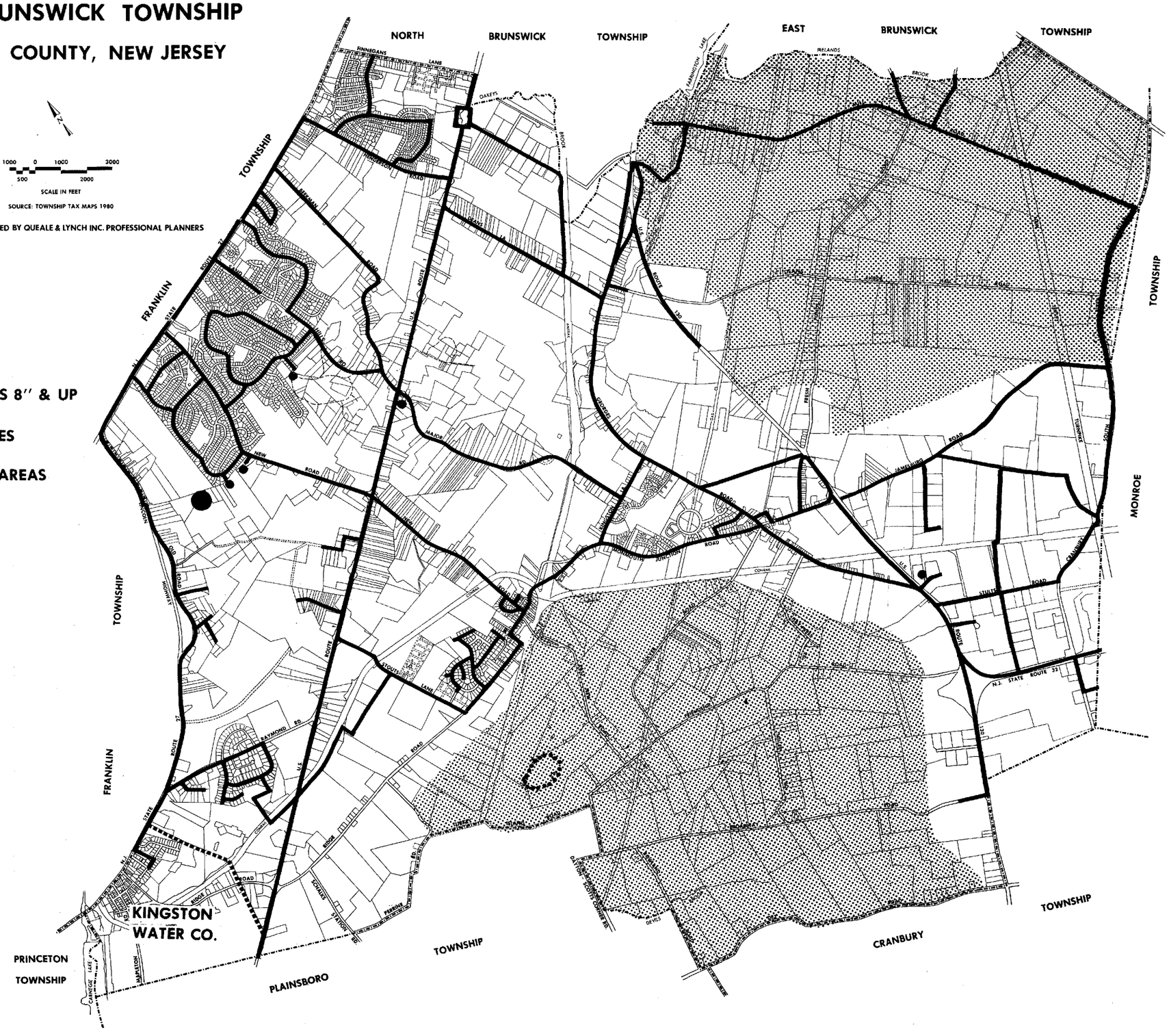
SCALE IN FEET

SOURCE: TOWNSHIP TAX MAPS 1980

BASE MAP PREPARED BY QUEALE & LYNCH INC. PROFESSIONAL PLANNERS

Plate 17
UTILITIES PLAN - 1982

- EXISTING WATER FACILITIES 8" & UP
- PROPOSED WATER FACILITIES
- PROPOSED NON-SEWERED AREAS
- LANDFILL
- EXISTING TANK
- PROPOSED TANK



on surface water resources if the development contemplated in the Land Use and Housing Plan is to be realized.

Several loops and other facilities are noted in the water plan. The loops should be completed, as listed in the background report in this Master Plan. Prior to committing to the construction of an additional storage tank in the Sand Hills area, the feasibility of using a storage facility in the Old Road area in lieu of a second tank in the Sand Hills area should be explored. If this is feasible, it may serve to correct the low pressure problem in the Old Road area without the need to construct two storage or tank facilities. It is important to provide adequate water to the area lying between Route 1 and Route 27 between Raymond and New Roads because of the extensive new development proposed for that area.

The comments and recommendations set forth in the background report on pages 34 and 35 of this Master Plan provide the basis for the installation of sanitary sewers to serve the township, and are incorporated by reference in this Utilities Plan.

Storm drainage improvements discussed in the background report and presented in both the "Drainage and Flood Control Study" and the "Environmental Resources Inventory" are hereby incorporated in this Master Plan. The extensive use of detention basins as a storm drainage management device should be continued, with particular attention given to long-term maintenance, dual use of detention or retention facilities, and sufficiently shallow side slopes to provide for proper maintenance and to minimize or eliminate the need for unsightly fencing. Imaginative landscaping and site design is encouraged to minimize negative effects on nearby properties. If funds become available from the state, the township will be required to provide a storm water management plan as an integral part of the Master Plan. The township should continue to monitor the availability of these funds, pursuing the preparation of such a plan at the earliest possible date. As noted in the Environmental Resources Inventory on the map on page 78 of that report, there are extensive areas in South Brunswick with natural drainage problems, making proper consideration of the impact of new development on storm water management an important long-range planning element, as well as a vital part of the review of development applications.

The township has an established landfill which has some remaining useful life before it is terminated and eventually becomes a part of the township's recreation and open space system. The township should begin to explore alternate methods of solid waste disposal more oriented to resource recovery.

CONSERVATION AND RECREATION PLAN

In 1975, the township prepared a Parks Master Plan which has served as a guide for the establishment of new parks and the improvement of certain existing parks. The goals and objectives of the Parks Master Plan are continued in this Master Plan, as follows:

1. Park facilities should be convenient to serve the residents of the township. If possible, they should be within walking distance of the majority of people.

2. Facilities for tots and younger children must be neighborhod oriented.

3. Facilities should provide a full range of activities to persons of all socio-economic backgrounds and all ages and interests.

4. Parks should be designed with safety in mind.

5. Linkages should be established between parks.

6. School facilities should be nearby to parks wherever possible, but should not encroach on or cut down on park acreage.

7. The natural environment should be maintained and enhanced.

8. Future acquisition should preserve areas of natural resources and functions.

The background report on recreation presented earlier in this Master Plan provides an analysis of existing and proposed facilities as contemplated by the township. All proposals set forth to date by the township relate well to the Land Use and Housing Plan and should be effectuated.

The network of conservation and recreation areas is shown on Plate 18, which shows existing and proposed locations for active and passive facilities, including school sites and open space areas. State, county and township facilities are shown, but the open space, park and recreation system should be supplemented by the reservation of areas in specific residential and other developing areas to protect environmentally sensitive areas, woodlands, views, and to provide additional areas for active recreation. The interconnecting network of open spaces can incorporate a system of trails and bikeways, as noted in the Circulation Plan.

In the Town Center area, the higher density housing will need the enhancing effect of conservation, open space and recreation areas to provide an attractive residential setting. In the medium density residential areas shown on the Land Use and Housing Plan, it is similarly important to protect the natural features of the land as an enhancement for new development.

The township's land use ordinance should continue to provide for density and bulk coverage adjustments based on the natural features of the land. In this way, areas which have severe constraints for development, such as flood plains, will not be subjected to undue development pressures.

The South Brunswick Environmental Resource Inventory, prepared by the township Planning Department and published in 1982, is hereby incorporated by reference as a part of the Conservation and Recreation Plan, as is the 1975 Parks Master Plan referred to earlier in this section.

ENERGY

The energy plan element is a relatively new requirement of the Municipal Land

SOUTH BRUNSWICK TOWNSHIP

MIDDLESEX COUNTY, NEW JERSEY

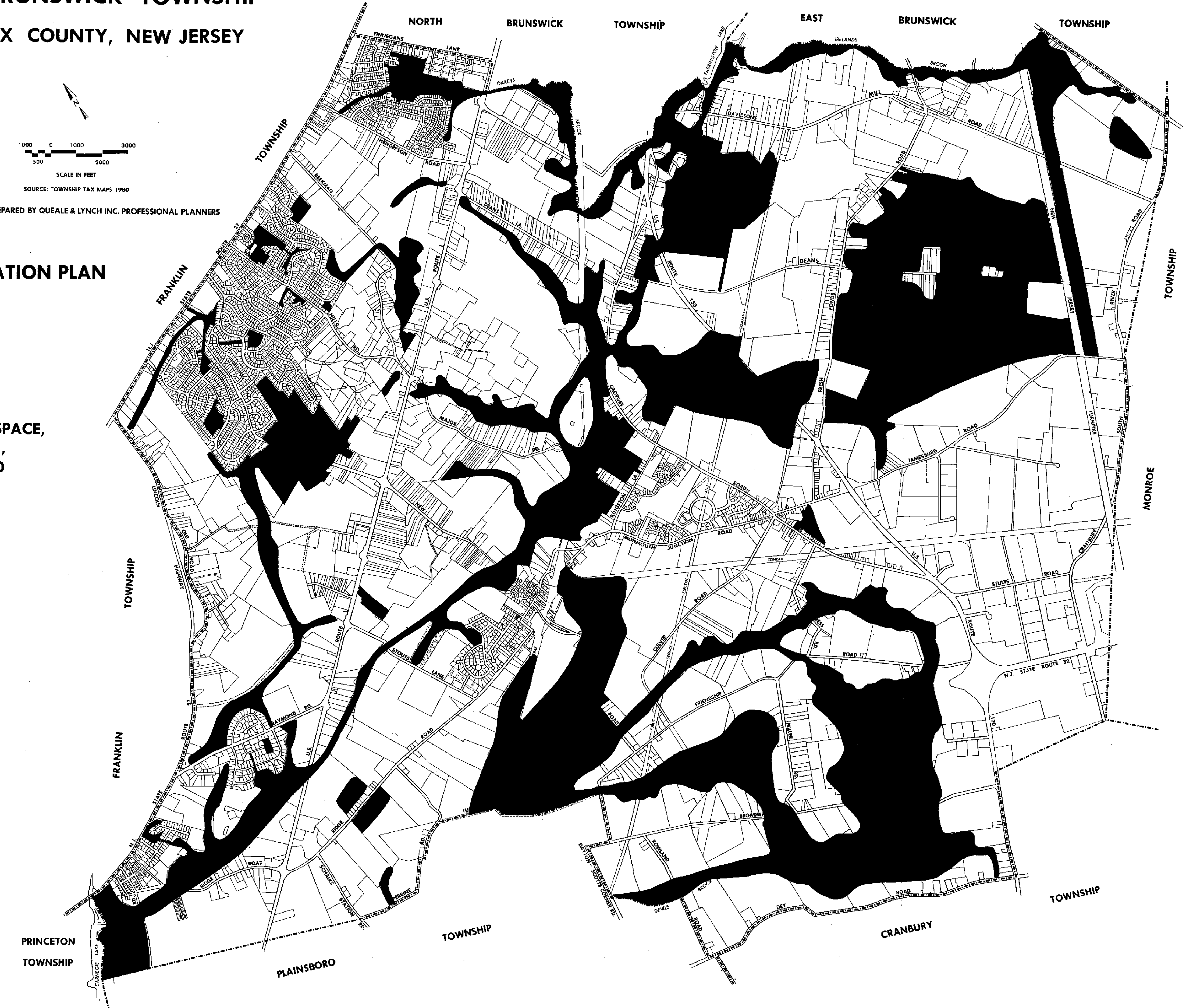
SCALE IN FEET

SOURCE: TOWNSHIP TAX MAPS 1980

BASE MAP PREPARED BY QUEALE & LYNCH INC. PROFESSIONAL PLANNERS

Plate 18
CONSERVATION AND RECREATION PLAN
1982

ACTIVE RECREATION, OPEN SPACE, PARKS, PASSIVE RECREATION, SCHOOL SITES, UNDEVELOPED PUBLIC LANDS



Use Law. It calls for analyzing the impact of Master Plan recommendations on the present and future use of energy in the municipality, identifying specific measures contained in the other plan elements designed to reduce energy consumption and proposing other measures the municipality may take to reduce energy consumption and provide for the maximum utilization of renewable energy sources.

Specific reference is made to the findings and conclusions set forth in the South Brunswick Township Energy Study, prepared in October, 1980, which is adopted herein as a part of this Master Plan. It sets forth certain analyses and guidelines for energy conservation, and discusses them as they relate to long-range planning and the specific regulatory provisions to be applied to the review of site plans and subdivisions.

The energy conserving features of the various plan elements are outlined in the following paragraphs:

1. The Land Use and Housing Plan encourages the construction of at least half the housing units in more energy efficient attached or multi-family housing. This housing variety is encouraged in the medium and high density residential areas, which provide for clustering and are located in two distinct development corridors, one related to Beekman Road and its future extension, and the other related to the future development of Route 522. Certain development centers are provided throughout the development corridors which can serve as stops for bus service, including the two proposed retail commercial areas along Route 1, the commercial center/rail passenger station in the Town Center area, and the neighborhood commercial center near the intersection of proposed Route 522 with Georges Road. Commercial centers have been shown in closer proximity to areas proposed for development, reducing travel distance for shopping. The amount of land shown for employment centers has been reduced from earlier plans, reducing the potential sprawl effect and providing for more compact development near the residential development corridor, potentially cutting down on the travel distance required to get to work. Mixed use centers are called for in the older villages, and are an integral part of the higher density residential areas in the planned residential developments located near the municipal complex.

2. The Circulation Plan calls for not only the mass transit improvements for bus and rail service, but for the establishment of a roadway network which will more efficiently handle the development corridors called for in the Land Use and Housing Plan. It also calls for a bikeway system which provides a considerably more energy efficient method of traveling throughout the development corridor. The Plan provides for narrower streets for the network of major roads, reducing initial and long-term costs without sacrificing the primary road function, which is to provide for safe and efficient travel. In addition, the township should continue its policy of permitting narrower streets in developments of lower density. The development timing features of both the Land Use and Housing Plan and the

Circulation Plan help to discourage scattered and sprawl development, while assuring that the proper road service is available to areas undergoing development.

3. The Community Facilities Plan provides for continued centralized sommunity facilities in the municipal complex, which is located in the development corridor highly accessible to the growing population base of the township. The only possible new school facility cited in the Plan calls for it to be located in the vicinity of the municipal complex. Police service should continue to be provided at this location because of its convenient access to all parts of the community. Additional fire stations and rescue squads are proposed to provide better access for emergencies and protection and conservation of private property.

4. The Utilities Plan calls for servicing only those areas proposed for development. Clustering and medium to high density residential development will improve the efficiency of utility systems. Conversion to a resource recovery method of handling solid waste has been incorporated in the plan as an alternative to continued use of landfill beyond the useful life of the current facility. Protection of solar access and the use of wind and other renewable energy resources is encouraged through proper street and lot orientation.

5. The Conservation and Recreation Plan provides for an interconnecting open space system, providing conveniently located active and passive recreation and conservation areas accessible by foot and served by a bikeway network as well. It relates well not only to the development corridor, but incorporates a relationship to the school system and other municipal facilities.

REGIONAL CONSIDERATIONS

The New Jersey Municipal Land Use Law mandates an examination of plans in effect in the region so each municipality can see itself in the context of larger planning problems. In this update of the Master Plan, regional plans are considered not only as a foundation upon which to build a sound plan, but to draw comparisons between proposals in South Brunswick and the continuing planning efforts of its neighbors and the region.

State Development Guide Plan

In May, 1980, the New Jersey Division of State and Regional Planning released a revised draft of the State Development Guide Plan. This draft provides a clear framework for coordinating local plans with those of the state. It should be kept in mind that the primary purpose for developing a state plan is to guide the state in its own capital improvements and acquisition programs. The guide plan is set up to achieve a balance between development and conservation and is based on four premises:

1. Older urban areas should be conserved, strengthened and revitalized.

2. Land should be developed efficiently, so that public investments are made economically and energy use is minimized.

3. Critical natural resources should be protected, so that future development can be adequately served at least cost.

4. Agriculture should be retained as an active economic land use.

Four categories of generalized land use are set forth in the state plan: Growth, Limited Growth, Agriculture and Conservation. The Growth Areas were set up to be the primary recipients of growth, both because of proximity to jobs and because encouraging growth near areas of existing development allows land with certain environmental characteristics to remain undeveloped, such as agricultural lands, steep slopes, flood plains and coastal wetlands.

South Brunswick falls in two categories, a Growth Area and a Limited Growth Area. The Limited Growth Areas fall in the two parts of the township designated as Rural on the Land Use and Housing Plan, and the remaining Growth Areas correspond to the development areas shown on the Plan.

Another report prepared by The Division of State and Regional Planning and released in May, 1978, entitled "A Revised Statewide Housing Allocation Report For New Jersey," serves as a guide to local planning boards in their efforts to respond to the basic principle of the Mount Laurel decision issued by the New Jersey Supreme Court in 1976 relating to the provision of housing for low and moderate income families. The housing allocation plan provides an identification of the need for housing within each municipality in the state as of 1970 based on substandard and overcrowded units, and develops a projection of housing needs for the period 1970 through 1990 which the Division felt should be met in order to adequately respond to the critical housing needs of low and moderate income families. Factors considered in the projected need relate to the amount of vacant land in each municipality, employment levels, ratables and personal income. The purpose of looking at these factors was to try to locate low and moderate income housing in those municipalities were it is most needed.

The identified 1970 housing need in South Brunswick was 348 units. This figure relates to problems of substandard dwellings, overcrowded conditions and dwellings needed to achieve certain optimum vacancy rates. An additional 2,865 units were identified as being needed in South Brunswick to respond to the 1970 to 1990 growth period, resulting in a total housing allocation by the state of 3,213 units for South Brunswick out of a total of 47,380 units for the county. This represents almost 7 percent of the county-wide identified housing need.

Since the number of units identified for low and moderate income families relates to persons earning incomes no higher than those eligible for HUD Section 8 Rental Assistance (80 percent of the median income), these figures have often been criticized state-wide as showing a need for many more units than could realistically be provided. This was considered in the Population and Housing Analysis prepared as a part of this Master Plan, which concluded that under the high growth assumption, the township need would approximate that set forth by the state. The Land Use and Housing Plan provides sufficient capacity to meet the allocation identified in the state report.

Tri-State Regional Planning Commission

The Tri-State Regional Planning Commission released a report in March, 1978 which incorporated its plans through the year 2000. It is entitled "Regional Development Guide 1977-2000". This guide plan offers broad density ranges for new residential development as well as general locations for non-residential development and open space. While the Tri-State agency is no longer in operation, having been eliminated in 1982, its plans are presented herein as a means of further evaluating the regional context for planning in South Brunswick.

The areas in the Development Guide which can be identified as lying in South Brunswick include two Mixed Local Centers. These are areas in which commercial and industrial development can take place, but at a somewhat lower intensity than would be found in specifically identified industrial districts. The AdamsDeans Mixed Local Center lies in the northwesterly part of South Brunswick extending northerly in an irregular pattern from Monmouth Junction to North Brunswick. The other area lies in the Route 522 corridor and is identified as the Dayton-Jamesburg West Mixed Local Center.

Two general locations for higher density new development are shown. These fall within the density range of 7 to 15 dwelling units per acre. One is located in the vicinity of Monmouth Junction and the other in the vicinity of Kingston.

The very low density, open space, agricultural and conservation area shown for the township includes the northeast and south-central sections, similar in location to the State Development Guide Plan. The remaining parts of the township, concentrated primarily north and west of Route 522, show future development at a density of 2 to 7 units per acre. When development takes place in the area shown in the Tri-State Plan, the Route 522 corridor will represent the outer reaches of continuous development from the northeastern New Jersey urban core. Open space and low density residential development characterize the outer portions of Middlesex, Monmouth, Somerset, Morris and Passaic Counties.

Throughout the Tri-State Plan, relationships are drawn between jobs and housing. With this as a guide, and with the many areas of prime industrial lands found in the township, the provision of adequate housing remains an important part of the total development framework for the township. The Land Use and Housing Plan is consistent with the general regional framework set forth in the Tri-State guide plan.

Middlesex County Planning Board

Information provided by the Middlesex County Planning Board does not include any specific overall county land use plan. However, the county does provide guidelines on future population levels for each municipality through the year 2000 as well as projections of employment and resulting residential and non-residential land use in total acres through the year 2000. The projected year 2000 levels of 43,000 population and 16,935 employment are consistent with the Land Use and Housing Plan element of this Master Plan.

In connection with the projections of population, the county adopted in May, 1977 a Transportation Plan and Program for the county. The plan calls for improving east/west access through the South Region, which includes Cranbury, Jamesburg, Monroe, Plainsboro and South Brunswick. Plans for the South Region include the following:

1. The construction of State Route 92.

2. Route 522 should be upgraded and re-aligned as a four-lane road connecting Route 130 and Route 27. Along with Route 92, this is outlined as a short-term priority road in the region.

3. As part of the long-range plans identified by the county, the upgrading of Princeton-Plainsboro Road/Dey Road/Prospect Plains-Cranbury Road/Hoffman Station Road is identified to provide a needed east/west corridor in the Plainsboro-CranburyMonroe areas. These improvements affect the border area with Cranbury and Monroe Townships.

4. Improvements to Route 27 are called for because of significant increases in traffic in the recent past. Increased traffic carrying capacity and the use of this route as a transit corridor between New Brunswick and Princeton are considered important in the long-range planning of both Middlesex and Somerset Counties.

5. Mention is made in the plan of the Alfred E. Driscoll Expressway, which has been a proposal on the State Master Plan for highways for several years. However, it appears as though this project stands little likelihood of being funded given the need for road improvements and new construction in other areas of the state with greater congestion problems than those which would be relieved with the Driscoll Expressway.

6. The plan also calls for one new rail station below New Brunswick, located just north of Monmouth Junction and oriented to proposed Route 522.

With the exception of the Driscoll Expressway, all of the above county plans are consistent with the Circulation Plan of this Master Plan.

Adjoining Municipalities

Seven municipalities border the township of South Brunswick, including five which are located in Middlesex County and one each in Somerset and Mercer Counties.

Princeton Township: This municipality has the smallest common boundary with South Brunswick and it lies along Carnegie Lake. Planning actions in Princeton Township will have no effect on the planning in South Brunswick because of the buffering and geographic separation represented by Carnegie Lake.

Franklin Township: Franklin Township shares the Route 27 corridor with South Brunswick. The Franklin Township Master Plan was updated in March of 1980, and is currently under revision. The 1980 Plan set forth a revised guide for development in the Route 27 corridor. In the section of the corridor near Raymond Road, it shows the intersection of proposed Route 92 with Route 27 and suggests that as an appropriate area for a proposed low density office park which would not be developed until Route 92 is open. The plan mentions that this would not be consistent with the planning in South Brunswick, but it does not see it as a land use conflict since it would not be open until the completion of Route 92. This continuing proposal for non-residential use should be discouraged by the township because of its potential impact on the Route 27 corridor, which has been treated in the South Brunswick Master Plan as a relatively low density development area, particularly south of Route 518. The overall capacity for new development has been reduced in the Franklin Township Plan, with 11,000 new dwellings provided for and approximately 10 percent of the land area available for "economic development". The Land Use Plan calls for development in the immediate area of Kingston at 3.5 units per acre, and between Kingston and the proposed low density office park at 2 units per acre. North of the office park and extending to the intersection of Routes 518 and 27, the plan calls for rural land uses at a density of 0.5 units per acre. A small commercial area is shown on the plan at the shopping center location at Routes 518 and 27. The plan calls for continued rural development north of the Route 518 intersection to a point lying between New Road and Sand Hills Road. From that point north to the North Brunswick line, residential uses would develop at a density of 2 units per acre. These would include some of the Route 27 frontage as well as the areas behind a remaining strip of commercial development. Some relatively intensive residential development will be located in the area lying west of Route 27, which will impact the local road system in South Brunswick, particularly those providing a connection to Route 1, and further connecting to the New Jersey Turnpike. The Franklin Township Traffic Plan proposes a connection between the Route 27/Route 518 intersection and Middlebush Road. This would be carried out in an attempt to relieve some of the traffic congestion in the Route 27 corridor. In addition, a parallel access road would be built between Bunker Hill Road and the extension of Jacques Lane into North Brunswick, which is also designed to relieve some of the traffic congestion on Route 27. With the exception of the office park development proposed in the lower end of the Route 27 corridor near Route 92, the plans in the townships are generally compatible.

North Brunswick: The North Brunswick line runs along Finnegans Lane and Oakey's Brook to Farrington Lake. On Finnegans Lane between Route 27 and Route 1, the plan shows an area of commercial development near Route 27, two PUD areas and high density residential areas at 7 and 12 units per acre respectively lying between Route 27 and Route 1, and at Route 1 it shows an industrial area. Statements in the North Brunswick plan give recognition to the fact that planning in North Brunswick along Finnegans Lane is inconsistent with the residential development pattern in South Brunswick. This brought about the modification of North Brunswick's plans to provide for residential development between Route 1 and Route 27 to enable residential uses to be located and designed in a manner compatible with development in South Brunswick. If the township is notified of any development proposals along

this corridor, it would be wise to pay particular attention to the methods of handling traffic and the arrangements of buildings to minimize impact on single family homes in South Brunswick. While most of the remaining common boundary is shown for industrial development in North Brunswick between Farrington Lake and Route 1, it appears as though the highway plans offer more significant considerations for planning in South Brunswick. North Brunswick proposes a connection which would link Davidsons Mill Road and Route 130 with Finnegans Lane at Route 1. While the Davidsons Mill Road intersection with Route 130 lies in North Brunswick, and shows a 60 foot right-of-way on the easterly side of Route 130, the proposal is for an 80 foot right-of-way running from Route 130 to Route 27. A re-alignment is proposed at the intersection of Finnegans Lane and Route 27 which would swing Finnegans Lane to the north in the immediate vicinity of Route 27. Widening would take place on the North Brunswick side of Finnegans Lane, and the proposal would require the construction of an over-pass over the Amtrak line. No other roadway connection is proposed with South Brunswick in the North Brunswick Plan. Consideration has been given in both the Land Use and Housing Plan and the Circulation Plan of South Brunswick to reflect the plan proposals in North Brunswick, although the Circulation Plan shows Davidson's Mill Road as a Secondary Collector, not desiring to encourage significant amounts of regional traffic.

East Brunswick: The East Brunswick Plan identifies the common border with South Brunswick as an area with environmental constraints for development. Only rural development densities are proposed for this area, which is an aquifer recharge area. East Brunswick has set up a special element of the Master Plan dealing with septic system management to provide protection to the Farrington Aquifer. In summary, East Brunswick has no plans for major development and no new roadway proposals in the areas immediately adjoining South Brunswick. Many of the characteristics which have led East Brunswick to take steps to preserve the environmental integrity of this area have served as the basis for the State Development Guide Plan and the Tri-State Regional Planning Commission proposals for preservation of open space or low density development in this area. While the South Brunswick Master Plan calls for low density housing or office use in the area, it is with the condition that effluent be treated on-site in a manner consistent with the desire to provide for effective aquifer recharge.

Monroe: Contact with the planning consultant for Monroe Township has resulted in a preliminary indication that continuing support for development which is compatible with the industrial nature of new development in South Brunswick will be encouraged in Monroe.

Cranbury: Plans in Cranbury for the area lying east of Route 130 call for office and light industrial development, while along the Dey Road area between the Plainsboro line and Route 130, the Cranbury Master Plan calls for residential at one dwelling unit per acre. The plan also specifically shows the straightening of the alignment of Dey Road and identifying it as a future 120 foot right-of-way along the southerly boundary of South Brunswick. These plans are consistent with those of South Brunswick.

Plainsboro: The Plainsboro Plan calls for a variety of uses along the common boundary with South Brunswick, and also notes some road improvements. The road improvements call for re-alignment of jogs in the Dayton-Scotts Corner Road and at the intersection of Rowland Road and Dey Road. Low density residential development is called for between the Cranbury line and the Public Service, Electric and Gas Company utility line which crosses through South Brunswick and into Plainsboro at the intersection of Devils Brook and Dayton-Scotts Corner Road. Another low density residential area is shown between the Amtrak line and Schalks Station Road. Industrial uses are shown between the Amtrak line and the Public Service, Electric and Gas Company utility line to the east. The category of "residential urban" is shown in the area between Schalks Station Road and Route 1, while between Route 1 and the Princeton Township border the area is shown for office and research. The Plainsboro Plan shows Route 92 as an important part of its total Master Plan. While no major areas of incompatibility exist between the Plainsboro and South Brunswick, some of the road improvements noted in the Plainsboro plan for roads in South Brunswick are not included in the Circulation Plan because the roads are located in Rural areas and are not subject to high traffic volumes.