

Because of the presence of a relatively impervious clay layer overlying both the Cape May Formation and the Cohansey Sand, very little (if any) vertical leakage replenishes these underground water resources. Thus, although the formations may contain vast quantities of water, these quantities are by no means unlimited. The Holly Beach aquifer, on the other hand, is recharged regularly from rainfall, as well as from cesspools, septic tanks, and irrigation.

A report prepared for the Cape May County Water Policy Advisory Committee and Board of Chosen Freeholders by Geraghty and Miller, entitled Ground Water Resources in Cape May County, 1970, analyzed the long term adequacy of groundwater resources in Cape May County and was a valuable source of data in the preparation of this section of the Physical Characteristics analysis. The conclusions of that report would seem to indicate that the quantity of water available to the County from these three aquifers (the Holly Beach, Cape May Formation and Cohansey Sand) and others not found in Lower Township is sufficient. However, contamination of the water table from salt water infiltration (through flooding) or from other surficial pollutants is possible unless adequate precautions are taken. Furthermore, the intrusion of salt water into the artesian aquifers from overpumping is a problem which may well have to be dealt with in the future, but the point at which contamination from such intrusion will occur is not easy to predict and requires continuous sampling of wells to detect increases in chloride content. As the report suggests, the County's growth policies will determine the longevity of the artesian water supply.

Plate 24 presents some indication of the quantity of water yielded from wells drilled in the three geologic formations described above.

CONCLUSION

The analysis of the physical characteristics of Lower Township provides the Planning Board with one of the set of tools it will need to use in allocating future land uses. The Physical Characteristics report, it should be remembered, is only one of the several background investigations which will be required to generate sound land use decisions. Others include, in addition to existing land use and regional considerations, studies of community facilities and traffic circulation. However, an understanding of the environmental limitations on development will help to ensure that public health and safety are not jeopardized by policies contained in the Land Use Development Plan.

PLATE 24

SUMMARY OF WELL YIELDS*
LOWER TOWNSHIP

<u>Aquifer</u>	No. of wells	Yield in Gallons Per Minute			Depth in Feet		
		Maximum	Minimum	Average	Maximum	Minimum	Average
Cohansey Sand (Tch)	10	500	35	248	330	262	298
Cape May Formation (Qcm)	18	75	12	33	194	86	129
Holly Beach	10	300	30	115	50	39	47
Holly Beach (Observation by U.S.G.S.)	24	20	1	9	104	58	92
							76

* Wells surveyed include domestic, industrial, irrigation, observation, and public supply wells.

SOURCE: Records of Wells, Well Logs, and Summary of Stratigraphy of Cape May County, N.J., Department of Conservation and Economic Development, Division of Water Policy and Supply, 1962.

TRAFFIC and CIRCULATION

TRAFFIC AND CIRCULATION

INTRODUCTION

The focus of this section of the Background Studies is, first, to provide the necessary base information on the existing road network in Lower Township, particularly with respect to deficiencies in the system, and, second, to identify current proposals for improvements to County roads. Finally, the Traffic and Circulation analysis indicates the public transportation facilities available to residents of and visitors to Lower Township. The analysis is organized into a series of investigative discussions evaluating key aspects of the overall transportation network. On the basis of the problems and potentials identified through this and other sections of the Background Studies, the Land Use Development Plan for Lower Township can be formulated in a manner which coordinates land use patterns with access requirements.

TRANSPORTATION AND LAND DEVELOPMENT

The development or redevelopment of land for productive use, such as commercial, residential or industrial activity, depends upon its accessibility. Historically, proximity was the only way to achieve this necessary requirement for urbanization. Homes and business establishments were located so as to involve the least amount of travel time between trip destinations. Since travel time is a function both of distances and of the prevailing level of technology in any particular period of history, a community's development pattern is strongly influenced by whatever modes of transportation are available at the time the area is settled. One hundred years ago, widespread use of horse and wagon transportation required that settlements be compact and closely spaced. Some towns had their geneses in the locations of railroad stations. Today, the strip development exhibited along many State and County roads is attributable to location preferences associated with the automobile era.

It is important to recognize the interrelationship between land use and vehicular trip generation and to use that relationship as one of several parameters in the allocation of future land uses as well as in the identification of the need for improvement in the circulation network serving existing land uses. All vehicular trips are made for specific purposes related to land use. While one chief determinant of residential location is easy access to employment, an entrepreneur generally prefers a location adjacent to high volumes of traffic, possibly at the intersection of major roads with access to other commercial or industrial locations within the region. As a result, most new residential and commercial construction will take place first along the existing road network. As a community's population continues to grow and the attendant level of traffic also increases, conflicts resulting from an overburdening of the existing transportation network are encountered, and a general reduction in the area's accessibility as well as an increase in the unpleasant aspects of travel are experienced. Increased travel time, excessive energy consumption, accidents, driver discomfort,

noise and blight all contribute to the inefficiency of the transportation network and its inability to serve existing and future developments.

Although the effects of the existing circulation system on land use policies, and vice-versa, must be addressed in the formulation of Lower Township's Land Use Development Plan, it is unlikely that there will be any one totally satisfying solution to all of the traffic problems. In a balanced community, businesses, residences, recreational facilities and other uses must exist in reasonably close proximity to one another, engendering a certain amount of inherent conflict. It is the task of planners to minimize this conflict by segregating certain land uses from each other and planning for a circulation system which attempts to serve the community's access needs for both the immediate and distant future.

FUNCTIONAL CLASSIFICATION OF ROADS

In any community, each road is called upon to perform a different type of function in the context of the whole transportation network. For planning purposes, the general functional classifications are three: arterial, collector and local. A road's classification is based on a number of considerations, including its jurisdiction, the volume and type of traffic it is required to accommodate, and its use and location within the transportation system.

Local streets primarily offer access to individual properties, both for vehicles and pedestrians. Collector streets, in theory, gather the traffic from several local streets before the design capacities of the local streets are exceeded. This traffic is then funneled either to major traffic generators such as shopping centers, offices, industrial plants or other commercial areas or to arterial roads. Depending on the volume, source and composition of the traffic, collector roads may be broken down into primary or secondary collectors. Primary collectors are those roads which run between arterial roads or link major traffic generators with the arterial network. Primary collectors tend to include a higher percentage of truck traffic than do secondary collectors. Secondary collectors, on the other hand, tend to carry largely residential traffic at lower volumes. Because of their lower volumes and non-commercial characteristics, secondary collectors may be designed with lesser right-of-way widths and road surface bearing capacities. Finally, arterial roads have, as their prime function, the transport of regional traffic -- traffic characterized by high volumes, extended destinations or substantial numbers of commercial vehicles. Arterial roads may be classified as either primary or secondary, as well, based on volumes and sources of traffic. Ideally, arterial and collector roads should have limited or strictly regulated access points to ensure an interrupted flow of traffic. In defining the existing functional classification of each of Lower Township's roads, it is first necessary to review the factors noted above which contribute to such determinations.

REGIONAL LOCATION

Plate 25 locates Lower Township within its southern New Jersey region. As is evident from the plate, Lower Township straddles the Garden State Parkway, the major north/south artery serving Cape May County. In addition, Route 9, also travelling in a north/south direction, serves as a major transportation corridor. However, unlike the Garden State Parkway, it is not a multi-lane, limited access highway. The continued demand of the region upon Route 9, an older, relatively narrow route, which must also accommodate the direct access needs of the residential, commercial and institutional land uses located along it, is one example of conflict generated by the existing land use pattern. Route 9 becomes particularly inefficient and congested in the vicinity of Schellenger's Landing. The design of this portion of Route 9 is inadequate considering its location within the region and the concomitant demands placed upon it, as will become increasingly evident in the analysis which follows.

JURISDICTION OF ROADS

Plate 26 presents the political jurisdictions responsible for the various links in Lower Township's road network. Generally speaking, the volume of traffic using a road and the function it performs are revealed by the political jurisdiction which has control over its design and maintenance. State roads may be expected to carry large volumes of traffic throughout the region and be classified as arterials, while County roads will consist primarily of secondary arterial and primary collector roads, as well as some secondary collector roads. Municipal roads generally include only local streets and secondary collector roads. As indicated, the Garden State Parkway, Route 9, the Cape May - Lewes Ferry Approach Road, and Route 47 (Wildwood Boulevard) are all State owned. County roads include Fulling Mill Road, Bay Shore Road, Breakwater Road, Tabernacle Road, Fishing Creek Road, Jonathan Hoffman Road, Shun Pike Road, Seashore Road, New England Road, Stimpson Lane, and Ocean Drive. The remainder are all municipally owned roads. In Lower Township, a number of County and State owned roads are called upon to fulfill local functions as well as their collector and arterial roles, as is evident from the number of lots having direct access onto them. This is true of both Bay Shore Road and Route 9, for example.

FEDERAL AID SYSTEM

Plate 27 shows roads within Lower Township which are included in the Federal Aid System of Highways. These roads are part of a national interconnected and coordinated rural and urban road system, and, as such, are eligible for up to seventy percent (70%) federal funding for any road construction or improvement. As indicated, both Route 9 and the Cape May - Lewes Ferry Approach Road are part of the federal rural primary system. The rural secondary system includes Ocean Drive, Seashore Road, Jonathan

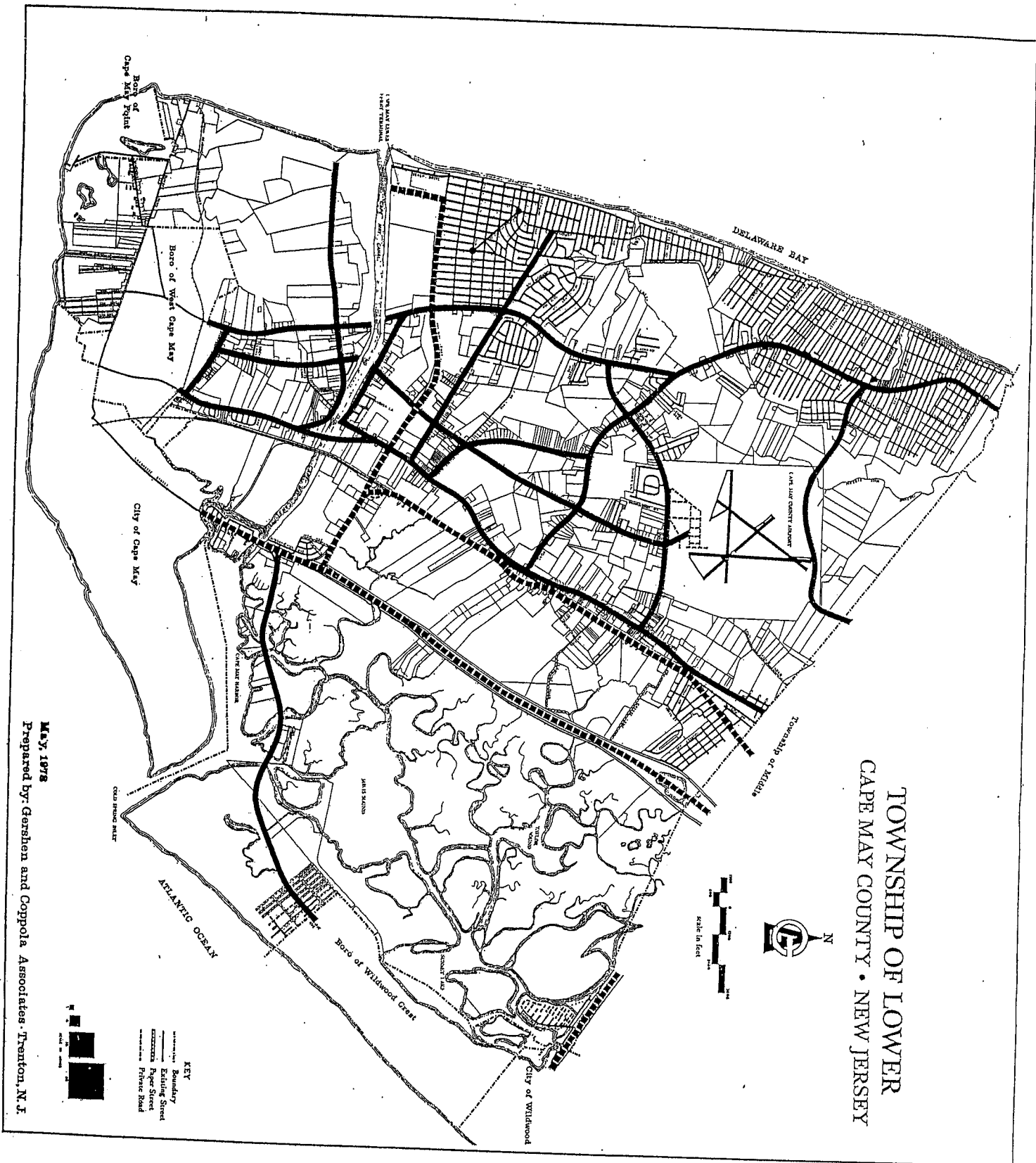


plate 26
JURISDICTION OF ROADS

- STATE
- COUNTY
- LOCAL

SOURCE : Traffic and Transportation, Cape May County Planning Board, March, 1975.

Hoffman Road, Bay Shore Road, Shun Pike Road, Wildwood Boulevard, and Breakwater Road. Inclusion in the Federal Aid System is an indication that a road plays more than a local or intramunicipal transport role and is a helpful guide in classifying roads according to their functions.

TRAFFIC VOLUMES

Plate 28 represents 1977 traffic volume information for Lower Township in the form of annual average daily totals (AADT) and average summer daily totals (ASDT). The New Jersey Department of Transportation provides the annual average daily totals each year for a number of roads. AADT's are estimates of the two-way traffic that would pass over a particular section of roadway during a typical twenty-four hour period based on a representative twenty-four hour mid-week count to which a "pattern factor" is applied. The "pattern factor" translates the sample count into an annual average; its value varies for the type of road or highway to which it is applied. This method has an inherent short coming -- the year round average obscures the seasonal and weekly fluctuations of traffic. In Lower Township, summer traffic increases are of serious concern in the planning process. Thus, the plate also presents estimates of the average summer daily total trips calculated according to ratios established by the Cape May County Planning Board of 2.041 average summer daily trips to one (1) annual average daily trip.

The AADT's and ASDT's should be considered only as rough guides to existing traffic conditions. Nevertheless, the information is useful as an indication of the magnitude of demand on Lower Township roads. As noted previously, the busiest point in all of Lower Township's road network is just above Schellenger's Landing where Route 9 and the Garden State Parkway come together, collecting and distributing traffic to and from the coastal areas east and south of that point.

CLASSIFICATION OF EXISTING ROAD FUNCTIONS

Based on the information contained in Plates 25, 26, 27 and 28 and observations of local travel behavior by the Consultant and members of the Lower Township Planning Board, the current functional classifications of Lower Township's roads have been determined and are presented on Plate 29. The only primary arterial existing in Lower Township is the Garden State Parkway. However, Routes 47 and 9, most of Bay Shore Road, and the Cape May - Lewes Ferry Approach Road are all classified as secondary arterials, based on both ownership (with the exception of Bay Shore Road, they are all State roads) and the longer distance, interregional types of trips they carry. Primary collector roads are those County roads which carry a substantial number of vehicles to and from arterials as well as intermunicipal (intra-regional) traffic. Included are Town Bank Road, Fulling Mill Road, a portion of Tabernacle Road, Seashore Road, Breakwater Road, Sunset Boulevard and Ocean Drive. Secondary collector roads include Fishing Creek Road, most of Tabernacle Road, New England Road, Bay Shore Road below the Cape May - Lewes Ferry Approach Road, Clubhouse Drive/Bay Drive, Shore Drive, Shun Pike Road north of the Cape May - Lewes Ferry Approach Road,

Washington Boulevard, Franklin Avenue, and Pilgrim's Plaza. The remaining streets all serve local functions.

The fact that roads in Lower Township are determined to serve currently the functions shown on Plate 29 does not necessarily indicate that they were designed to do so. Use of the classification system implies conformance to a set of ideal types which do not, in reality, exist. The inadequate condition of a roadway to efficiently accommodate the demands placed upon it is a major source of transportation conflicts. In Lower Township, for example, Bay Shore Road serves a secondary arterial function while still providing unlimited driveway access to individual properties in the manner of a local road. The potential suitability or unsuitability of Lower Township's roads to meet both existing and future demands placed upon them is evidenced by their right-of-way widths, which are discussed in the following paragraphs.

STREET RIGHT-OF-WAY WIDTHS

Street right-of-way widths throughout Lower Township were estimated from Tax Map information and confirmed with the Cape May County Engineer's office. They are presented on Plate 30. A roadway's right-of-way width normally gives an indication of its function within the highway network and the traffic volumes it accommodates. It should be noted here that a street's right-of-way width is not synonymous with the paved area of the roadway, referred to as the "cartway width." The right-of-way width includes the paved area, or cartway, the shoulders, utility easements, and sidewalks, if present. Generally speaking, the State and County roadways will have the widest rights-of-way within a municipality. However, Lower Township contains numerous exceptions to this rule, as indicated on the plate.

In most cases, no roadway should have a right-of-way width of less than fifty (50) feet. In fact, roads having a fifty foot (50') right-of-way should perform only the basic local function of providing access to abutting properties; no through traffic should be part of the traffic flow. When a roadway is called upon to serve as a collector road, handling through traffic and attendant higher volumes, the required right-of-way should be increased to sixty (60) feet or more. Arterial roads should have right-of-way widths ranging from sixty-six (66) to eighty (80) feet or more, depending on their classification as either primary or secondary arterials. In Lower Township, there seems to be little relationship between a road's current function in the system and the right-of-way assigned to it. This is partially because certain areas of Lower Township which are particularly deficient in this respect developed a long time ago, when smaller cars and slower traffic did not require the additional dedication of land. However, it is evident from the Tax Map analysis that an effort has been made in the site plan and subdivision review process to obtain additional right-of-way dedication from developers whenever possible. It is interesting to note that the one area of Lower Township which may be considered to have excessively large rights-of-way is the North Cape May area, where roads serving as secondary collectors have, in some cases, rights-of-way of up to one hundred (100) feet.

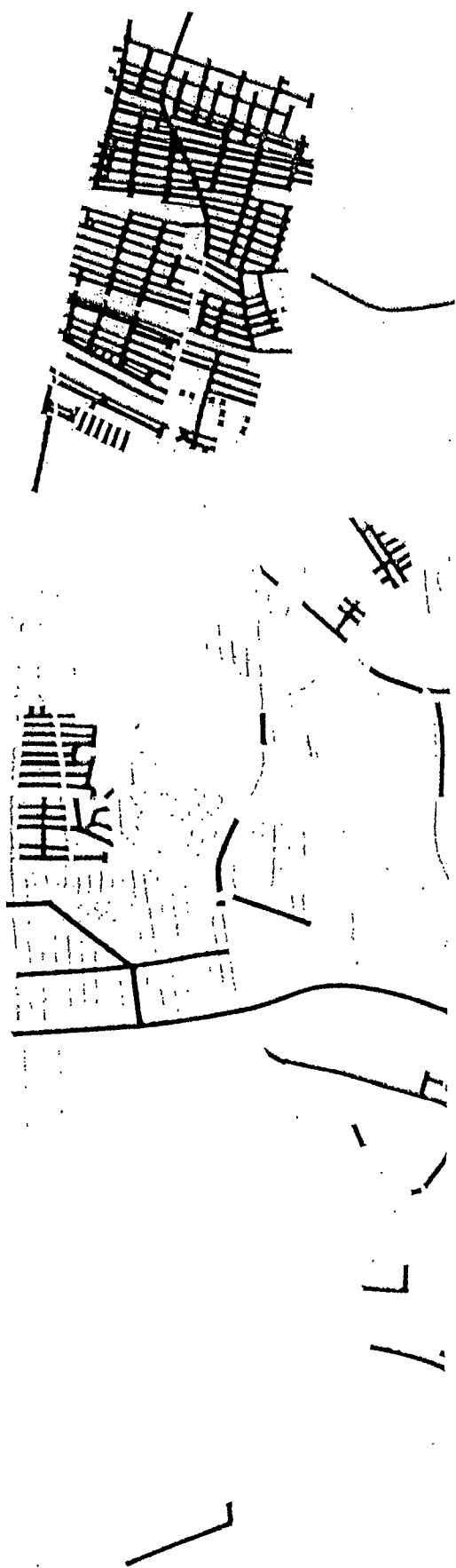


plate 30

EXISTING RIGHTS-OF-WAY

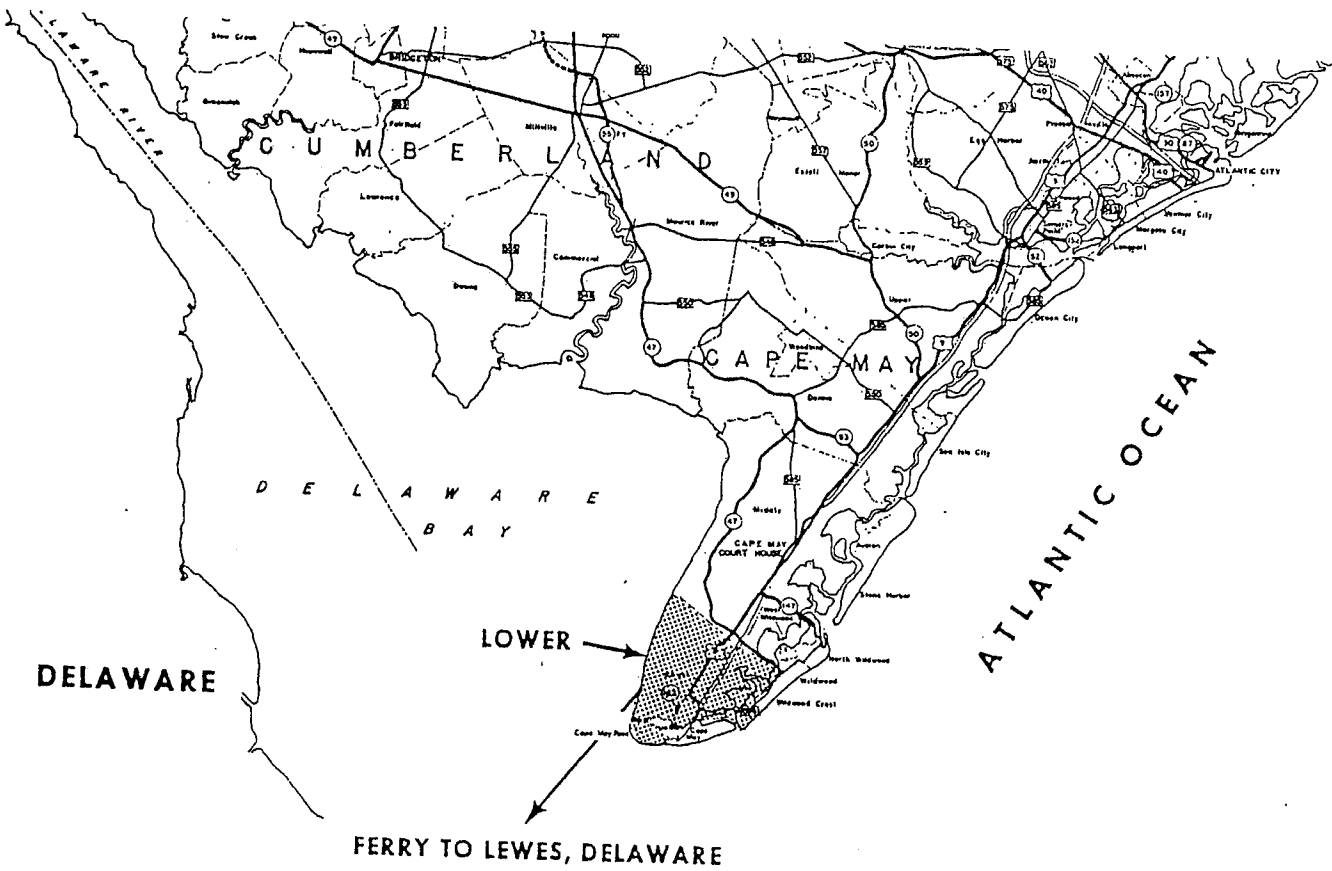
LESS THAN 49.5 FEET

49.5 TO 60 FEET

GREATER THAN 60 FEET

plate 25

REGIONAL LOCATION



TRAFFIC ACCIDENTS

An analysis of traffic accidents is a measure of how well the existing road network does or does not perform and points to areas where corrective action may be necessary. Plate 31 shows the locations and frequencies of vehicular accidents in Lower Township during the time period from January 1, 1977 to December 31, 1977. Plate 32 presents specific data for the number of accidents which occurred in Lower Township in that time. It is important to note that the accidents presented on Plate 31 and tabulated on Plate 32 constitute only those which were reportable to the State Police. About fifty percent (50%) more accidents actually occurred in Lower Township during the year 1977, but these were not reported to the State since they were responsible for less than \$200 worth of property damage and did not involve injury or death. The following statistics provide some insight into the nature of the accidents reported to the State Police:

1. there were a total of 405 accidents during the recorded period;
2. of the 405 accidents which occurred, two (2) resulted in death, but 217 or 53.0% of the total caused human injury;
3. approximately 60% of the accidents happened during the daylight hours, 76.8% occurred in clear weather and 72.7% occurred in dry weather, indicating that factors other than poor visibility or bad weather conditions probably precipitated the accidents; and,
4. approximately 35.0% of the 405 accidents occurred during the summer months, between June 15th and September 15th.

To summarize probable causes of accidents, the following statements were made by the American Association of State Highway Officials, based on an overall analysis of highway design at the national level:

Accidents Increase -

1. as traffic volume exceeds the original design capacity;
2. with increased cross traffic and turning movements at intersections;
3. with the frequency of roadside users having direct access to the highway; and
4. with inconsistent design standards, such as steep grades, sudden sharp turns, limited visibility and a varying number of lanes.

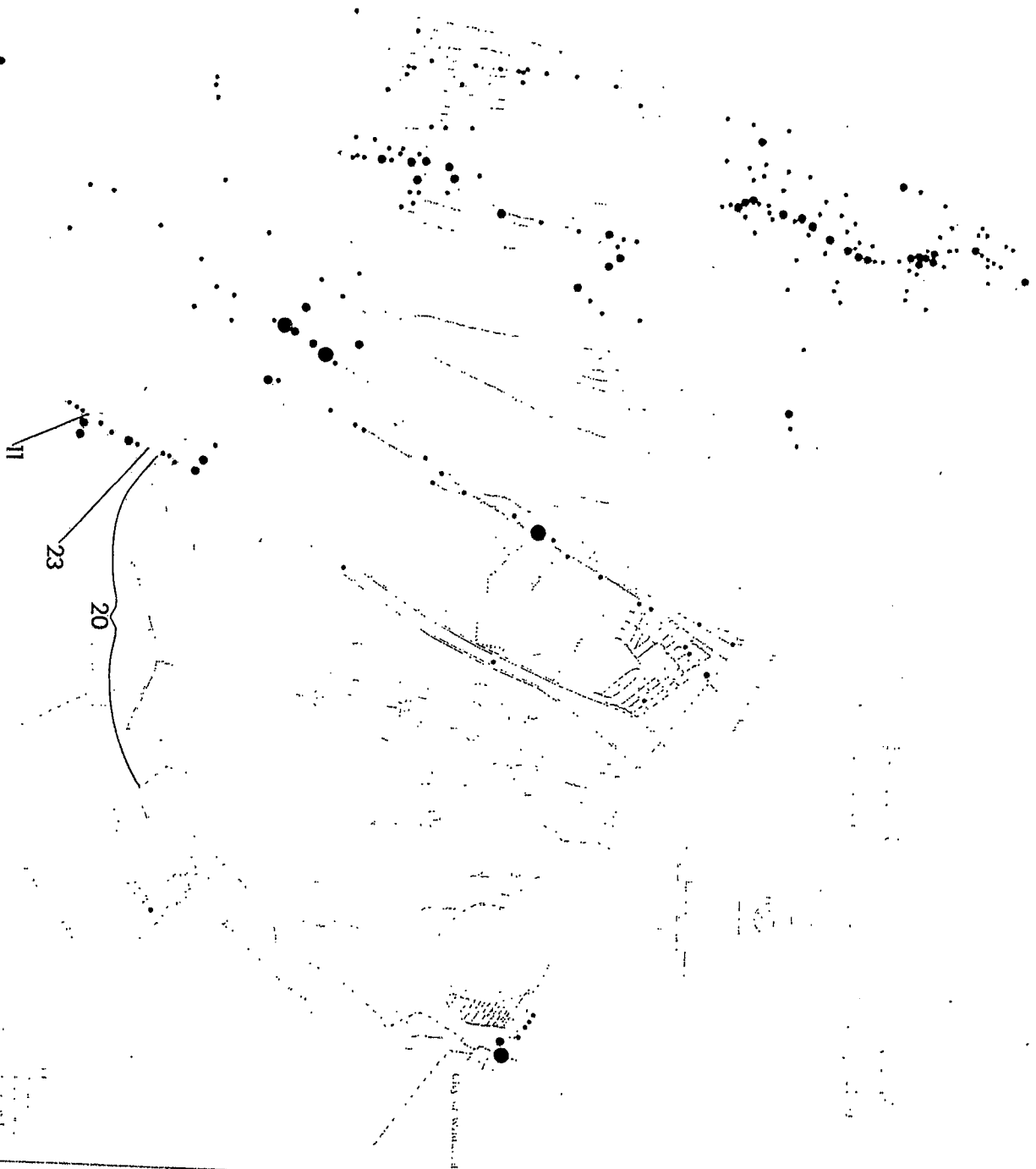


plate 31
LOCATION OF TRAFFIC ACCIDENTS

- 1
 - 2-5
 - 6-10
- AS INDICATED

SOURCE: New Jersey Department of Transportation, Traffic
Accident Report: January 1, 1977-December 31, 1977.

PLATE 32

TRAFFIC ACCIDENT DATA January 1, 1977 - December 31, 1977

Lower Township, New Jersey

TOTAL ACCIDENTS: 405*

ACCIDENTS INVOLVING: Deaths 2 Bicycles 4
Injuries 217 Pedestrians 9

BY MONTH: January 34 May 27 September 36
February 18 June 36 October 30
March 29 July 63 November 36
April 20 August 44 December 32

BY DAY OF WEEK: Sunday 71 Monday 47 Tuesday 59 Wednesday 58 Thursday 34 Friday 50 Saturday 79

BY TIME OF DAY:

a. m.	No. of Accidents	a. m.	No. of Accidents	p. m.	No. of Accidents	p. m.	No. of Accidents
12 - 1	12	6 - 7	5	12 - 1	29	6 - 7	18
1 - 2	18	7 - 8	18	1 - 2	21	7 - 8	27
2 - 3	14	8 - 9	19	2 - 3	17	8 - 9	9
3 - 4	12	9 - 10	13	3 - 4	32	9 - 10	9
4 - 5	6	10 - 11	12	4 - 5	25	10 - 11	15
5 - 6	5	11 - 12	19	5 - 6	14	11 - 12	7
	<u>67</u>		<u>86</u>		<u>138</u>		<u>85</u>

BY ROAD CONDITION: Dry 285 Wet 82 Snowy 5 Ice 19 = 392

BY WEATHER: Clear 301 Rain 79 Snow 8 Fog 4 = 392

NOTE: Discrepant totals due to incomplete accident reports.

* Total includes only those accidents in excess of \$200.00 damage or which caused injury or death reported to the New Jersey Division of Motor Vehicles, either by a police officer or an individual driver.

SOURCE: New Jersey Department of Transportation, Detail of Motor Vehicle Accidents by Road System, 1/1/77 to 12/31/77.

Accidents Decrease -

1. with an increase in sight distance;
2. where access to a highway is limited to controlled access points; and
3. with improved standards such as wider lanes, shoulders and improved lighting.

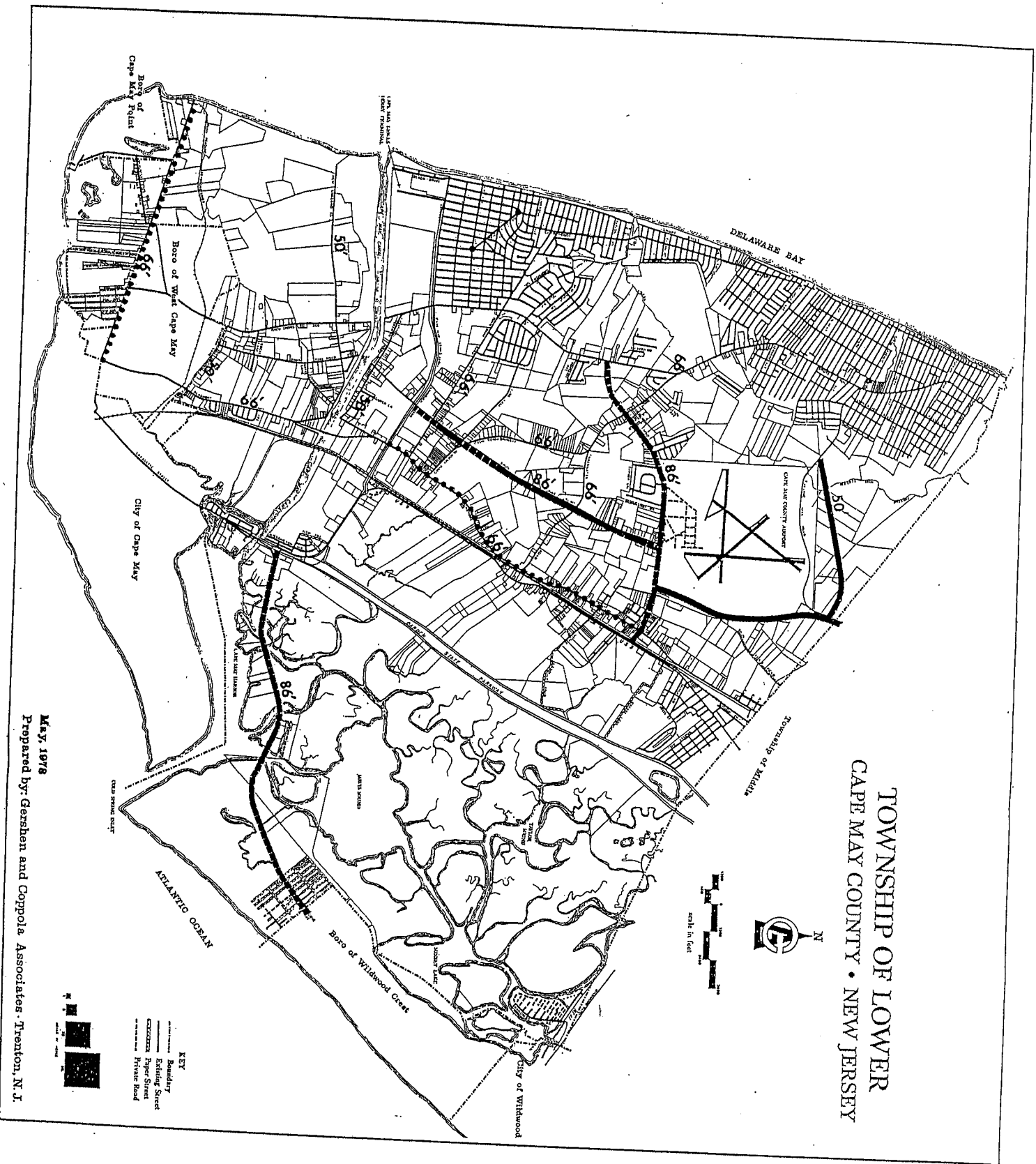
The frequency of accidents rises as the volume of traffic the road is forced to carry exceeds its capacity. Capacity is a function of a number of characteristics including the width of a road, the efficiency and safety of its intersections, the number of driveway access points along it, and the speed with which it is travelled. Although a road's capacity cannot be predicted with absolute certainty, the failure of a road's capacity to handle the volumes assigned to it is reflected in an increased number of accidents.

COUNTY ROAD PROPOSALS

The adopted Official Map for Cape May County shows a number of improvements to the portion of the County road network lying within Lower Township's boundaries, improvements which, if implemented, would significantly affect traffic circulation conditions in and around the municipality. In addition, the County Planning Board's 1975 Traffic and Transportation study contains the recommended right-of-way widths for County roads according to their functional classifications, which are established on the Official Map. The Official Map proposals and the future rights-of-way of all County roads are presented on Plate 33.

Acquisition of additional rights-of-way is recommended for all County roads within Lower Township with the exception of Ocean Drive, which has an existing right-of-way of approximately 120 feet. In addition to increasing rights-of-way on County roads throughout Lower Township, the relocation of Fulling Mill Road and the construction of a new airport access road are proposed. Shun Pike Road is anticipated to become a major (primary) collector road.

Plate 33 also shows the County's proposed bikeway system as it affects Lower Township. Although the bikeway alignments indicated on the plate are as presently established on the Official Map, the County Planning Board has recently proposed the construction of a bikeway system along the entire Atlantic coast of Cape May County which would include a trail travelling east on Seagrove Avenue to Sunset Boulevard, east on Sunset Boulevard to West Drive in West Cape May, north on Schellenger's Landing over the Cape May Canal to Ocean Drive, and along Ocean Drive to Pacific Avenue in Wildwood Crest. This proposal, if adopted by the Board of Chosen Freeholders, would require some modifications in the Official Map with respect to the locations of bikeways. However, the general directions of both the presently endorsed and proposed routes are consistent, and both are intended to be Class III systems (constructed within existing rights-of-way).



May, 1978
Prepared by: Gershen and Coppola Associates, Trenton, N.J.

plate 33
COUNTY TRANSPORTATION PROPOSALS

- BIKEWAY CONSTRUCTION
- NEW ROAD CONSTRUCTION
- ROAD RELOCATION
- PROPOSED PRIMARY COUNTY ROADS
- 86' PROPOSED RIGHT-OF-WAY

SOURCE: Official Map for Cape May County, July 26, 1977, and Traffic and Transportation, Cape May County Planning Board, 1975.

In determining its future development pattern, Lower Township should weigh County road improvement proposals carefully, since such proposals strongly influence Lower Township's municipal land use policies. In turn, based on information in the Background Studies and on local policies expressed in the Land Use Development Plan, the township may wish to recommend changes or additions to the County's proposals.

PUBLIC TRANSPORTATION

Lower Township is liberally served by a variety of public transportation facilities.

Airport

The Cape May County Airport, located in the northern portion of Lower Township, is the largest such facility in Cape May County. Although it was built just prior to World War II by the federal government and used during the war as a naval air station, it was turned over to the County for civilian use following the war. While the Federal Aviation Administration characterizes the Cape May County Airport as a local carrier airport, the New Jersey Department of Transportation, in its 1972 Master Plan for Transportation, specifically classifies it as a basic transport airport. The latter classification is applied to those general aviation airports designed to accommodate the entire fleet of general aviation type aircraft, including turbo jet-powered aircraft of up to 60,000 pounds in gross weight.

There are presently four (4) intersecting runways at the airport, only one of which is a precision and one a non-precision instrument approach runway; the other two are visual approach runways. Other ancillary facilities include three (3) hangars, aprons and connecting taxiways together with pavement markings, airfield lighting on the two major runways and appropriate navigational aides.

As of 1975, there were approximately 50 planes permanently based at the airport and approximately 100 additional planes based there during the summer months. The range of available services includes sightseeing flights, private flying and a variety of air transit and transport services (passenger service, air freight and mail).

According to the Cape May County Airport Master Plan, the total based aircraft is projected to grow to 55 year-round and 182 in the summertime by 1980; and by 1995, to 83 year-round and 309 in the summertime. Correspondingly, the number of annual aircraft movements is anticipated to grow to 77,900 in 1980 from a base of 48,000 in 1973. By 1995, total annual aircraft movements are anticipated to reach 158,900. This anticipated increase in activity at the airport has important effects on planning within Lower Township, particularly in those areas immediately surrounding the airport. The County's plans for the future development of the airport include additional land acquisition to the north and east, the relocation of Fulling Mill Road and the construction of a new airport access road. At such time as these and numerous other improvements are completed, the

airport will have a capacity to handle 242,000 movements annually (121 peak hour movements), approximately fifty percent (50%) more than the demand projected for the year 1995.

These plans must be taken into consideration in evaluating land use proposals for Lower Township in the immediate vicinity of the airport. Although problems often associated with the presence of an airport in a community include its need to acquire land and easements and possible water, air and noise pollution impacts, these may be avoidable in Lower Township since plans for airport expansion do not appear to involve the displacement of homes and other buildings, and only limited residential areas are disturbed by airport noise.

Ferry

Adjacent to the Cape May Canal in the western portion of Lower Township is the Cape May - Lewes Ferry. The Ferry began operation in 1964, and now transports approximately 550 passengers daily off-season and 3,300 passengers daily during the summer. It utilizes three (3) ferries, each capable of carrying seven hundred (700) passengers and one hundred (100) vehicles. During the summer of 1978, ten (10) round trips were scheduled each day at one-hour intervals between 7:00 a.m. and 8:40 p.m. During the fall and spring, the number of round trips per day was reduced to six (6), and during the winter, to four (4). The schedule is subject to change annually.

Railroad

The Pennsylvania Reading Seashore line, now a division of ConRail, continues to maintain both north/south and east/west trackage in Lower Township. While no railroad stations currently exist in Lower Township, passengers may embark at either Rio Grande or Cape May. During the winter, only two trips per day five days a week are scheduled; during the summer, there are four trains five days a week, and two on Saturdays, Sundays and holidays.

Busses

Bus transportation in Lower Township consists of two private transit companies and the Cape May County Fare Free Senior Citizens bus system. Transport of New Jersey operates daily busses to and from Philadelphia, (three (3) runs each way during the winter and six (6) runs each way during the summer) and two (2) runs each way daily from Cape May to Ocean City via Ocean Drive. In addition, during the summer, Transport of New Jersey also runs a Wildwood, Rio Grande, Villas, North Cape May, Cape May line with a two (2) hour headway. Lincoln Transit Company operates two (2) daily round trips from Cape May to New York during the summer months.

The County's Fare Free Senior Citizens bus route runs through the Villas along Bay Shore Road, through the North Cape May area and south of the canal into West

Cape May, and up through the Diamond Beach area into Wildwood Crest. In addition, a second line runs from Cape May through Schellenger's Landing and up Route 9. The Fare Free bus system operates year round.

Plate 34 demonstrates existing public transportation facilities and routes in Lower Township.

CONCLUSION

Future improvements to the road network throughout Lower Township must be designed to 1) rectify existing inadequacies and 2) prepare for future development and increased traffic volumes. A significant problem for both County and municipal roads in Lower Township is the lack of sufficient right-of-way widths within which to improve existing streets to handle anticipated traffic. The primary techniques for the acquisition of future rights-of-way are through the dedication and reservation processes, both of which are accomplished at the time of site plan and subdivision review. However, where no new development is occurring but road right-of-way widths are insufficient to accommodate needed improvements, purchase of additional right-of-way may be necessary. (This may be facilitated through off-tract improvements ordinance provisions, in some cases.) Additionally, the regulation of land uses which will abut the existing roadway network and the exercise of controls that will insure an uninterrupted flow of traffic, including such measures as limited access points and increased setbacks from the roadways, can be used to maximize the safety and efficiency of the road network as the township develops. These techniques are effected through the enactment of a Development Ordinance implementing the various Land Use Development Plan proposals.

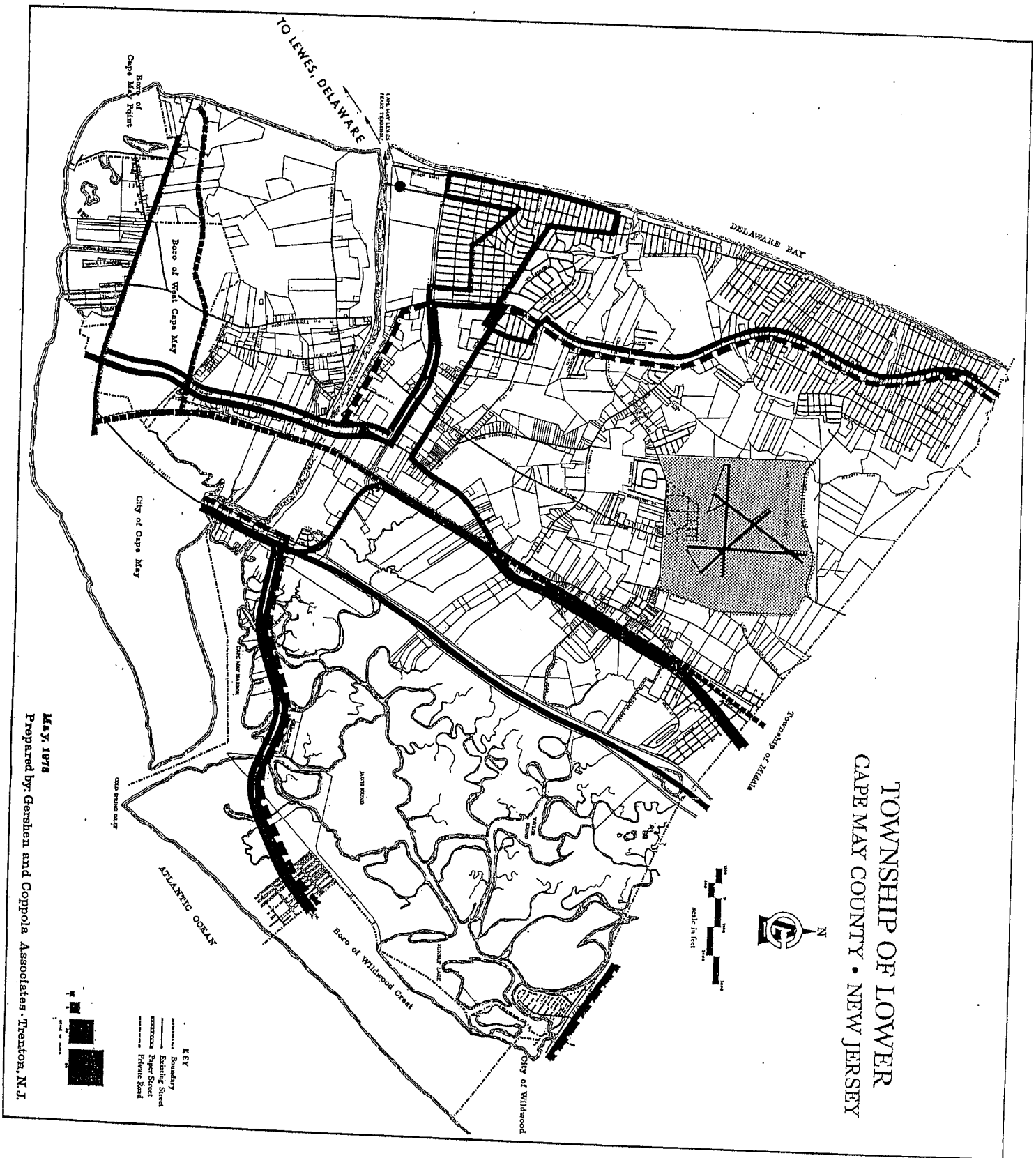


plate 34
PUBLIC TRANSPORTATION

- CAPE MAY COUNTY BUS SYSTEM (Senior Citizens)
- TRANSPORT OF NEW JERSEY
 - Year Round
 - Summer Only
- LINCOLN TRANSIT
- PENN READING SEASHORE LINE (Con Rail)
- CAPE MAY COUNTY AIRPORT
- CAPE MAY-LEWES FERRY

SOURCE: Cape May County Planning Board; Transport of New Jersey; Field Survey by Consultant, June, 1978.

**COMMUNITY FACILITIES
AND UTILITIES SERVICES**

COMMUNITY FACILITIES AND UTILITIES SERVICES

INTRODUCTION

Community facilities and utilities services information is essential to any Land Use Development Plan. By examining the extent to which such services and facilities currently exist, and comparing them, where helpful, to standards for performance or availability set by various public and quasi-public agencies, existing deficiencies can be identified and incorporated into considerations of both the appropriateness and the impact of future development plans. This section of the Background Studies describes the community facilities and utilities currently available to residents of Lower Township.

PUBLIC SCHOOLS

Lower Township residents are served by two separate school systems. The Lower Township school system, accommodating students in grades K through 6, includes two buildings: the Lower Township Consolidated School and the Maud H. Abrams Primary School; a third school containing twelve (12) classrooms will be constructed at the new municipal complex on Bay Shore Road. The Lower Cape May Regional school system, which includes the Richard M. Teitelman School and the Lower Cape May Regional High School, accommodates grades 7 through 12 and serves not only students from Lower Township, but also students from Cape May and West Cape May and tuition students from Cape May Point. The locations of all existing and proposed school buildings are presented on Plate 35.

Plate 36 inventories the physical facilities and staff of the Lower Township school system. Consolidated and Maud Abrams Schools are located adjacent to each other on a roughly twenty (20) acre site along Seashore Road. Consolidated School was constructed in 1932 and reconstructed in 1933. The Maud Abrams School was constructed in 1966. Maude Abrams currently has a functional capacity rating of 698 students and Consolidated School is rated as having a functional capacity of 511 students. A school's functional capacity indicates the maximum number of students who should be assigned to a building based upon recommended standards for the minimum required total square footage per student for various types of instructional activities. For example, the State Department of Education recommends that classrooms for grades 1 through 3 should possess 32 square feet per student, whereas classrooms for 8th grade students should have 28 square feet per student and science rooms 50 square feet per student. It is important to realize that the functional capacity of a school reflects its present utilization. This figure is apt to change as the internal structure and use of space changes. The functional capacity rating is assumed to represent the number of students that safely can be accommodated within a building, while the optimum capacity is primarily a matter of Board of Education policy. The Superintendent of the Lower Township school system has indicated that the optimum capacity of each of the two schools is closer to 500 students.

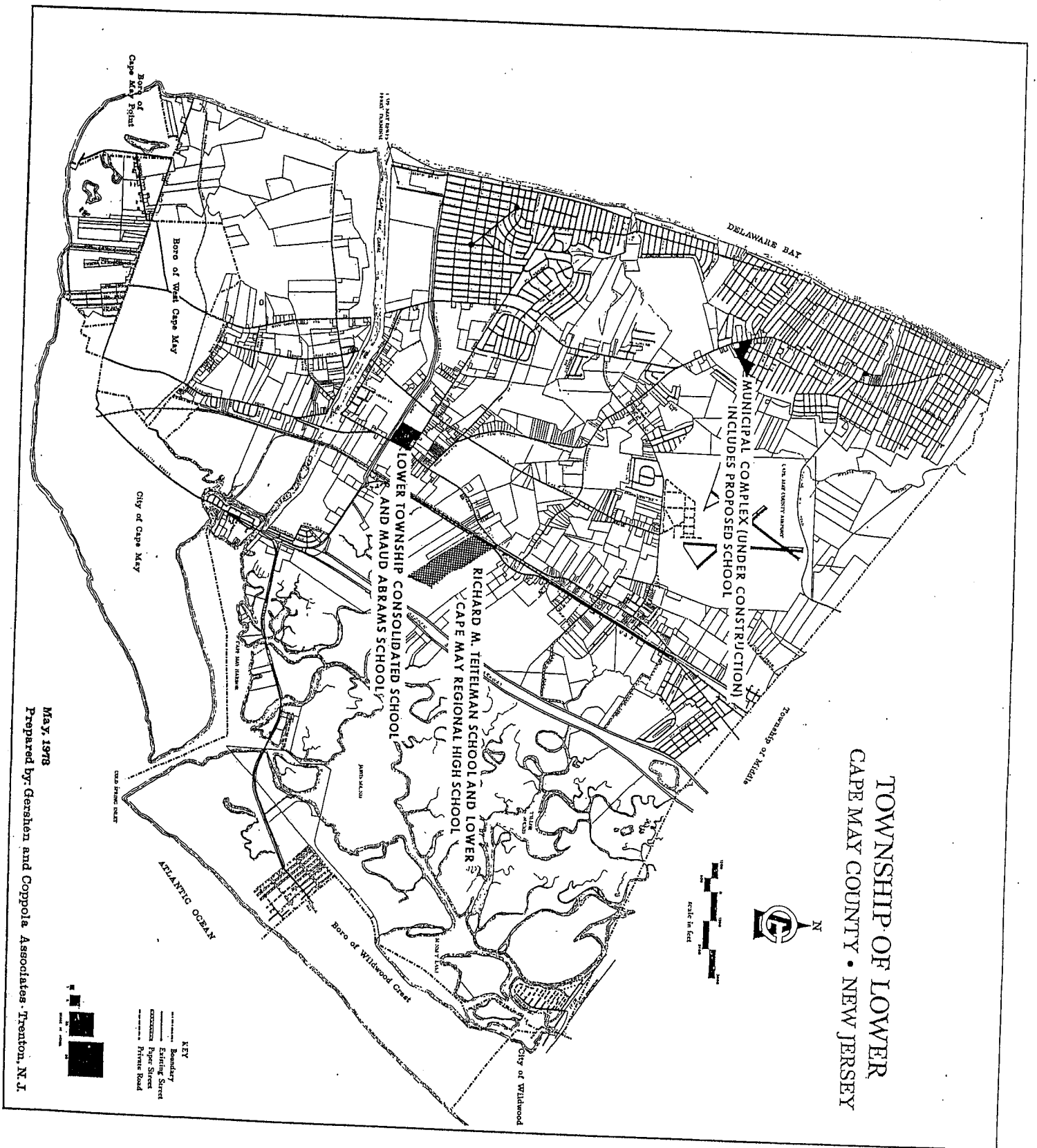


plate 35
SCHOOL LOCATIONS

SOURCE: Lower Township Tax Maps and Survey by Consultant, June, 1978.

PLATE 36

LOWER TOWNSHIP
SCHOOL SYSTEM
FACILITIES AND STAFF
1978-79

CONSOLIDATED SCHOOL
FACILITIES

- 27 Classrooms (3 for special education)
- 1 Multi-Purpose Room with stage
- 1 Band Room
- 1 Library

MAUD ABRAMS SCHOOL
FACILITIES

- 26 Classrooms (3 for special education)
- 1 Multi-Purpose Room with stage (of which a portion is used as a library)
- 1 Library (currently used as a classroom)

OUTDOOR FACILITIES (SHARED)

- 4 Playfields (softball)
- 1 Football/Soccer Field
- 1 Playground (for kindergarten use)
- 2 Hardtop Basketball Areas

DISTRICT STAFF

- 3 Administrators
- 3 Administrative Secretaries
- 1 Custodian of School Monies
- 4 Child Study Team Members
 - Psychologist, Social Worker, Learning Disabilities
 - Teacher Consultant, Secretary
- 75 Teachers
- 7 Instructional Aides
- 4 Clerks
- 4 School Secretaries
- 1 Plant Manager
- 11 Custodians
- 17 Bus Drivers
- 1 Mechanic
- 1 Cafeteria Manager
- 14 Cafeteria Staff Members
- 4 Cafeteria Aides

SOURCE: Lower Township Board of Education, Office of the Superintendent.

Since enrollments in the district have consistently exceeded the 1,209 student functional capacity of the system since 1973-74, a number of emergency measures have been undertaken to accommodate the growing school population. For example, the library in the Maud Abrams School is utilized as a classroom, making it necessary for a portion of the multi-purpose room to be used as a library. In addition, three classrooms are leased by the Lower Township school district in West Cape May for the purposes of accommodating overflow students from Lower Township. The Superintendent of Schools estimates that a deficiency of twenty-one (21) instructional spaces currently exists in the district. Construction of the new twelve (12) classroom school on 3.7 acres of municipally-owned, leased land will help somewhat to offset this need. However, unless school enrollments exhibit a significant decline, at least nine (9) additional classroom spaces are still needed. Current classroom size in the district is nearly twenty-eight (28) students per classroom.

School enrollment trends are characterized generally by the same components of change as are total population trends: 1) the natural increase in population associated with births and deaths, and 2) the migratory movement of families with school aged children into and out of the township. Plate 37 presents school enrollments by grade and year in the Lower Township school system from 1971-72 to 1978-79. As indicated, school enrollments increased substantially through 1976-77. However, there has been a decline of over 100 students since 1976-77. While this may be a temporary phenomenon, trends toward lower birth rates and smaller families, resulting in smaller school populations nationwide, would suggest that it is not. Plate 38 graphically illustrates these enrollment trends.

The Lower Cape May Regional school system's facilities and staff are presented on Plate 39. Unlike the Lower Township school system, the Lower Cape May Regional system appears to have sufficient capacity to meet its responsibilities in the immediate future, although some reallocation of space may be necessary. The current pupil-teacher ratio is approximately 18 students per teacher.

The two schools encompassed by the Lower Cape May Regional district are located on 67 acres along Route 9. The High School (grades 9 through 12) was constructed in 1960, with an addition in 1967, and the Teitelman School (grades 7 and 8) was constructed in 1973. State functional capacities for these schools are 1150 and 720, respectively, and, as evidenced by Plate 40, this capacity has not yet been attained. As in the Lower Township system, a decline in enrollment has occurred from 1977-78 to 1978-79, attributable primarily to a drop in the number of students at the Teitelman School. Plate 41 a. graphically illustrates enrollment trends in the Teitelman School, the High School and in the district as a whole for the years 1971-72 to 1978-79. Since the Lower Cape May Regional school system also receives students from Cape May and West Cape May as well as tuition students from Cape May Point, it is helpful to examine the percentage of Lower Township students represented in those totals. As indicated by Plate 41 b., the proportion of students in the regional school district residing in Lower Township has increased from 67% to 77% between 1971-72 to 1977-78.

PLATE 37

LOWER TOWNSHIP SCHOOLS
SCHOOL ENROLLMENT BY GRADE AND YEAR (1)

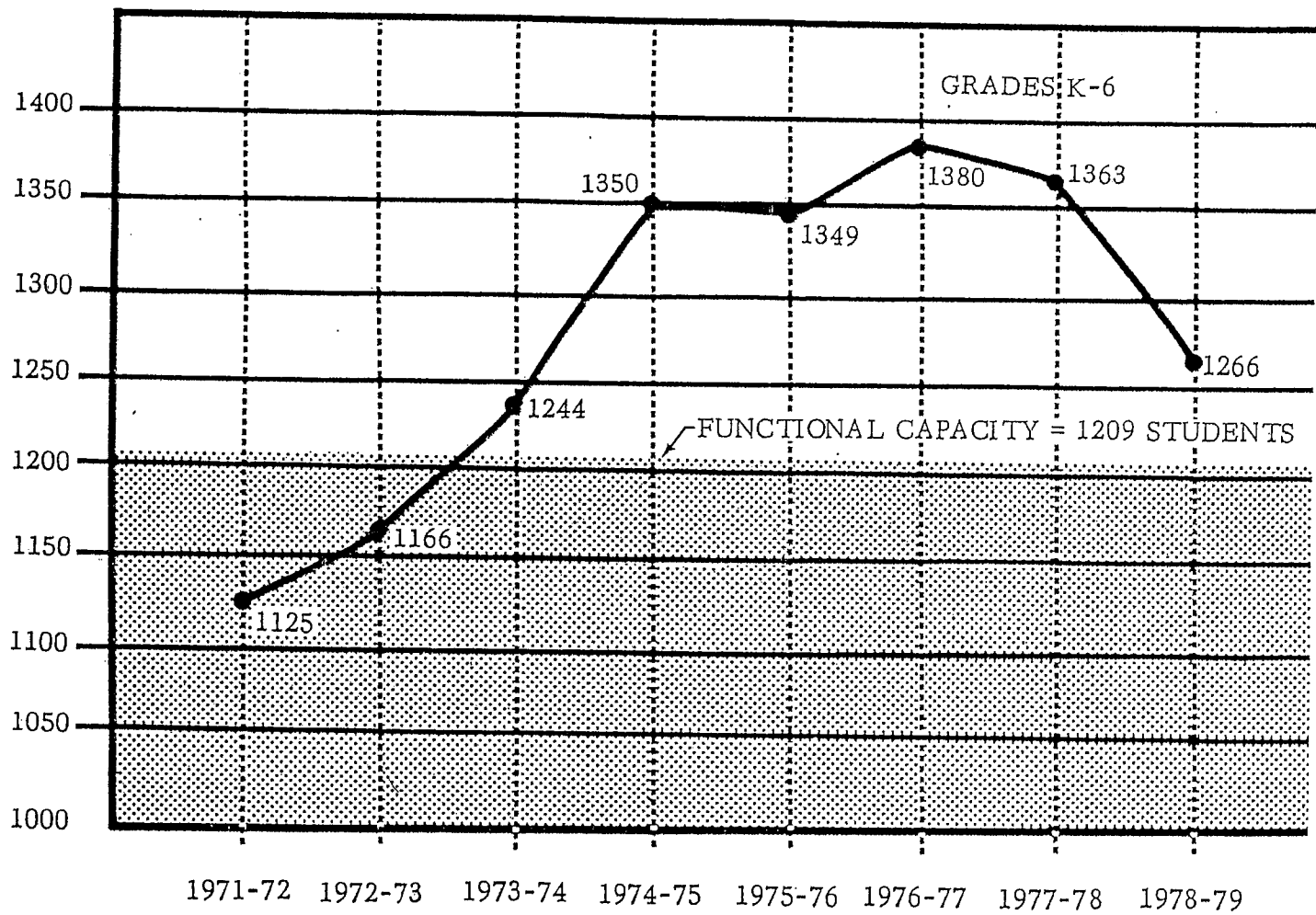
<u>GRADE</u>	<u>1971-72</u>	<u>1972-73</u>	<u>1973-74</u>	<u>1974-75</u>	<u>1975-76</u>	<u>1976-77</u>	<u>1977-78</u>	<u>1978-79(2)</u>
K	166	174	160	184	221	239	177	160
1	145	158	175	184	160	196	221	182
2	154	159	174	183	181	171	187	197
3	151	165	165	190	170	183	183	179
4	173	164	186	190	193	172	198	173
5	157	168	177	192	209	194	184	179
6	152	151	182	198	201	218	205	189
Special Ed.	27	27	25	29	14	7	8	7
TOTAL K - 6	1,125	1,166	1,244	1,350	1,349	1,380	1,363	1,266

(1) Total enrollment as of June of each year, not including students enrolled in private or parochial schools.
(2) 1978-79 enrollments are as of September 1, 1978.

SOURCE: Lower Township Board of Education, Attendance Officer.

PLATE 38

LOWER TOWNSHIP SCHOOLS
SCHOOL ENROLLMENT TRENDS
1971-72 to 1978-79



SOURCE: Lower Township Board of Education, Attendance Officer.

PLATE 39

LOWER CAPE MAY REGIONAL
SCHOOL SYSTEM
FACILITIES AND STAFF
1978-79

RICHARD M. TEITELMAN SCHOOL
FACILITIES

33	Classrooms
1	Gymnasium
1	Library
1	Multi-Purpose Room with stage
1	Shop
1	Home-Ec Room
1	Art Room
1	Large Group Instruction Room
4	Small Group Instruction Rooms
3	General Science Labs

Offices

LOWER CAPE MAY REGIONAL HIGH SCHOOL
FACILITIES

53	Classrooms
2	Gymnasiums
1	Library
1	Auditorium
1	Multi-Purpose Room with stage
1	Cafeteria
3	Shops
2	Home-Ec Rooms
2	Art Rooms
1	Band Room
1	Chemistry-Physics Lab
2	Biology Labs
2	General Science Labs

Offices

District Administrative Offices

OUTDOOR FACILITIES (SHARED)

2	Baseball Fields
1	Softball Field
1	Football Field and Practice Areas
2	Tennis Courts

Additional Open Space

DISTRICT STAFF

4	Administrators
1	Board Secretary
0.5	Custodians of School Monies
105.5	Teachers
1	Supplementary Teacher
2	Media Specialists
11	Aides
6	Guidance Staff Members
3	Child Study Team Members
2	Nurses
15.5	Secretaries and Clerks
3	Supervisors
	- Building and Grounds, Transportation, Food Services Director
21	Custodians
11.5	Bus Drivers and/or Mechanics
23	Food Service Employees

SOURCE: Lower Township Board of Education, Office of the Superintendent.

PLATE 40

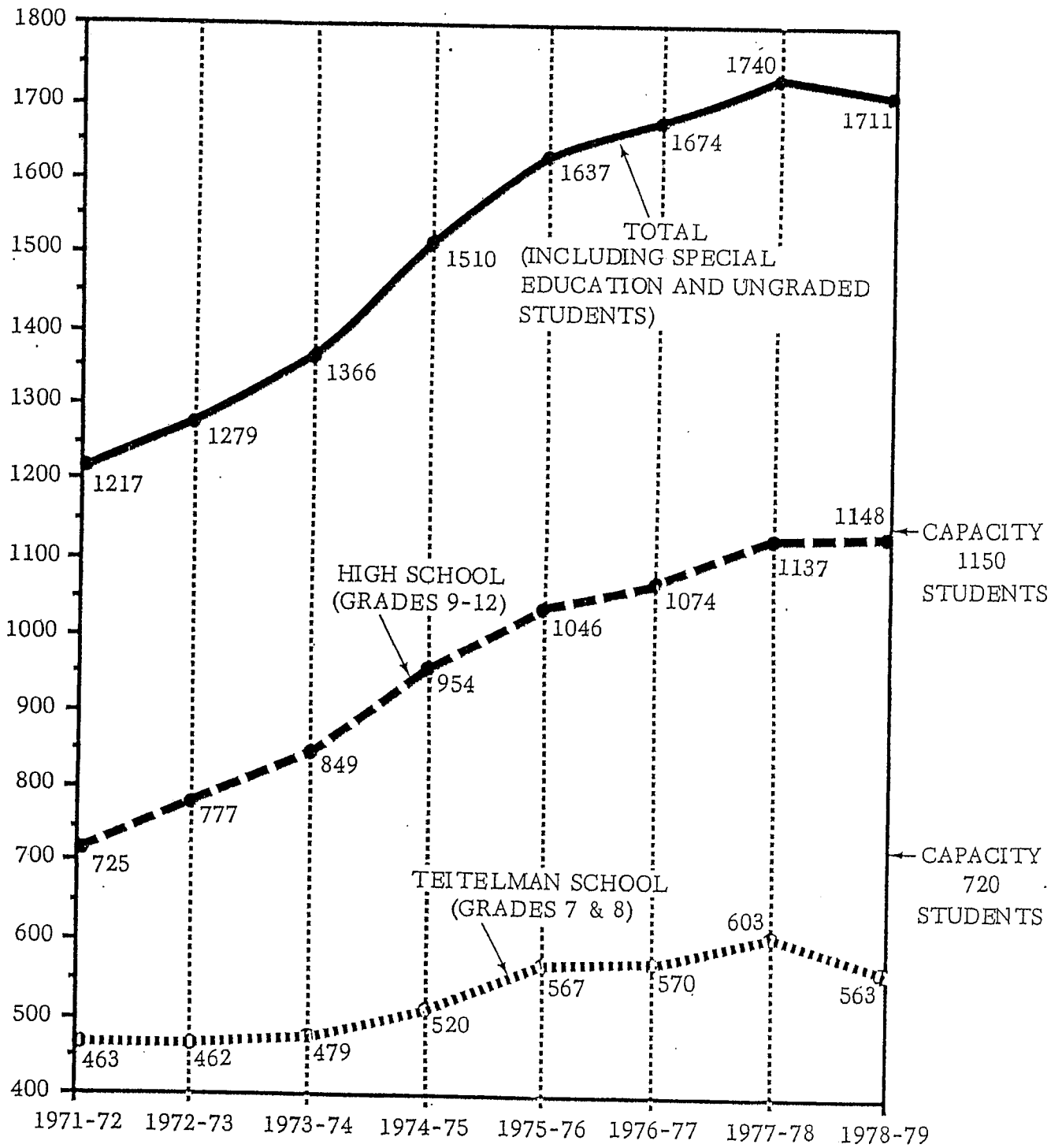
LOWER CAPE MAY REGIONAL SCHOOLS
SCHOOL ENROLLMENT BY GRADE AND YEAR(1)

<u>GRADE</u>	<u>1971-72</u>	<u>1972-73</u>	<u>1973-74</u>	<u>1974-75</u>	<u>1975-76</u>	<u>1976-77</u>	<u>1977-78</u>	<u>1978-79</u>
7	210	235	237	268	288	282	304	300
8	253	227	242	252	279	288	299	263
9	229	276	266	307	325	330	346	349
10	180	206	240	243	274	269	287	304
11	178	154	201	223	227	257	262	265
12	138	141	142	181	220	218	242	230
Special Ed. or Ungraded	29	40	38	36	24	30	--	--
TOTAL 7 - 12:	1,217	1,279	1,366	1,510	1,637	1,674	1,740	1,711

(1) Total enrollment as of September of each year, not including students enrolled in private or parochial schools.

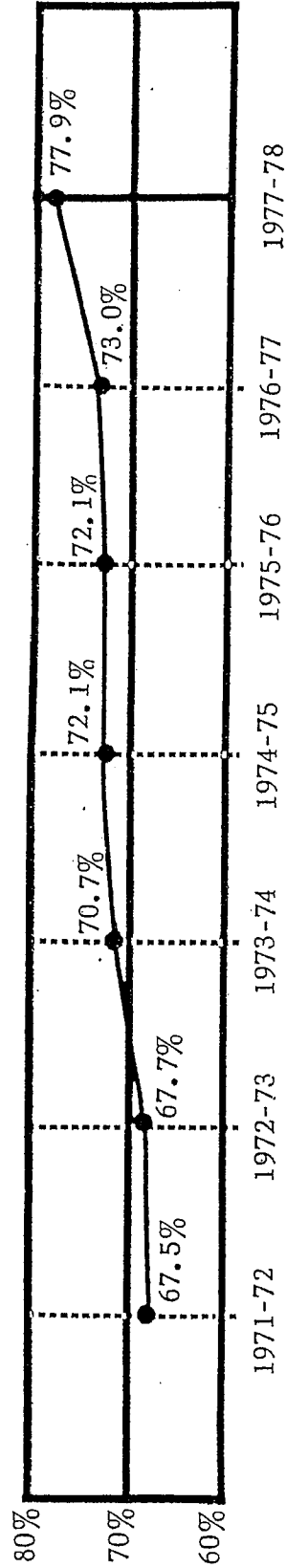
SOURCE: Lower Cape May Regional Schools, Office of the Superintendent.

PLATE 41 a.
LOWER CAPE MAY REGIONAL SCHOOLS
SCHOOL ENROLLMENT TRENDS
1971-72 TO 1978-79



SOURCE: Lower Cape May Regional Schools, Office of the Superintendent.

PLATE 41 b.
 LOWER TOWNSHIP STUDENTS
 AS A PERCENTAGE OF THE
 ENTIRE LOWER CAPE MAY
 REGIONAL SCHOOL DISTRICT
 STUDENT POPULATION
 1971-72 TO 1976-77(1)



(1) Figures for 1978-79 are not yet available.

SOURCE: Lower Cape May Regional Schools, Office of the Superintendent.

Plate 42 shows the number of Lower Township students attending private and parochial schools outside the two public school systems in 1978-79. The figures are compiled from school bus transportation and textbook reimbursement information obtained from the Lower Township and Lower Cape May Regional school systems. A vocational school program is also available to students in grades 11 and 12 at the County Vocational School. This program will be expanded to encompass students in grades 9 through 12 by the fall of 1979.

FIRE PROTECTION

Lower Township residents are served by three volunteer fire companies: Villas, Erma and Town Bank. Plate 43 presents the locations of each fire company and its corresponding district. Plate 44 provides a summary of each company's mobile equipment inventory and indicates the number of active members and the number of calls responded to from 1975-1977. Volunteers at each company are alerted to fires by sirens located at each fire house or by portable plectrons.

All three fire companies are part of a Cape May County mutual aid pact and will respond to emergencies, upon request, in other municipalities. In turn, calls from areas of Lower Township south of the Canal and west of the Garden State Parkway are responded to immediately by other municipal fire departments having superior access to those areas.

The fire companies are supported by a levy of a fire tax upon residents within their respective districts, although, for taxing purposes, residents south of the Canal are not included in a district. Fire budgets are voted on by district residents prior to the annual levy.

POLICE PROTECTION

Police protection is provided by the township's police force located in newly constructed facilities on Bay Shore Road in the Villas. The department consists of twenty-eight (28) year-round officers, including one chief, one captain, one lieutenant and five detectives. In addition, there are twenty-five (25) auxiliary officers who supplement the regular department coverage. Each of these officers puts in approximately sixteen (16) hours per month. Support staff includes three (3) summer officers, two (2) crossing guards, five (5) dispatchers and three (3) clerk typists.

The 3,920 square foot police facility provides ample space for the administration and operation of the department. In addition to various offices, the building also houses a cell block, a records room, a room for the storage of evidence, a staff room and a communications center from which the dispatchers operate. The department's mobile

PLATE 42

STUDENTS ATTENDING PRIVATE AND PAROCHIAL SCHOOLS
1978-1979

Grades K - 6

Number of Students

Saint Raymond's, Villas	135
Our Lady Star of the Sea, Cape May	84
Saint Ann's, Wildwood	13
Seventh Day Adventist, Cape May Court House	3
Cape May County Christian, Rio Grande	20
Heritage Academy, Fishing Creek	<u>21</u>
Sub Total:	276

Grades 7 - 12

Saint Raymond's, Villas	41
Our Lady Star of the Sea, Cape May	20
Saint Ann's, Wildwood	2
Wildwood Catholic	56
Divine Word Seminary, Bordentown	<u>1</u>
Sub Total:	120
Total:	<u>396</u>

Percentage (%) of Total Student Population Attending
Non-Public Schools 13%

SOURCES: Textbook Reimbursement Files, Lower Cape May
Regional Schools and Lower Township Schools;
Transportation Supervisor, Lower Cape May
Regional Schools.

PLATE 44

SUMMARY OF LOWER TOWNSHIP
FIRE COMPANIES

Villas Fire Company

Active Volunteers: 35

Calls necessitating dispatchment of mobile unit:	1977	} 75 - 125 calls per year for the last three years
	1976	
	1975	

Mobile equipment:	1956	Ford 500 gpm pumper
	1961	Ford 750 gpm pumper
	1965	Ford 750 gpm pumper
	1970	Ford 1,000 gpm pumper
	1971	Ford 750 gpm pumper
	1975	Ford tractor with 8,300 gallon water tank
	1968	Ford 1,000 gpm pumper with 75' aerial ladder
	1971	Ford emergency truck
	1978	Ford multiple emergency rescue vehicle
	1975	Ford station wagon

Town Bank Fire Company

Active Volunteers: 45

Calls necessitating dispatchment of mobile unit:	1977 - 157
	1976 - 126
	1975 - 132

Mobile equipment:	1948	Ahren Fox 1,000 gpm pumper
	1957	GMC 750' gpm pumper
	1963	GMC 750 gpm pumper
	1968	American LaFrance 750 gpm pumper
	1975	Dodge 250 gpm pumper
	1975	Mack 1,000 gpm pumper
	1956	Ford 65' aerial ladder
	1978	Chevrolet van

Erma Fire Company

Active Volunteers: 30

Calls necessitating detachment of mobile unit:	1977 - 94
	1976 - 92
	1975 - 81

Mobile equipment:	1962	Ford 750 gpm pumper
	1976	Ford 1,000 gpm pumper
	1977	Ford 1,000 gpm pumper
	1976	Ford emergency van

SOURCE: Chiefs of respective fire companies.

equipment consists of the following vehicles; all of which are manufactured by Ford Motor Company:

5	1978 patrol cars
1	1977 van
2	1977 patrol cars
1	1977 detective 's car
1	1975 patrol car

Shown on Plate 45 are reported offenses for the Township of Lower for the years 1974 through 1976. The "total reported offenses" statistic represents all crimes included within the State's crime index. New Jersey has adopted a uniform reporting system compatible with that used nationwide. As a result, a number of crimes (such as non-atrocious assault, larceny of less than \$50.00, etc.) are not reflected. In any event, it is evident that the level of criminal activity in the township has decreased between 1974 and 1976. Interestingly, this trend has occurred despite the fact that Cape May County, the Southeast Region and the entire State of New Jersey have exhibited increases in criminal activity.

RESCUE SQUAD AND EMERGENCY FIRST AID SERVICE

Residents of Lower Township are provided emergency first aid service by the Lower Township Rescue Squad which has its headquarters at Main Street and Georgia Avenue in the Villas. A substation is maintained at Race Track Drive and Town Bank Road. The squad currently has a membership of 15 to 18 active volunteers and 3 to 4 dispatchers who are paid by the C. E. T. A. program. In addition, a doctor is kept on call to provide medical care for minor injuries not requiring hospitalization. The squad maintains a 1958 Chevrolet crash truck, a 1972 Oldsmobile ambulance, a 1976 Chevrolet van and two 1977 Ford modular ambulances. With the exception of Diamond Beach, which is covered by Wildwood Crest, and the Shawcrest Road area in the northeast portion of the township, which is covered by Rio Grande, the squad serves the entire township.

In 1977, there were 2,061 calls necessitating the dispatchment of a mobile unit. This represents a 7.4 percent increase over the 1,920 calls responded to in 1976. Emergency cases requiring professional medical treatment are taken to Burdette Tomlin Memorial Hospital, located in Cape May Court House.

MUNICIPAL BUILDING

The present Lower Township municipal building is located on Seashore Road, near its intersection with Academy Road. The main building contains offices for the Township Clerk, Tax Collector, Treasurer, Mayor, Township Committee and Public Works Department as well as a computer room and a separate room utilized by the Board of Health and a receptionist. There are two trailers annexed to the site: one houses the Tax Assessor and the other houses the Construction Official, Zoning Officer and

PLATE 45

UNIFORM CRIME STATISTICS
1974-1976

MAJOR REPORTABLE OFFENSES

	<u>1976</u>	<u>1975</u>	<u>1974</u>
LOWER TOWNSHIP REPORTED OFFENSES:			
<u>Violent Crime</u>			
Murder	1	1	0
Robbery	2	3	2
Rape	1	0	4
Assault	3	10	10
<u>Non-Violent Crime</u>			
Breaking and Entering	261	305	321
Larceny and Theft	511	394	479
Auto Theft	26	18	35
Total Reported Offenses:	815	731	851
<u>Estimated Population:</u>	11,360	11,275	11,135
<u>Rate Per 1,000 Population</u>			
Lower Township	71.4	64.8	76.4
Cape May County	86.4	75.7	82.5
Southeast Region*	57.1	54.6	52.1
State of New Jersey	53.3	50.6	47.2

* For purposes of further crime data analysis, the New Jersey State Police Uniform Crime Reporting Unit divides the state into geographic regions based upon location, general character, and the presence of major urban cores within individual counties. Included along with Cape May County in the Southeast Region are Atlantic, Ocean, Cumberland, Monmouth and Salem Counties.

Planning Board office. The facilities of the public works department are also located at the site. Upon completion of a new municipal office building at the municipal complex on Bay Shore Road, all township offices will be relocated there. This is expected to have occurred by early in 1979.

PUBLIC WORKS

Located on Seashore Road, at the present site of the municipal offices, are the garages of the public works department. The department employs eight (8) year-round employees including one superintendent, one foreman, one equipment operator and five laborers. In addition, there are currently eighteen (18) employees hired through the federal Comprehensive Employment Training Act (C.E.T.A.) program. Under a separate title of the C.E.T.A. program, high school students were employed during the summer months to maintain township beaches. The department is responsible for maintaining public buildings and grounds, as well as for road maintenance and minor repairs, beach maintenance, bulk trash pickup, maintenance of the storm drainage system, and, upon directives from the health department, cleaning of vacant lots. An inventory of the department's mobile equipment is presented on Plate 46.

SANITATION DEPARTMENT

Until recently, all garbage and trash removal within the township was provided by private scavenger service. Lower Township has, however, purchased three Shu-Pak trash trucks, each with a 29 cubic yard capacity, and now provides such service to residential properties throughout the township. Five equipment operators are employed to operate the one-man trucks. The equipment is designed so that the driver may efficiently load refuse into openings on the side of the truck.

Solid waste is removed to a privately owned landfill located in Middle Township which, according to the Cape May County Municipal Utilities Authority, had a five (5) year life expectancy as of January, 1976.

PUBLIC WATER AND SANITARY SEWERAGE FACILITIES

Public water and sanitary sewerage service are each provided to limited areas within Lower Township by the Lower Township Municipal Utilities Authority.

Indicated on Plate 47 are areas served by sanitary sewerage as well as the locations of the treatment plant and pumping stations. It should be noted that the sewerage lines in the area south of the Cape May Canal and adjacent to the City of Cape May (Schellenger's Landing) are maintained by the township; however, effluent generated from this area is treated by the City of Cape May plant. The Lower Township treatment plant, located off Bay Shore Road north of its intersection with Tabernacle Road, has the capacity to treat 3.5 million gallons of effluent per day. Once treated, it is directed to a man-made ditch which leads to Cox Hall Creek and empties into the Delaware Bay.

PLATE 46

PUBLIC WORKS DEPARTMENT INVENTORY OF
MOBILE EQUIPMENT

1976	Ford dump truck with 8 seat crew cab
1975	Ford dump truck
1970	Ford dump truck
1969	Ford dump truck
1966	Ford dump truck
1965	Ford dump truck
1973	Cub tractor with sickle bar
1972	Cub tractor with rotary
1971	Ford loader
1967	John Deere loader
1971	Wayne sweeper
1961	M. B. sweeper
1976	Ford pickup
1969	Ford pickup
1972	Mercury stationwagon

SOURCE: Lower Township Public Works Department

As noted in the Sewerage System and Wastewater Treatment Plant, 1977 Status Report prepared by Van Note-Harvey Associates, October 1977, there were 8,165 sewerage connections in 1977. These are broken down as follows:

Residential	7,193
Apartment	666
Commercial	186
Travel Trailers and Campsites	120 (equivalent units)
	<u>8,165</u>

Additional connections are also provided to tenants at the Cape May County Airport Industrial Complex.

During the months of July and August of 1977, the plant treated an average daily flow of 1.84 mgd although the peak flows reached 2.08 mgd. Of the 1.84 mgd figure, approximately 0.07 mgd were generated by the airport industrial complex. Based on the 1977 average daily flow, plus the expected additional average daily flow from future sewerage connection commitments (1.05 mgd, including 0.4 mgd, or 1290 units, for Diamond Beach alone), the Status Report concludes that the existing treatment plant has the capacity to accommodate between 300 to 500 additional residential dwelling units. The report recommends liaisons between the Planning Board and the MUA so that future proposals which would necessitate sewer commitments may be evaluated in light of capacities.

On a regional level, plans are presently being developed by the Cape May County Municipal Utility Authority to construct two sewerage treatment plants in the vicinity of Lower Township. One plant, to be located at the site of the old Cape May treatment plant off Sunset Boulevard, is expected to serve Cape May, West Cape May and Cape May Point. Lower Township is not included in the proposed service area. Based on a projected 1990 maximum summer weekend flow, that plant is expected to have a design capacity of 3.0 mgd. It should be noted that this capacity is currently being contested by the State Department of Environmental Protection. Because of the environmental sensitivity of the area, the Department would like to limit the proposed treatment capacity to that sufficient to meet the needs of the existing population. Initially, effluent will outfall into the Delaware Bay. However, upon completion of a new treatment plant to be located in the Wildwoods, effluent will be transferred to an ocean outfall. Although the service area of this proposed new plant has not yet been finalized, it is expected to service Wildwood Crest, Wildwood, North Wildwood and perhaps parts of Lower and Middle Townships in addition to Cape May, West Cape May and Cape May Point.

Shown on Plate 48 are the areas currently served by public water along with the locations of wells and standpipes. There are currently three wells which provide the system's supply of water. Well #1 has a rated capacity of 700 gallons per minute (gpm), well #2 is rated at 500 gpm and well #3 is rated at 1,000 gpm. Water is pumped into either standpipe #1 or #2, which have storage capacities of 0.132 and 1.45 million gallons, respectively, and gravity fed throughout the distribution system.

As documented in Water System and Wells, 1977 Status Report prepared by Van Note-Harvey Associates, December, 1977, there were approximately 2,300 connections to the water distribution system in 1977 which produced an average demand of 0.967 million gallons per day (mgd) with a maximum demand of 1.45 mgd during the month of July. The Status Report concludes by stating that the water system has the capacity to serve its present customers as well as the ability to accommodate approximately 645 additional residential dwelling units.

LIBRARY FACILITIES

Although a library is not presently located in Lower Township, its residents have full benefit of the County's main library facilities located in Cape May Court House. In addition to lending books and providing research resources, the library has meeting rooms available for various County, civic and social groups. The County library system does provide residents of Lower Township with access to books through its bookmobile program. The bookmobile spends an entire day at two locations within Lower Township: near the Villas Post Office and at the North Cape May Shopping Center. An additional service provided to senior citizens of the township are the "mini library" services provided at both the Millman Center and at the County offices located in the airport complex.

RECREATION

As a means of determining the adequacy of local parks and recreational facilities, the National Recreation Association sets an overall standard of ten (10) acres of municipally owned parks and recreational space for every one thousand (1,000) persons. However, sufficient acreage alone does not automatically insure that a municipality's public recreational and open space needs will have been met. The location, distribution and type of acreage is often more important than the absolute total. Additionally, recreational needs will vary widely from community to community based on: population density and housing types; age, income, social and other characteristics of the population; and public preference.

Lower Township contains several sizeable tracts of Federal, State or County owned open space. Higbee's beach, south of the Cape May Canal, is currently being acquired under Green Acres by the State of New Jersey and will be used by the Division of Fish and Game for wildlife management. To date, 292 acres out of an eventual 433 have been acquired. Fishing Creek County Park, which straddles Middle and Lower Townships, consists of a total of 5,000 acres, of which approximately 550 are actually located within Lower Township. Additionally, a lighthouse/museum and park located adjacent to Cape May Point is maintained by the State of New Jersey. Finally, considerable wetland acreage exists within Lower Township, much of which is owned either by the State of New Jersey or by the U.S. Coast Guard.

Lower Township's municipally owned park and recreational facilities consist of a senior citizens activity center, the Millman Center, located on Bayshore Road; a 1.5 acre municipal park with tot lot and picnic facilities adjacent to the Lower Township Municipal Utilities Authority; Mulligan Field, a six (6) acre site on Bates Avenue containing several playing fields; and the municipal pool in North Cape May which is currently unusable. Vincent Smith Memorial Field, a two (2) acre Little League baseball field, is privately owned but available for use by the public. These facilities, as well as the conservation areas described in the preceding paragraph are presented on Plate 49.

Township officials have applied for Green Acres developments funds to permit the reconstruction and restoration of the municipal swimming pool; the construction of tennis courts, a basketball court and a tot lot at the new municipal recreation center on Bayshore Road; the construction of a baseball field, a football/soccer field, tennis courts and basketball courts on five (5) acres of land adjacent to the Canal; the upgrading of existing facilities and addition of new facilities at Mulligan Field; and the upgrading of Vincent Smith Memorial Field. In addition, funding is sought for the acquisition of 252 acres of beach and wetlands in the South Cape May area of Lower Township and, in 1979, for the acquisition of eight (8) separate neighborhood tot lot sites which, when completed, will comprise a total of six (6) acres distributed throughout the township. When these acquisition and development projects are completed, Lower Township's inventory of parks and recreational facilities will be considerably improved.

CONCLUSION

The Community Facilities study documents the present levels and distribution of facilities and services among residents of Lower Township. In general, the locations of such facilities should correspond with population centers in order that they may be readily available and optimally utilized. Certain community facilities, such as public water and sewer determine areas of and capacities for future growth. With this relationship between community facilities and land use taken into account, recommendations for new or expanded facilities will be discussed as the specific recommendations of the Land Use Development Plan are formulated.

PART II:
THE LAND USE
DEVELOPMENT PLAN

INTRODUCTION

The desire of a municipality to provide for development, whether of residential, commercial or industrial uses, must be evaluated against a variety of planning factors. Benchmark considerations to be used in establishing a municipality's ability to develop are the capacities and limitations dictated by the natural environment. Environmental data is readily available for use by a municipality during the planning process. The Soil Conservation Service provides information regarding soil types, including ratings of soils as to their appropriateness for different types of community development. Additionally, the U. S. Geological Survey provides topographic information. Geologic information is provided by the New Jersey Department of Environmental Protection. In formulating the Land Use Development Plan for a municipality, the available environmental data must be documented and evaluated, at least to the extent that such information is available and applicable.

In acknowledging natural environmental constraints, a viable Plan must also recognize the right of people to live within that environment. There is no argument against the contention that development in any form has an impact on the environment, nor is there any argument against the contention that people need a place to live and work. Nevertheless, a balance can be achieved in which development is permitted in a manner which creates more positive impacts to the environment than negative ones. Clearly it makes no sense to permit development in areas where there is insufficient water available for use, where drainage difficulties will result or where pollution of the groundwater supply through improper septic effluent treatment will occur. Often, it is possible to expand the ability of the environment to absorb development with the provision of certain community facilities, such as public water and public sewerage. These facilities offset existing environmental limitations, such as the inability of the soil to accommodate individual septic systems. However, the ultimate capacities of any man-made water or sewerage systems are dependent upon the natural limitations of the larger region. Thus, these facilities simply permit some flexibility in the treatment of physiographically different areas within a single municipality or region. In addition to public water and sewerage systems, local recreational needs, schools, fire, rescue and police protection and improvements to the local road network must also be considered both in terms of their capacities and limitations to absorb development and in terms of the impacts that development proposals contained in the Land Use Development Plan may be expected to have.

The importance to the planning process of delineating capacities and limitations is not new; indeed this determination is a basic pursuit of a comprehensive planning program. Recent judicial, legislative and administrative mandates that each municipality provide for a diversity of housing types and sizes has affirmed the importance of evaluating all relevant data to determine what can, in fact, be done, what cannot be done, and what can be done only if other actions are taken simultaneously.

Planning may be viewed as a contest of often opposing issues which must be balanced to protect the "general welfare." In the process, attention must be given to safeguarding both private property interests and rights and the interests of the public at large. As Judge Leahy of the Superior Court of Somerset County, New Jersey, has observed, accommodating such interests involves a contest of rights:

...the right of minorities and those of limited income to fair housing opportunities; the right of a landowner to a reasonable use of his private property; the right of a community to plan and zone for its future as it envisions that future should ideally be; and the right of all to have ecological necessities recognized and respected... The question is not one of right against wrong, but one of right against right - each worthy of legal recognition and of legal protection.

SUMMARY OF BACKGROUND STUDIES

CAPACITIES VERSUS LIMITATIONS

As a prelude to the presentation of the Land Use Development Plan, it is helpful to review the technical information contained in the Background Studies. The extent to which Lower Township may develop in the future is dependent upon a number of considerations: limitations imposed by physical characteristics; current land use and the character of the development which has taken place to date and existing infrastructure. Information related to each of these concerns is found within the individual analyses of the Background Studies, which collectively provide a description of the township as it exists today. Such information is the basis for the policy decisions explicit and implicit in the Land Use Development Plan.

It is the purpose of the following paragraphs to examine those factors which impose limitations upon the current growth potential of the township and to relate established capacities and/or limitations to future development as determined by the Plan.

EXISTING LAND USE

From an existing land use viewpoint, the capacity of Lower Township to absorb new development is directly related to the availability of vacant and developable lands. As of June, 1978, approximately 6,777 acres, or 35.5% of the township's 19,078 acres, were devoted to what are generally considered to be developed land uses. In addition, roughly 5,234 acres in the township were classified as wetlands, unsuitable for most forms of development. 7,067 acres were classified as vacant, vacant wooded or agricultural lands. Of these 7,067 acres, approximately 3,531 acres, in addition to the 705 acres classified as "public uses and public utilities," are owned by Federal, State, County or municipal governments or authorities and may be assumed to be "developed" for the purposes of land use planning. Therefore, an optimistic conclusion is that 18.5% of Lower Township's total land area, or 3,536 acres, is actually available for development in the future.

As evidenced throughout the Background Studies, numerous environmental, transportation and community facilities characteristics of Lower Township impose restrictions on the extent to which these "developable" lands can absorb growth. Additionally, further limitations on the availability of land for new development may result from the exercise of legitimate policy decisions concerning the preservation of agricultural lands or open spaces.

Existing residential development in Lower Township has taken place in what may roughly be described as four growth nodes: the Villas, North Cape May, Erma,

and south of the Canal. The Villas is substantially developed and unlikely to experience much in the way of new development, particularly in view of the strip commercial development that has proliferated along Bay Shore Road, diminishing both the aesthetic value of the area and access to the residential neighborhoods. While North Cape May is also substantially developed, some additional development could occur both within the developed area and on the perimeter. There is room for additional apartment and commercial development in the large vacant area north of the Cape May - Lewes Ferry Approach Road, south of Town Bank Road and east of Bay Shore Road. Since strip commercial development has already appropriated the west side of Bay Shore Road opposite the vacant area, any development plans for the east side should seek to minimize the negative impacts of adding more commercial traffic. Residential development in Erma is more spread out and less organized than it is in Villas and North Cape May. Considerable residential development has occurred along Route 9 and just south of the Cape May County Airport. However, commercial uses to serve this area are few and unconsolidated. South of the Cape May Canal, the residential development that has occurred is relatively sparse and agricultural in character; there is no significant commercial development.

Commercial development, as noted above, is concentrated along Bay Shore Road in the Villas and North Cape May areas, and also at Schellenger's Landing; it is scattered along Route 9. A few commercial uses exist in the Diamond Beach area, as well. Industrial development is confined to the Cape May County Airport, which houses a number of such uses, and a few other scattered locations. Numerous marine-oriented commercial and industrial facilities exist along the periphery of the wetlands, in the Shawcrest mobile home park area, and at Schellenger's Landing.

Schellenger's Landing and Diamond Beach are both worthy of special planning considerations. Each has the potential for increasing the flow of tourist dollars to residents and entrepreneurs in Lower Township. The Diamond Beach area is only partially developed but needs to have its vacant areas organized into some overall scheme which will maximize the use of the available land and minimize the negative impacts of coastal development. The Schellenger's Landing area requires extensive redevelopment. It is plagued by traffic and circulation problems as well as generalized blight. However, the area has considerable potential in view of its unique location and character.

Development of available lands in Lower Township should, to the extent possible, both complement the existing land use pattern and help to counteract some of its negative impacts. In addition, the presence of historic sites, wooded areas and agricultural lands, as documented in the Background Studies, should be given serious consideration in the delineation of land use and zoning districts.

PHYSICAL CHARACTERISTICS

There are four principal environmental factors in Lower Township which affect the development potential of vacant and otherwise developable lands. These four factors are wetlands, flood hazard areas, groundwater resources, and soil limitations for such purposes as septic filter fields, dwelling foundations, and the construction of roads and parking lots. Wetlands and flood hazard areas pose the most obvious and immediate development limitations in light of State and Federal regulations controlling the use of lands so classified. During a storm, much of Lower Township is inundated through the combined effects of stormwater runoff, stream overflow, and tidal flooding. Unfortunately, considerable development has already taken place in areas which habitually flood in Lower Township.

Even in areas served by public water, residents of Lower Township are dependent upon the groundwater resources of the underlying geologic formations. As noted in the section on geology, Lower Township's wells, both public and private, tap the "Holly Beach," or water table aquifer, the Cape May Formation, a shallow artesian aquifer, and the Cohansey Sand, also an artesian aquifer. While the supply of water in the water table aquifer is replenishable, assuming that excessive development does not pave large portions of the region, the aquifer is vulnerable to contamination both from salt water infiltration and from surficial pollutants. The artesian aquifers, which are non-replenishable, are more vulnerable to the long range impacts of development due to the difficulties of estimating and protecting future groundwater supplies. While there is a difference of opinion among planners, engineers and political decision makers as to the implications of the available information on groundwater resources in Lower Township and in Cape May County, a conservative policy would base future development densities on the potential for annual recharge of the water table aquifer, while attempting to protect it from contamination through improper installation of septic filter fields or disposal of other pollutants. The artesian aquifers can then be used to supplement the water table aquifer during drought years and to provide a reserve for the future. The Cape May County Planning Board has calculated the total growth potential for the entire County on this basis and has allocated the remaining margin for future development among the County's sixteen (16) municipalities in accordance with local land use policies and other environmental and developmental constraints. According to the County's plan, Lower Township had, at the end of 1977, a remaining growth margin of 2,127 dwelling units.

The information on soils contained in the Physical Characteristics section of the Background Studies indicates that large portions of Lower Township are severely limited for septic filter fields and, due to a high water table, are also severely limited for the construction of foundations for low buildings, local roads and parking lots.

COMMUNITY FACILITIES AND UTILITIES

The adequate provision of essential community services and facilities is vital to the balancing of development in a municipality. The extent to which existing services and

facilities are capable of accommodating future growth is an important consideration in planning for the impacts of a Land Use Development Plan.

As noted in the Community Facilities and Utilities Services section, the Lower Township School System, which accommodates grades K-6, is currently deficient in space, based on standards set by the State Department of Education establishing the functional capacities of schools. This deficiency will be offset partially, but not entirely, by the construction of a new twelve (12) room school building at the site of the new municipal complex on Bay Shore Road. The Lower Cape May Regional School System has an excess capacity of 157 students in the Teitelman School and of two (2) students in the high school. Thus, the ability of the schools to absorb new students is unevenly distributed among the various grades.

Another measure of capacities versus limitations for new development is the availability of public water and sewerage facilities which can augment the environmental capabilities and limitations of the township. As noted in the Community Facilities and Utilities Services section, public water in Lower Township is available through the Municipal Utilities Authority, but only in North Cape May. The analysis indicates that approximately 645 additional residential dwelling units can be accommodated by the existing water system. Lower Township MUA sewerage and sewage treatment facilities can accommodate between 300 and 500 new residential dwelling units, or their equivalents, over and above its present commitments. These stated capacity margins assume single family residential development. Obviously, the construction of smaller dwelling unit types, such as apartments, or the use of the remaining capacity for industrial or commercial enterprises may extend or limit the number of units to be accommodated.

Other community facilities worth commenting on in terms of future development are fire and rescue service, police protection, solid waste disposal, library and recreational facilities.

In terms of fire protection, the intensively developed areas of the township are well served. However, those areas east of the Garden State Parkway and south of the Canal which are not served by resident fire companies will become increasingly vulnerable as they develop; neighboring municipalities upon which they now depend for service may be less able or less willing to provide such protection in the future.

The relatively high crime rate of Lower Township as compared to the rest of the southeast region and to New Jersey as a whole can be assumed to reflect the difficulties associated with a transient summer population, as evidenced by the higher crime rate for Cape May County as a whole. Any future development, particularly that which may stimulate the tourist economy, will require additional police services, at least in terms of equipment and manpower.

While solid waste disposal is statutorily a County responsibility, it is nevertheless a relevant consideration in formulating municipal plans and policies. While the Cape May County Board of Chosen Freeholders has not yet established its policy with respect to regional solid waste management, Lower Township officials would be well

advised to maintain communication with the County as to the future solid waste disposal needs of the township.

At present, library facilities are extremely limited in Lower Township. As noted, the County bookmobile does service both Villas and North Cape May, and mini-libraries are provided at the Millman Center and at the airport. As Lower Township's population grows over the next decade, municipal officials may wish to consider the provision of a library facility either in the new municipal complex, in one or more of the schools, or in a separate building.

Open space conservation areas in Lower Township are considerable. The Higbee's Beach State Green Acres acquisition in combination with the County park in the northwest portion of Lower Township and the wetlands areas, which are constrained from development by both natural and regulatory forces, total some 6,000 acres of permanent open space. Lower Township's greatest needs are for active recreational facilities, which are severely deficient at this point in time. However, township officials are aware of the deficiency and are actively pursuing Green Acres funding for the acquisition and development of recreational areas throughout the township.

TRAFFIC AND CIRCULATION

The capacity and design of the road network within the township is an important consideration in determining the appropriate location and intensity of future development. Many of Lower Township's roads are deficient in terms of their existing rights-of-way and paved widths. Additionally, numerous accidents have been identified at points in Lower Township where the design of roadways and/or the location of development has produced conflicts. Most of the roads on which such conflicts occur are part of the State and County road systems and, as such, are beyond the direct control of Lower Township's municipal officials. However, based on the Land Use Development Plan for Lower Township, recommendations can be made to the State and County as to appropriate road improvements and transportation policies.

REGIONAL CONSIDERATIONS AND POPULATION

In general, Lower Township's existing land use policies are consistent with those of the immediately adjacent communities which would be impacted by them. Thus, the consideration of any changes to the overall development scheme for Lower Township must recognize the existing land use pattern and zoning districts both of Lower Township and of its neighbors.

Planning difficulties arise in juxtaposing growth limits for Lower Township set by the Cape May County Planning Board and State calculations of Lower Township's share of its region's projected low and moderate income housing need in 1990. Specifically, the observation of County growth ceilings will eventually produce a scarcity in the

supply of available housing. This scarcity will make affordable housing unattainable in the future, even for households at higher than moderate income levels. While it may be impossible to resolve the conflicting policies of the County and State, they must be weighed in the formulation of Lower Township's Land Use Development Plan.

The analysis of Lower Township's population trends, particularly with respect to age and income, indicates that a major planning task facing municipal officials is the balancing of widely disparate needs in terms of recreation, education and health facilities within the limits of the township's fiscal capabilities, particularly since the large elderly population is likely to resist any increase in the property tax burden.

IMPLICATIONS

The extent to which Lower Township can and will develop in the future is thus dependent upon a number of considerations. It is the purpose of the several Background Studies to document the existing capacities and limitations of the township. While these studies have been presented separately under individual topic headings, it is important that they be reviewed together in order to reach conclusions regarding the ability of Lower Township to absorb development. For it is within the boundaries established by these composite capacities and limitations that the Lower Township Planning Board imposes its goals and policies with respect to the direction and nature of future growth.

THE PLAN

GOALS AND OBJECTIVES

The Land Use Development Plan for Lower Township presented on Plate 50 is the result of the application of certain goals and objectives to the potential for development of the township outlined in the Background Studies. These goals and objectives are substantially consistent with those stated in the Purpose to the Municipal Land Use Law, as given in N. J. S. A. 40:55D-2:

To encourage municipal action to guide the appropriate use or development of all lands in this State, in a manner which will promote the public health, safety, morals, and general welfare;

To secure safety from fire, flood, panic and other natural and man-made disasters;

To provide adequate light, air and open space;

To ensure that the development of individual municipalities does not conflict with the development and general welfare of neighboring municipalities, the county and the State as a whole;

To promote the establishment of appropriate population densities and concentrations that will contribute to the well-being of persons, neighborhoods, communities and regions and preservation of the environment;

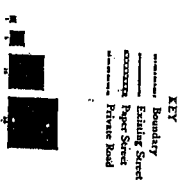
To encourage the appropriate and efficient expenditure of public funds by the coordination of public development with land use policies;

To provide sufficient space in appropriate locations for a variety of agricultural, residential, recreational, commercial and industrial uses and open space, both public and private, according to their respective environmental requirements in order to meet the needs of all New Jersey citizens;

To encourage the location and design of transportation routes which will promote the free flow of traffic while discouraging location of such facilities and routes which result in congestion or blight;

To promote a desirable visual environment through creative development techniques and good civic design and arrangements;

To promote the conservation of open space and valuable natural resources and to prevent urban sprawl and degradation of the environment through improper use of land;



PROPOSED LAND USE DISTRICTS

- C Conservation
 - R1 Single Family Residential
 - R2 Single Family Residential
 - R3 Moderate High Density Residential
 - R4 High Density Residential
 - R5 Multi Family Residential
 - R6 Multi Family Residential
 - R-B Residential Business
 - GB General Business
 - MD Marine Development
 - I Industrial
- MH Motel-Hotel
- HR Hotel-Resort

Open Space

To encourage planned unit developments which incorporate the best features of design and relate the type, design and layout of residential, commercial, industrial and recreational development to the particular site;

To encourage senior citizen community housing construction consistent with provisions permitting other residential uses of a similar density in the same zoning district; and

To encourage coordination of the various public and private procedures and activities shaping land development with a view of lessening the cost of such development and to the more efficient use of land.

Specific objectives which have guided the evolution of the township's land use policies include:

The desire to promote good site design practices in commercial areas in terms of entrances, exits, landscaping, front yard setbacks, signs and lighting;

The desire to integrate and organize new residential development into cohesive neighborhoods using development techniques and densities compatible with established residential development;

The desire to consider the physical and infrastructural limitations of the land to support development in determining the most appropriate locations for various kinds and intensities of land uses;

The desire to insure that all new housing will be served to the extent possible by sufficient commercial, recreational, educational, and transportation facilities, and be accessible to employment opportunities, in keeping with sound planning principles; and

The desire to preserve open space and farmland below the Cape May Canal to the maximum extent possible, respecting the environmental limitations of that area to absorb development and recognizing the long-range benefits of concentrating municipal services and facilities in more densely developed areas north of the Canal.

Lower Township's Land Use Development Plan integrates the goals and policies given above into a system of spatial relationships among the various proposed land uses,

giving due consideration to existing neighborhoods, to the municipality as a whole, and to the region. The applicable recommendations of the State Development Guide Plan, of the Cape May County Master Plan and of the master plans of adjoining municipalities have been incorporated in the formulation of the plan.

As indicated on the Land Use Development Plan, a total of thirteen (13) land use districts are proposed to be created, with campground development to be permitted as an option in a portion of one of the residential districts and certain other areas recommended to be held or acquired for permanent public open space. Plate 51 indicates the estimated acreage intended to be devoted to each land use category. In the following paragraphs, the rationale behind the Plan and the densities and land uses recommended for each district are presented.

CONSERVATION AND OPEN SPACE AREAS

The Conservation district represents the largest single land use category proposed. It encompasses nearly thirty-one (31) percent of the total land area of Lower Township, or 5,876 acres, most of which have been designated as coastal wetlands. It should be noted that much of the district consists of lands which are already owned by the Federal, County or State government.

Since wetlands are severely constrained in terms of the degree and kind of development which they can physically sustain, based on their critical importance to the food chain and their susceptibility to frequent flooding, the type and intensity of land use proposed for them must respect such limitations while permitting reasonable use of private property. Recommended permitted land uses for this district would include low density water-related activities such as marinas, boat mooring slips, boat launching ramps, farming and recreation. These land uses are consistent with the types of activities which are permitted in wetlands areas and regulated by the Department of Environmental Protection under the Wetlands Act and Order described in the Background Studies. Development density requirements for this district should be expressed in terms of the maximum percentage of the lot to be covered by impervious surfaces, rather than as a minimum lot size, and such density should be extremely low (five (5) to fifteen (15) percent of the lot area).

In addition to the areas which are recommended to be zoned for Conservation purposes as described above, the Land Use Development Plan delineates large "open space" areas, some of which lie within the proposed Conservation district and some of which are in other districts. These areas, it is hoped, will remain or ultimately become publicly owned and be permanently reserved from development.

RESIDENTIAL AREAS

All of the areas proposed for residential development, taken together, comprise over fifty-five (55) percent, or 10,569 acres, of Lower Township's total land area. There are seven (7) types of residential land use districts delineated in the Plan, including one district which combines both residential and business uses. Recommended densities are based on a number of factors, including the density of existing residential development within the proposed district, the physical capacity of the land to support individual wells and on-site septic systems in the absence of public sewerage and water and the desire to concentrate population growth near existing nodes of development to increase the efficiency with which municipal

PLATE 51
 LOWER TOWNSHIP
 LAND USE DEVELOPMENT PLAN
 DISTRICT ACREAGE DISTRIBUTION

<u>Land Use Category</u>		<u>Approximate Acreage</u>	<u>Percent of Total</u>
C	Conservation	5,876	30.8
R-1	Single Family Residential	2,518	13.2
R-2	Single Family Residential	4,007	21.0
R-3	Moderate High Density Residential	3,816	20.0
R-4	High Density Residential	38	0.2
R-5	Multi-Family Residential	95	0.5
R-6	Multi-Family Residential	38	0.2
R-B	Residential Business	57	0.3
GB	General Business	439	2.3
MH	Motel-Hotel	19	0.1
HR	Hotel-Resort	95	0.5
MD	Marine Development	515	2.7
I	Industrial	1,565	8.2
TOTAL:		19,078	100.0%

SOURCE: Gershen and Coppola Associates, planimetric measurement of Land Use Development Plan, 1979.

services can be provided. Due to the generally high water table present on most vacant, residentially designated land and the concomitant poor suitability of the soils for septic disposal, most future residential development will have to take place at fairly low gross densities. However, clustering can be encouraged up to a point, even in areas served with septic fields and private wells. This will permit greater flexibility in subdivision design and allow the reservation from development of environmentally sensitive areas.

The "R-1" district, which encompasses approximately 2,500 acres of land south of the Cape May Canal, or 13.2% of the total land area of Lower Township, is designed to be developed for single family residential purposes at a gross density of one dwelling unit per acre, based on the physical constraints noted above and the relative inaccessibility of the area to municipal services and facilities. Furthermore, it is an expressed goal of the Lower Township Planning Board that the area south of the Canal should retain its rural character as it develops.

The "R-2" district, comprised of twenty-one (21) percent, or 4,007 acres, of Lower Township's land area, is also proposed to be developed at a low density (one dwelling unit per acre without public sewerage and two per acre with public sewerage) again based on the physical and infrastructural capacities and limitations of the lands within it. However, it is anticipated that a greater variety of uses would be permitted here than in the "R-1" district. For example, certain institutions requiring considerable land area as well as the superior access of much of the "R-2" district could be permitted on lots of sufficient size to allow compatibility with surrounding residences. Campgrounds are intended to be permitted in certain portions of the "R-2" district to take advantage of the superior locational characteristics of much of the land along Route 9 while recognizing its physical limitations. Campgrounds, if properly designed, do not drastically alter the visual character of low-density areas nor do they represent a permanent commitment to a particular form of development. They are also one way in which a mainland community can take advantage of its proximity to the more popular island resort communities abutting it.

In both the "R-1" and "R-2" districts, a restrained use of the residential cluster form of development would maximize flexibility of design, in light of the considerable physical and infrastructural limitations of these areas, and would permit the reservation of some land for ballfields, tot lots or tennis courts for the use and enjoyment of persons within subdivisions, reducing the pressures of new development on existing and currently proposed recreational facilities.

The "R-3" district encompasses the bulk of the existing single family residential development within Lower Township, including that which has already taken place in Villas, Erma and North Cape May, and comprises another twenty percent (20%), or 3,816 acres, of the township. The recommended density of development for the undeveloped portions of the "R-3" district is approximately six (6) dwelling units per acre, consistent with the density of existing development. It is intended that all lots in this district be served by public sewerage. Where tracts

of fifteen (15) or more acres exist or can be assembled, it is recommended that townhouses and garden apartments be constructed as an alternative to single family homes.

The "R-4" district includes those properties in Lower Township which abut Wildwood Crest and which are intended to be developed in a manner and at a density (approximately twenty-six (26) units to the acre) which would complement the adjoining residential development within Wildwood Crest. Single and two-family dwellings are encouraged, as well as townhouses where tracts of five (5) or more acres can be assembled. The "R-4" district, as proposed, represents only two percent (2.0%), or 38 acres, of Lower Township.

The "R-5" and "R-6" districts, which encompass seven percent (7.0%) of the township, or 133 acres, would provide for multi-family residential development in mid-rise or high-rise structures at relatively high densities. The recommended intensity of development in these areas is eight (8) units per acre in the "R-5" or mainland multi-family residential district and twenty-six (26) units per acre in the "R-6" or island multi-family residential district; however, it is specifically intended that the coverage by buildings in these districts be kept relatively low to minimize potential flood and tidal storm damage.

Finally, the Residential Business or "R-B" district is intended to accommodate single family residential development at a density not exceeding one (1) dwelling unit per acre in addition to neighborhood commercial uses as accessory uses. Permitted commercial uses would be those oriented primarily to serving the convenience needs of the surrounding residences and residential neighborhoods including, but not limited to, small grocery stores, newspaper stores, barber or beauty shops. Such commercial uses are to be occupant owned establishments employing not more than two (2) non-residents. Public facilities such as firehouses and rescue squads would also be permitted within the "R-B" district. Properties which include a commercial use are intended to be designed and maintained in a manner compatible in scale and general appearance with the existing residences. The "R-B" district encompasses 57 acres, or three percent (3.0%) of the township.

NON-RESIDENTIAL AREAS

An industrial district and four (4) general commercial districts are also proposed for Lower Township. Recommended industrial acreage consists of 1,565 acres, or 8.2% of the township. One portion of the district is proposed in the immediate vicinity of the Cape May County Airport on lands which are close enough to runway approach and departure zones to be affected by the noise and vehicular and air traffic related to the airport, but which would also benefit from proximity to the airport in terms of access, particularly after the County implements the relocation of Fulling Mill Road, construction of the new Airport Road and widening and improvement of Shun Pike Road, as proposed in the Cape May County Planning Board report, Traffic and Transportation, March, 1975. Additional industrial lands are designated south of the Canal in the vicinity of the Magnesite plant, in recognition of existing land uses there. In view of the environmental constraints on the industrial land south of the Canal and the risks of high density development in close proximity to an airport, (*) it is intended that densities in the industrial district be kept relatively low.

(*) As indicated in the Model Land Use and Zoning Ordinance for New Jersey Public Use Airports, prepared in 1977 by the New Jersey Department of Transportation.

Approximately 439 acres, or 2.3 % of the township are to be designated as General Business. The General Business districts are intended to be oriented to the service needs of both local residents and tourists. The areas so designated encompass most of the existing commercial development in Lower Township, including that along Bay Shore Road. For the most part, the lands so designated are characterized by proximity to major County and State roads; it is hoped that, over a period of time, as the demand for commercial space in Lower Township increases, the locational attributes of the developed portions of the General Business districts will encourage their redevelopment. However, for such redevelopment to be effective in overcoming existing parking and circulation problems, particularly along Bay Shore Road, sufficient depth will have to be provided to the district. It is recommended that, as a minimum, up to the rear property lines of lots fronting on Bay Shore Road be designated as General Business. Specific permitted uses would include drug stores, clothing stores, restaurants, small motels, business and professional offices, service stations, banks and bank branches, hardware stores, supermarkets and garden centers. It is intended that future development in currently vacant General Business areas of sufficient size should take the form of shopping centers or planned commercial developments consisting of several interrelated smaller stores oriented to an interior access road. Strict design controls are to be applied to any new development or redevelopment in the General Business districts to ensure safe access, sufficient parking and an attractive visual environment.

It should be noted that the Plan limits commercial development along Seashore Road and Route 9. It is the intent of the Land Use Development Plan to encourage residential development instead, serviced by new access roads to be constructed by developers. Direct driveway access from residences to either of these thoroughfares will be discouraged in the Development Ordinance. In addition, future rights-of-way along these roads will be respected through ordinance controls mandating that a front yard be measured from the proposed right-of-way line rather than the existing line.

Two (2) hotel districts have been proposed for Lower Township. The lower density Motel-Hotel district encompasses existing motels at the intersection of Routes 9 and 109, while the higher density Hotel-Resort area is intended to provide for high rise facilities in Diamond Beach. The Hotel-Resort district will also permit the construction of restaurants and small shops oriented to the convenience of guests but only as accessory uses and only within a principal hotel structure.

Marine Development areas encompass existing marinas and marine-oriented industrial development along Ocean Drive and in the northeast corner of Lower Township adjacent to the City of Wildwood. More intensive marine-oriented development, such as commercial fisheries and related industries, will be promoted in the Marine Development districts than in the Conservation districts. The Marine Development districts include some 515 acres, less than three percent (3.0%) of the township's land area.

All of the commercial areas provided for in the Land Use Development Plan encompass nearly six percent (6.0%) of the total land area of Lower Township, roughly 1100 acres of land, much of which is already developed. The relatively small allocation of vacant land to

commercial usage is intended to promote "retrenchment" and redevelopment of existing commercial properties rather than a continuing extension of the present linear or strip pattern of commercial development along heavily travelled roads.

SPECIAL PLANNING AREAS

As noted in the Summary of Background Studies, there are two areas within Lower Township which merit special planning consideration: Schellenger's Landing and Diamond Beach. Both are highly accessible to tourists during the summer season, but neither area has, as yet, fully exploited the advantages of that access.

It is the intention of this Plan that the Diamond Beach area will be developed with high-rise hotels along the oceanfront, and with general commercial and high density residential uses on the western side of Pacific Avenue. With careful planning, this area could be both an economic and aesthetic asset to Lower Township. However, the realization of its full potential may be inhibited by limitations on the availability of public water and sewage treatment capacity.

It is recommended that a "mini-plan" encompassing the locations of new roads, pedestrian walkways and crossings, open spaces, beach access, street lighting and directional signs be prepared for this area to ensure that future developers can participate in the provision of necessary on-site, off-site and off-tract improvements. The overall circulation system should be a double loop, or modified figure eight, with direct access to and from the loop streets rather than from Pacific Avenue. Buffers should be provided between commercial uses on the west side of Pacific Avenue and existing residential uses adjacent to Wildwood Crest and should include sufficient screening to prevent the residential uses from being overwhelmed by commercial development. A pedestrian walkway system tying residential and hotel-resort uses with the commercial area, and tying all uses with the beach, is as important to the Diamond Beach development scheme as the vehicular circulation system.

Schellenger's Landing requires major traffic engineering improvements affecting both vehicular and pedestrian circulation. The current New Jersey Department of Transportation plan for improving the intersection of Route 9 and Ocean Drive will, when implemented, go far in increasing the safety and efficiency of traffic circulation in the area, although additional measures affecting the southern portion of Schellenger's Landing, such as those suggested by the City of Cape May Planning Board in the City's Master Plan, are also needed. Furthermore, the creation of public parking areas and of pedestrian pathways with overpasses or underpasses to integrate commercial development on both sides of Route 9 is required. These improvements, in conjunction with a coordinated plan for lighting, landscaping and directional signing, will help to increase the value of properties in Schellenger's Landing and encourage new commercial uses and entertainment facilities to locate in the area. The Back Harbor Wharf has particular potential as a location for smaller commercial enterprises, developed along a nautical theme, which could be mutually reinforcing in their ability to attract patrons. A "mini-plan" for this area, as well, is strongly recommended.

IMPACTS OF THE PLAN

POPULATION IMPACTS

While it is impossible to be completely accurate in projecting a municipality's capacity for population growth, it is nevertheless important to ascertain whether or not the Land Use Development Plan provides adequate and well-balanced development opportunities, particularly with respect to housing. Plate 52 estimates the maximum total population and maximum total schoolchild population which would result if every residential district prescribed in the Land Use Development Plan were to be fully developed. However, in order for the projected number of dwelling units to actually be constructed, every residentially planned acre in Lower Township, apart from roads, floodways and utility easements, would have to be developed. Thus, the dwelling unit, population and schoolchild projections indicated on Plate 52 are not actually expected to occur. The numerous environmental and community facility constraints outlined in the Background Studies, the inevitable presence of oversized lots due to design considerations and buyer preference, the use of residentially districted land for institutional or public purposes, the continuation of existing public or other non-residential uses within residential districts and large tracts of publicly owned land in residential districts combine to reduce the extent to which development will take place. However, based on raw calculations, a maximum of 24,132 dwelling units could be absorbed within Lower Township, resulting in an ultimate population of 79,798 individuals with 17,496 schoolchildren. These figures include the population and schoolchildren in existing dwelling units within the proposed residential districts. No attempt is made to separate the remaining development margin from the total development picture, although the fact that most of the existing dwelling units in Lower Township lie within the proposed "R-3" district certainly reduces the potential of that area to absorb new development.

HOUSING AND REGIONAL IMPACTS

State and County estimates of current and future housing needs were presented in the Regional Considerations section of the Background Studies and discussed in light of the Cape May County Planning Board's recommended growth ceilings. The New Jersey Division of State and Regional Planning projects Lower Township's share of the region's low and moderate income housing need to be 1,529 units by 1990. In 1975, the County allocated 7.5% of its remaining growth capacity to Lower Township, or 3,009 new dwelling units over and above what existed in 1974. Normal supply and demand considerations do not permit the resolution of these policies within the framework of Lower Township's municipal planning capabilities, assuming the absence of subsidies. However, the Land Use Development Plan does provide for a variety of housing opportunities, in terms of density and dwelling unit type, throughout the township. It makes no attempt to enforce the County's growth ceiling. Instead, the Plan assigns land uses and densities based on purely local environmental considerations, both physical and infrastructural. Obviously, regional environmental considerations, particularly of water supply, but

PLATE 52

TOTAL DEVELOPMENT PROJECTIONS
LOWER TOWNSHIP LAND USE DEVELOPMENT PLAN
July, 1979

OTE: The following development projections assume full development of all residentially planned acres in Lower Township; they include existing residential development in proposed residential districts.

Proposed Residential District Area	Approximate Gross Acreage	Area For		Approximate Net Acreage	Recommended Maximum Density	Maximum		Maximum Total Projected Population*	Maximum Total Projected Schoolchildren*
		Street, Floodways & Utilities	(25% of Gross)			Total Projected Dwelling Units	Total Projected Population*		
"R-1"	2,518		630	1,888	1.0 d.u./acre	1,888	6,986 @ 3.7 per hh	2,441 @ 1.293 per hh	
"R-2"	4,007		1,002	3,005	1.0 d.u./acre	3,005	11,119 @ 3.7 per hh	3,885 @ 1.293 per hh	
"R-3"	3,816		954	2,862	6.0 d.u./acre	17,172	56,668 @ 3.3 per hh	10,750 @ 0.626 per hh	
"R-4"	38		10	28	26.0 d.u./acre	728	1,966 @ 2.7 per hh	160 @ 0.220 per hh	
"R-B"	57		14	43	1.0 d.u./acre	43	159 @ 3.7 per hh	56 @ 1.293 per hh	
"R-5"	95		24	71	8.0 d.u./acre	568	1,590 @ 2.8 per hh	195 @ 0.344 per hh	
"R-6"	38		10	28	26.0 d.u./acre	728	1,310 @ 1.8 per hh	9 @ 0.012 per hh	
OTAL	10,569		2,644	7,925		24,132	79,798		17,496

Sternlieb, et. al., Housing Development and Municipal Costs, (New Brunswick, N. J.: Center for Urban Policy Research, Rutgers University, 1973).
Multipliers vary based on anticipated household types and sizes.

also of air quality, which form the basis of the Cape May County Planning Board's policy with regard to its ultimate development capacity, should and will place limitations on the ability of Lower Township to grow as planned.

MUNICIPAL IMPROVEMENTS

The implementation of the Lower Township Land Use Development Plan will generate both short-term and long-range community facility needs. To accommodate the short-term needs, the following improvements which are illustrated on Plate 53 are recommended:

1. Municipal parking areas at strategic locations along Bay Shore Road and at Schellenger's Landing. Those along Bay Shore Road, at least, can be created immediately within existing local street rights-of-way by blockading some of the side streets at the rear property line of lots fronting on Bay Shore Road. During the summer season, temporary public parking areas could easily be provided in this manner wherever private facilities appear inadequate. Where more permanent, year-round parking is needed, developers of commercial properties along Bay Shore Road who wish to expand their businesses but lack adequate room to provide the required number of parking spaces on their lots should be encouraged to lease spaces off-tract or to cooperate with other commercial property owners in constructing new off-tract parking areas servicing two or more enterprises.
2. Additional rescue stations in Erma, south of the Canal and Diamond Beach. The station proposed for south of the Canal should service the Borough of West Cape May in return for continued fire coverage in a cooperative agreement between the two municipalities. The Diamond Beach station should also house a police substation.
3. Either a fire sub-station or an improved agreement with the Borough of Wildwood Crest to serve Diamond Beach. The latter alternative is strongly urged to avoid unnecessary duplication of equipment and space in the two municipalities.
4. Consideration by the Board of Education for the purchase of the acreage adjacent to the Maud Abrams and consolidated Schools to accommodate future school expansion needs.
5. Purchase of land in the vicinity of Erma for outdoor recreational space. Green Acres funding may be obtainable for this project. Residents of Erma are not currently served by any reasonably accessible public parks or playfields.

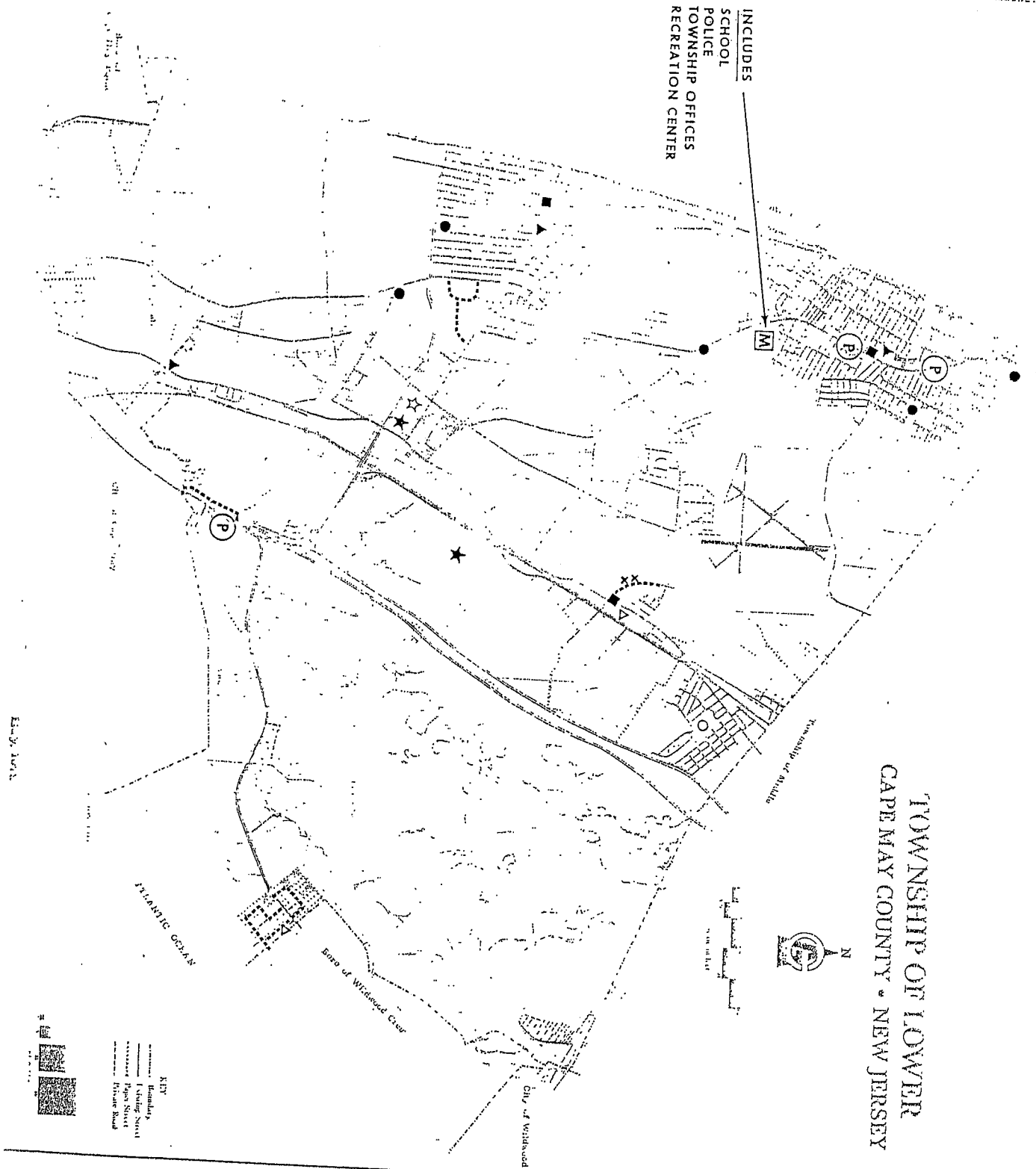


plate 53
EXISTING AND PROPOSED COMMUNITY FACILITIES
AND PROPOSED STREET IMPROVEMENTS

EXISTING PROPOSED

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- MUNICIPAL COMPLEX
- SCHOOL AND SCHOOL PROPERTY
- FIRE
- RESCUE
- PUBLIC PARKING

EXISTING PROPOSED

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- STREET VACATION
- ACQUISITION OF ADDITIONAL RIGHT-OF-WAY AND/OR NEW ROAD CONSTRUCTION
- RECREATION

6. Improvements, including directional signing, lighting, pedestrian walkways and street lighting in both the Schellenger's Landing and Diamond Beach areas. Schellenger's Landing may also require an over or underpass to permit pedestrian crossing of Route 9, in concert with an overall plan for the improvement of traffic circulation in that area.

Current plans for the new municipal complex, school and recreational center on Bay Shore Road as well as for the acquisition and development of additional public recreational areas (to be funded with State Green Acres money), as outlined in the Background Studies, are endorsed.

CIRCULATION IMPROVEMENTS

Most of the roads within Lower Township which are inadequate in terms of their ability to accommodate the traffic volumes assigned to them are under the jurisdiction of the County. In an effort to correct existing deficiencies and to accommodate projected traffic volumes, the County recommends that the following right-of-way widths ultimately be acquired:

- Ocean Drive - 86 ft. right-of-way (43 feet from center line of road)
- Shun Pike Road - 86 ft. right-of-way (43 feet from center line of road)
- Bay Shore Road - 66 ft. right-of-way (33 feet from center line of road)
- Sunset Boulevard - 66 ft. right-of-way (33 feet from center line of road)
- Seashore Road - 66 ft. right-of-way (33 feet from center line of road)
- Fishing Creek Road - 66 ft. right-of-way (33 feet from center line of road)
- Town Bank Road - 66 ft. right-of-way (33 feet from center line of road)
- Jonathan Hoffman Road - 50 ft. right-of-way (25 feet from center line of road)
- New England Road - 50 ft. right-of-way (25 feet from center line of road)
- Stimpson Lane - 50 ft. right-of-way (25 feet from center line of road)
- Tabernacle Road - 50 ft. right-of-way (25 feet from center line of road)
- Fulling Mill Road - 50 ft. right-of-way (25 feet from center line of road)

Where existing rights-of-way are deficient, there are two primary techniques for the acquisition of additional space. One, the dedication process, is accomplished through site plan and subdivision approval. By this procedure, a local developer is required to dedicate and often improve the right-of-way width to the proposed standard including curbs, gutters and storm sewers. The second process, reservation for later purchase, is also accomplished through the local review process. The reservation requirement is appropriate when the proposed right-of-way width is in excess of what will be required to accommodate the traffic generated within a particular development. This situation may occur as a result of minor subdivisions along collector or arterial roads. In this instance, the Planning Board may wish to require a reservation of the right-of-way without an actual dedication. Building setbacks would then be required to be of sufficient distance so that when a road is eventually widened, the full right-of-way width as well as the full front yard setback mandated

by Ordinance for the particular zoning district will have been preserved. Front yard setback measurements can either be expressed in the traditional way, from the proposed right-of-way line, or, as the County Planning Board suggests, from the center line of the road.

Regardless of the process by which the right-of-way is acquired, development should be able to occur in the immediate future without jeopardizing the future circulation needs of the township. Based on existing land uses in Lower Township and on the development proposed in the Land Use Development Plan, it may not be practical to attempt to acquire a 66 foot right-of-way along Bay Shore Road. Rather, it would be preferable to limit Bay Shore Road to a 50 foot right-of-way and increase the right-of-way recommended for Fulling Mill Road to 66 feet. Lower Township officials should work closely with the Cape May County Planning Board and the County Engineer over the next year to coordinate traffic circulation goals and policies.

SUMMARY

As indicated previously in this report, Lower Township's Land Use Development Plan cannot realistically resolve the conflicts inherent in the housing policies of the Cape May County Planning Board and those of the State of New Jersey. However, in terms of overall land use policies, Lower Township's Plan reflects the spirit of the recommendations of both the County and the State to the extent possible within the confines of municipal planning and zoning powers. Both the State Development Guide Plan and the Cape May County Comprehensive Plan propose only limited growth within Lower Township; development is to be restricted, to the extent possible, to those vacant lands which are linked by the availability of public services to already developed portions of the township. Lower Township's land use policies emphasize the concentration of future year-round residential growth near presently developed areas and encourage commercial and seasonal residential land uses to locate near heavily travelled roads and on the barrier beach. The principal differences between the specific land use recommendations illustrated on the County's Land Use Plan and those shown on Lower Township's Land Use Development Plan are two locations along the Cape May Canal which are proposed for marine recreation in the County's Plan but are proposed for residential use and/or open space in the township's Plan. The township's recommendation is based on the historical reluctance of the Army Corps of Engineers to grant private landowners direct access from the Canal. This policy, until modified, makes the County's marine recreation recommendation impracticable.

In addition to its general compliance with the land use policies of both the State and the County, Lower Township's Land Use Development Plan is also generally compatible

with the land use policies of adjacent municipalities. However, there are a few exceptions to this, the most notable among them being the proposal for residential rather than commercial land uses along Route 9 at Lower Township's northern border; Middle Township's zoning along Route 9 is presently commercial. Additionally, Lower Township's Plan calls for high-rise residential, commercial and high-rise hotel-resort development at Diamond Beach, while development in most of Wildwood Crest is in one and two story structures. However, this difference in land use policies is intended to be mitigated by the preservation of a low-rise "R-4" district along most of the Wildwood Crest border. Plate 54 graphically illustrates the relationship between Lower Township's proposed land use districts and the adjoining zone districts in the neighboring municipalities.