UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of LONG ISLAND LIGHTING COMPANY (Shoreham Nuclear Power Station, Unit 1)	Docket No. 50-322-OL-3 (Emergency Planning)

DIRECT TESTIMONY OF CHARLES E. KILDUFF
ON BEHALF OF NEW YORK STATE REGARDING
LILCO'S PROFFERED EVIDENCE OF JANUARY 11

Q. Please state your name, occupation, and professional background.

A. My name is Charles E. Kilduff. I am a civil engineer in Transportation Planning, New York State Department of Transportation.

A statement of my qualifications and experience is Attachment 1 to this testimony.

Q. Please provide a brief background of your work experience as it pertains to your testimony.

A. I have been with the New York State Department of Transportation since 1962. I am currently supervising the Regional Development Section, Region 10 (Nassau-Suffolk Counties). I am directly involved in transportation improvements for Region

10, including the study of traffic conditions, capacities and forecasting. My duties require me to be familiar with traffic conditions throughout Suffolk and Nassau Counties, including the Nassau Coliseum area in Uniondale, New York.

Q. What is the purpose of this testimony?

A. The purpose of this testimony is to address LILCO's proffered evidence of January 11, 1985 concerning LILCO's proposal to use the Nassau Coliseum to monitor and decontaminate evacuees in the event of an emergency at the Shoreham nuclear plant.

Q. Are you familiar with the evidence proffered by LILCO?

A. Yes. I have reviewed LILCO's evidence. That evidence makes clear that all evacuees will be directed to the Nassau Coliseum for monitoring and decontamination. It is my understanding that most evacuees would reach the Coliseum by using their own automobiles or other vehicles. However, a substantial number of evacuees will not have access to automobiles and therefore would have to be evacuated to the Coliseum by bus.[1/]

1/ The LILCO Plan estimates that approximately 11,100 persons will not have access to automobiles. The Plan calls for these persons to be evacuated using 333 buses. 236 of these buses will travel pre-established routes within the EPZ, making a total of 377 trips. Passengers will be taken to 11 transfer points, from where 97 additional buses will transport people out of the EPZ -- and presumably, under LILCO's proposal, to the Nassau Coliseum. See Direct Testimony of William J. Acquario, et al. on behalf of New York State regarding Emergency Planning Contention 67. See also LILCO Plan, Appendix A, at IV-74e to 74h.

Q. What is your opinion regarding LILCO's proposed use of the Nassau Coliseum?

A. My experience suggests that there could be serious problems with LILCO's proposal.

Q. What are these problems?

A. Under the LILCO proposal, evacuees would travel from the EPZ to the Nassau Coliseum in personal vehicles and LILCO-operated buses. In my opinion, this would result in significant additional traffic volumes on already heavily travelled highways and streets within both Suffolk and Nassau Counties. As a result, it is likely that traffic between the EPZ and the Coliseum would be congested, and evacuees could face considerable delays in reaching the Coliseum.

Q. Please explain.

A. A significant number of passenger cars, and the buses used by LILCO to transport persons out of the EPZ,[2/] would likely use the Long Island Expressway ("LIE"), which carries an average annual daily traffic ("AADT") of between 100,000 and 120,000 vehicles between Exit 64 in Suffolk County and Exit 40 in Nassau

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2/ The rules and regulations of the Long Island State Parks and Recreation Commission ("LISPRC") prohibit commercial traffic, such as buses, from using the parkways on Long Island. Thus, highways such as the Northern State Parkway and the Southern State Parkway would not be available for use by LILCO's buses. Indeed, it is physically impossible for some buses to use many of the parkways because of insufficient vertical clearance at the underpasses. Therefore, LILCO's buses would have to use the Long Island Expressway and local arterials and streets to reach the Nassau Coliseum from the EPZ.

County,[3] to reach the Nassau Coliseum. Even under normal, day-to-day conditions, the LIE in this sector is a heavily travelled route in both the eastbound and westbound directions, and evacuees would therefore likely experience considerable delays in reaching the Coliseum.

Evacuees in their own vehicles, after leaving the EPZ and travelling a distance of some 30 miles from the William Floyd Parkway[4] on the LIE, could access the Long Island Parkway system at Exit 42 of the LIE. Most likely, such evacuees would then use the Northern State Parkway and the Meadowbrook Parkway to reach the Nassau Coliseum. While this route would be the most direct route to the Coliseum, both the Northern State Parkway and the Meadowbrook Parkway have capacity deficiencies. The Northern State Parkway carries an AADT of 90,000 passenger cars and the Meadowbrook Parkway carries an AADT of 80,000 passenger cars. These volumes exceed traffic capacities[5] and, as a result, traffic on these parkways is typically congested.

In addition, the interchange configuration between the Northern State Parkway and the Meadowbrook Parkway is such that

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3/ Exit 64 provides access from the LIE to NY Route 112 and is located just outside the western boundary of the Shoreham 10-mile EPZ. Exit 40 provides access from the LIE to the Nassau Coliseum.

4/ The William Floyd Parkway is a north-south highway which passes through the approximate center of the 10-mile EPZ.

5/ For example, recent studies by the New York State Department of Transportation have shown that in order to handle future traffic demand on the Northern State Parkway, traffic capacity would need to be doubled.

traffic is significantly impacted. In essence, westbound Northern State Parkway traffic attempting to travel southbound on the Meadowbrook Parkway must exit the Northern State Parkway onto Glen Cove Road, re-enter the Meadowbrook Parkway via a circuitous ramp, and then merge with through traffic to go south. As a result, traffic congestion and queues at the interchange are commonplace even in normal traffic conditions, as are traffic accidents. Indeed, the serious traffic operational and safety problems arising from the present configuration of the interchange have resulted in a proposal by my office that the interchange be reconstructed. Pertinent sections from this January 1984 proposal comprise Attachment 2 to this testimony. Figure 3 of the Attachment shows specific geometric problems at the interchange (too many conflicting movements, short weave and merge lengths, and no direct connection from westbound Northern State Parkway to southbound Meadowbrook Parkway). The Attachment also includes a detailed accident analysis for 1980 and from January 1982 to January 1983. This analysis reveals that the average number of accidents at the interchange has been 130 accidents per year -- over six times the Statewide accident rate. The proposal concludes (at page 12) that the projected traffic increase and the inadequate geometrics of the interchange will result in traffic operation becoming intolerable, unless the interchange is reconstructed.[6/]

6/ The proposal to reconstruct the interchange has been approved, but construction is not scheduled before 1989. Construction would take approximately two years. Even with reconstruction of the interchange, additional work will be required east of the interchange if traffic congestion in the area is to be alleviated.

As previously mentioned, LILCO-operated buses travelling from the EPZ to the Nassau Coliseum will have to use the LIE and local arterials and streets to reach the Coliseum. One route likely to be used would be for LILCO's buses, after travelling west a distance of about 36 miles from the William Floyd Parkway on the LIE, to exit onto NY Route 25 (Jericho Turnpike) and then continue west for a distance of three miles. This section of NY Route 25, however, is a divided boulevard with at-grade intersections and side friction, i.e., roadside development. The effect of vehicles entering onto the roadway from driveways and businesses is to reduce traffic flow. Traffic delays also occur due to traffic signals.

LILCO's buses could exit NY Route 25 and travel south for three miles on Post Avenue to Merrick Avenue. This route would also provide access to the Nassau Coliseum and is perhaps the most direct route. Post Avenue, however, is characterized by heavy side friction and congestion as a result of both residential and commercial development. Therefore, it is again likely that evacuees would be delayed in reaching the Coliseum.

Q. Are there any other problems with LILCO's proposed use of the Nassau Coliseum to monitor and decontaminate evacuees?

A. Yes. The Nassau Coliseum is located in Mitchel Field and is in close proximity to Roosevelt Field, a large shopping complex. The entire area around the Coliseum is experiencing rapid development, with a concurrent high growth in traffic volumes along the local streets. This conclusion is supported by a Generic Environmental Impact Statement ("EIS") for the Mitchel Field area prepared by the Nassau County Planning Commission in

October 1984. Among other issues, the EIS discussed actual and predicted traffic volumes in the Mitchel Field area. Pertinent sections of the Mitchel Field EIS comprise Attachment 3 to this testimony. In particular, however, the EIS reveals that high intensity land use in the form of commercial and office development has caused significant traffic congestion in the area of the Nassau Coliseum.[7/] As a result, it must be concluded that evacuees would likely experience considerable delays in attempting to reach the Coliseum during an emergency at the Shoreham plant. Indeed, given the volume of traffic that could result from evacuation of the entire 10-mile EPZ,[8/] the limited number of major

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7/ Traffic congestion was specifically recognized by the Nassau County Planning Commission as a serious problem "urgen[tly requiring] needed improvements" in its formal findings and approval of the Mitchel Field EIS. The Commission noted with respect to traffic congestion that

> Development of Mitchel Field is expected to have a major impact upon traffic flow in the area. There will be delays at intersections, slower movement of vehicles on the surrounding road network, and heavier demands upon the mass transit system. Several of the intersections actually will fall to a "Forced Flow" Level of Service -- the worst-case-traffic-flow-description . . . unless improvements are implemented.

See Resolution of the Nassau County Planning Commission dated December 6, 1984, the pertinent section of which is Attachment 4 to this testimony.

8/ According to LILCO's estimates, approximately 160,000 persons reside within the 10-mile EPZ of the Shoreham plant. LILCO Plan, Appendix A, at III-2. Furthermore, I am aware that Suffolk County contends that traffic evacuating from within the EPZ would likely be substantially increased by voluntary evacuees from both Suffolk and Nassau Counties. See generally testimony of James H. Johnson regarding LILCO's proffered evidence.

east-west highways on Long Island, and the heavy congestion of those highways during peak traffic conditions, traffic would likely be congested and delayed all the way between the EPZ and the Nassau Coliseum area.

Q. Are you aware of any other problems that could delay travel time by evacuees to the Nassau Coliseum?

A. Yes. As a result of the Rebuild New York Program, a significant amount of highway and bridge construction has been approved for the Nassau Coliseum area. This construction will take a number of years to complete, and will significantly impact several major parkways, the LIE, and many of the arterial roadways in the area of the Coliseum. At a minimum, traffic flow in the area will be regularly delayed due to the closing of lanes, reduction in lane widths, detours and other construction-related restrictions. As a result of this construction, the capacity of some Nassau Coliseum area roadways will be significantly reduced, causing traffic delays and congesting further the already-congested roadway system. It is likely that Shoreham evacuees travelling to the Nassau Coliseum would encounter at least some roadway construction, and would therefore be delayed even further in reaching the Coliseum.

Q. Please summarize your testimony.

A. It is likely that passenger cars and buses evacuating the EPZ will experience considerable delays in reaching the Nassau Coliseum. Even after leaving the EPZ, the volume of

traffic from evacuating vehicles will result in congestion and delays along the LIE and the major east-west highways leading to the Coliseum. If evacuees attempt to reach the Coliseum by exiting the LIE and using local roadways, as the LILCO-operated buses must, they will be confronted with moderate to heavy side friction, narrow lanes, and congested, signalized intersections. Buses, in particular, will have difficulty in travelling many of the local streets around the Nassau Coliseum. In addition, evacuating traffic will likely be significantly impacted by roadway construction projects presently underway or scheduled for the Nassau Coliseum area.

Q. Does that conclude your testimony?

A. Yes.

CHARLES E. KILDUFF - Qualifications and Experience

Address: New York State Department of Transportation
New York State Office Building
Veterans Memorial Highway
Hauppauge, New York 11788

Phone: (516) 360-6128 (Business)

Training: Bachelor of Science, Civil Engineering - University of Mississippi. Graduated August 1952.

Master of Science - Transportation Planning - Polytechnic Institute of Brooklyn. Graduated June 1971.

Other training includes courses in the 1965 Traffic Capacity Manual given by Polytechnic Institute of Brooklyn and a Professional Program Urban Transportation given by the Transportation Research Institute, Carnegie-Mellon University, Pittsburgh, Pennsylvania - 1977.

Work Experience:

USMC 1952 to 1954 - Engineer Battalion - Officer
Walsh Construction - 1955 - Construction Engineer
Buck & Donahue - 1956 - Construction Engineer
Andrews & Clarke, Inc. (Highway Design) 1956 to 1962

New York State Dept. of Transportation - Design and Construction - 1962 to 1963

Planning & Development - 1963 to present. Currently supervising the Regional Development Section.

Licensed to practice Professional Engineering in New York State in 1961.

PROBLEM DEFINITION AND PROJECT PROPOSAL

PIN 0523.00

NORTHERN STATE PARKWAY

AND

MEADOWBROOK PARKWAY

INTERCHANGE

NASSAU COUNTY

RECONSTRUCTION

JANUARY 1984

Prepared by: New York State Department of Transportation
Region 10 Planning & Development
Hauppauge New York

TABLE OF CONTENTS

I. INTRODUCTION

The Northern State Parkway is a major east-west limited access freeway serving the northern corridor of Long Island. It intersects the Meadowbrook Parkway in Carle Place. The Meadowbrook Parkway is a major north-south limited access freeway, connecting to the Southern State Parkway which serves the southern corridor of Long Island. Meadowbrook Parkway extends south of Southern State Parkway and ends at Jones Beach Park.

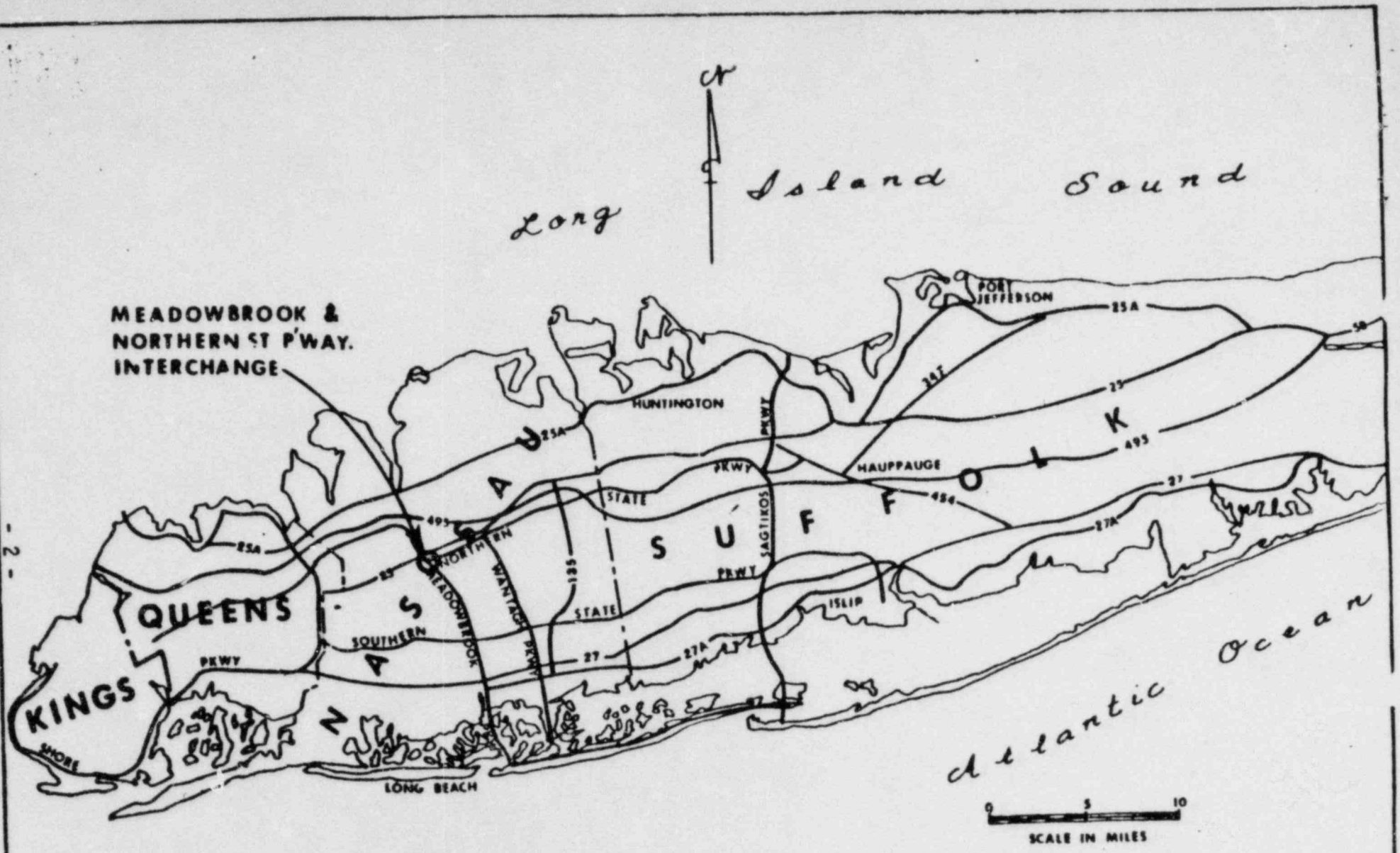
Jericho Turnpike, State Route 25, a principal east-west arterial serving the north shore corridor, intersects (at-grade) Glen Cove Road, a major County Road (Route 1) that links Glen Cove on the north shore to the five town area in the southeastern section of Nassau County.

The above interchange and intersection are in close proximity to each other in a mixed residential commercial area. The area immediately south of the points of intersection are changing very rapidly from a mixed industrial commercial area to one of high use commercial development.

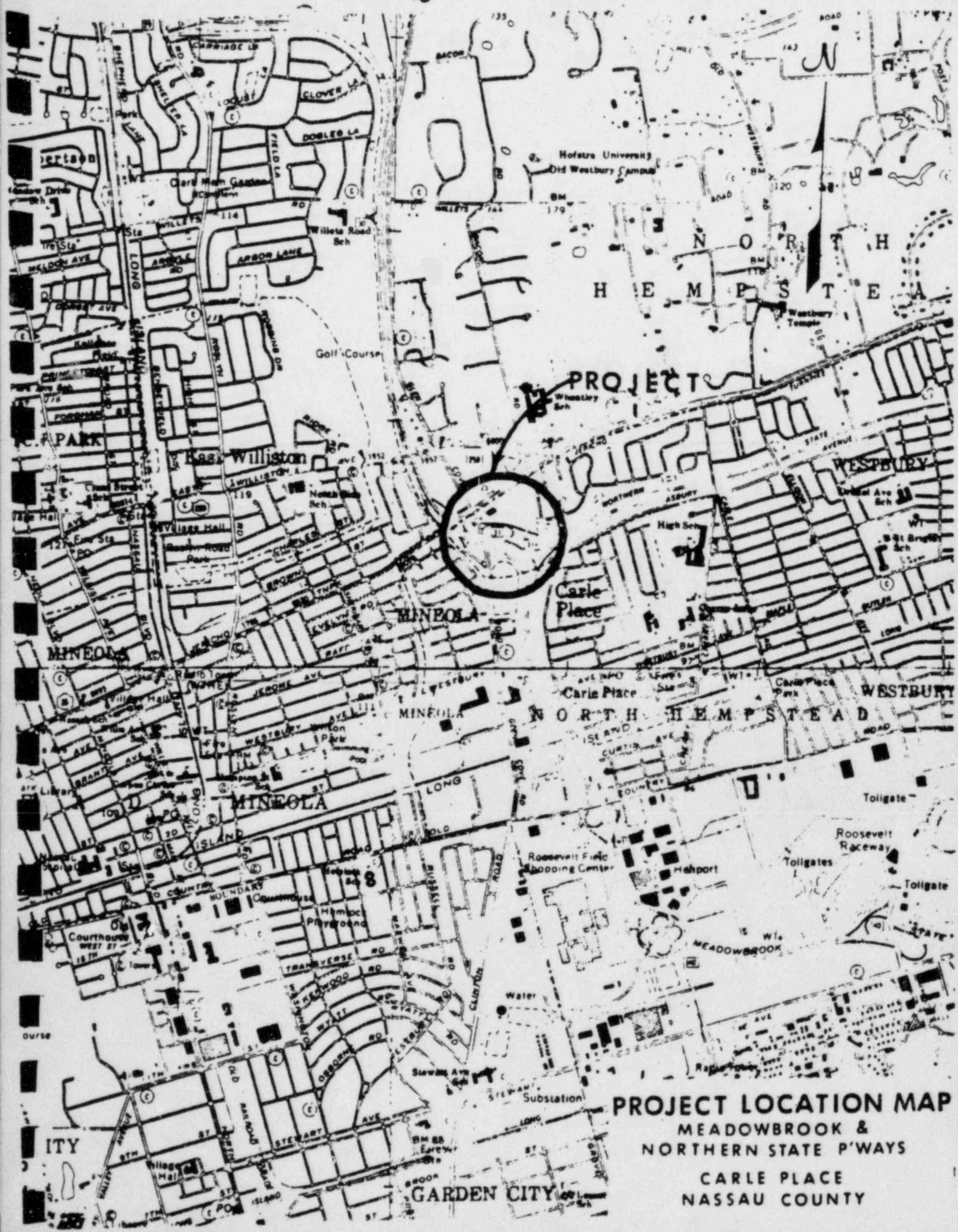
This proposal is concerned with the Meadowbrook Parkway and Northern State Parkway interchange. The location and limits of the proposed project are shown on Figures 1 and 2.

Northern State Parkway west of the interchange is an eight lane controlled access facility and a four lane controlled access facility to the east. Meadowbrook Parkway is a i x lane controlled access facility to the south. Glen Cove Road and Route 25 are four lane arterials.

The existing geometric configuration of the junction of these two parkways lacks a direct connection from the westbound Northern State Parkway to southbound Meadowbrook Parkway, and the location of on and off ramps serving Glen Cove Road and Route 25 at the interchange results in serious traffic operational and safety problems.



LOCATION MAP
FIGURE 1



PROJECT LOCATION MAP

MEADOWBROOK &
NORTHERN STATE P'WAYS

CARLE PLACE
NASSAU COUNTY

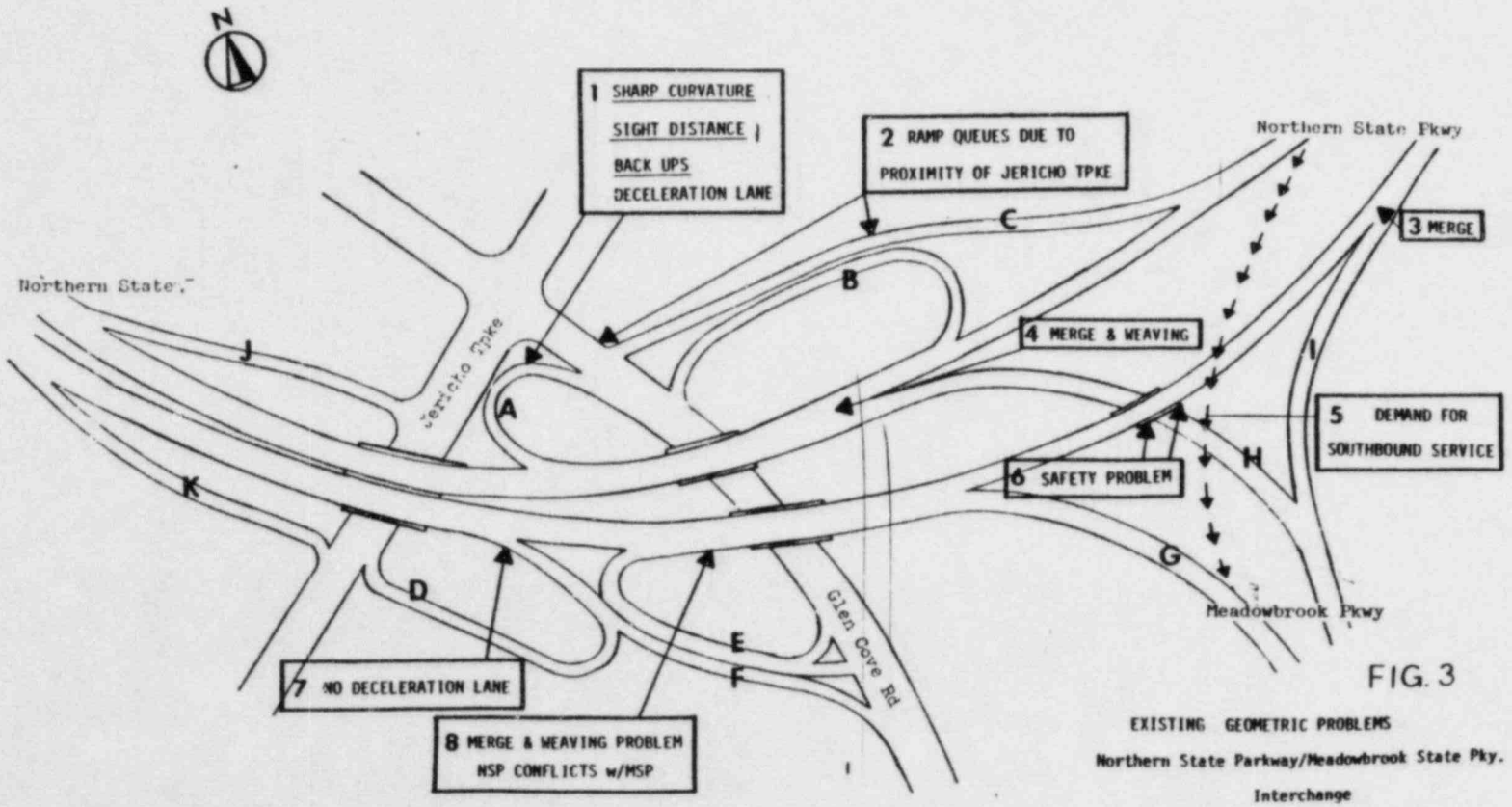


FIG. 3

EXISTING GEOMETRIC PROBLEMS

Northern State Parkway/Meadowbrook State Pky.

Interchange

Carle Place, Nassau County

4. Traffic Operation

a. On the Parkways

The traffic operation problems on the parkways are as follows:

1. Traffic must exit from westbound Northern State Parkway to Glen Cove Road then reenter the eastbound ramp leading to both Northern State and Meadowbrook Parkways. This move is due to the lack of a direct connection between westbound Northern State Parkway and southbound Meadowbrook Parkway. The above move creates bakcups on the westbound Northern State Parkway just prior to the southbound exit ramp to Glen Cove Road.
2. A weaving and merge problem occurs when eastbound Northern State Parkway traffic merges or crosses traffic from the Glen Cove Road on-ramp to both Northern and Meadowbrook State Parkways.
3. The northbound Meadowbrook Parkway merge with westbound Northern State Parkway just prior to the Glen Cove Road southbound exit creates a short section that has weaving and crossing problems for those who want to exit and for westbound Northern State Parkway traffic.
4. Ramp queues at the off-ramp from westbound Norterhn State Parkway to northbound Glen Cove Road are due to proximity to Jericho Turnpike.
5. Lack of capacity east of the Meadowbrook Interchange restricts movement through the Interchange and traffic backs up in the AM and PM peak hours.

b. On the Adjacent Roads

The traffic operation problems on the adjacent roads:

1. Northbound Glen Cove Road has extensive queues at the intersection of Route 25.
2. Southbound Glen Cove Road has weaving and merging problems at the section between Route 25 and the on-ramp to eastbound Northern State Parkway. This is due to the heavy traffic demand for the southbound Meadowbrook Parkway move which has no direct connection to southbound MSP.

5. Safety

a. Accident History (See Appendix B)

A detailed accident analysis for 1980 and from January 1982 to June 1983 was made. The centralized local accident surveillance System was utilized for accident data covering 1982 and January to June 1983. 1981 data was unavailable from the class system. Accident data for 1980 was previously obtained from police accident reports. The accident summary for this interchange is listed below:

Year	F	I	PDO	Total	Acc. Rate Acc./MVM
Total of 1980	0	26	58	84	4.47
Total of 1982	2	56	90	148	7.88
Half of 1983 (from 1/1 to 6/30)	0	29	64	93	9.98

The Statewide average accident rate for this type of facility is 1.10 Acc/MVM.

The average number of accidents per year for the analysis period is 130 accidents per year with an average accident rate of 6.92 Acc/MVM or over six times the Statewide accident rate.

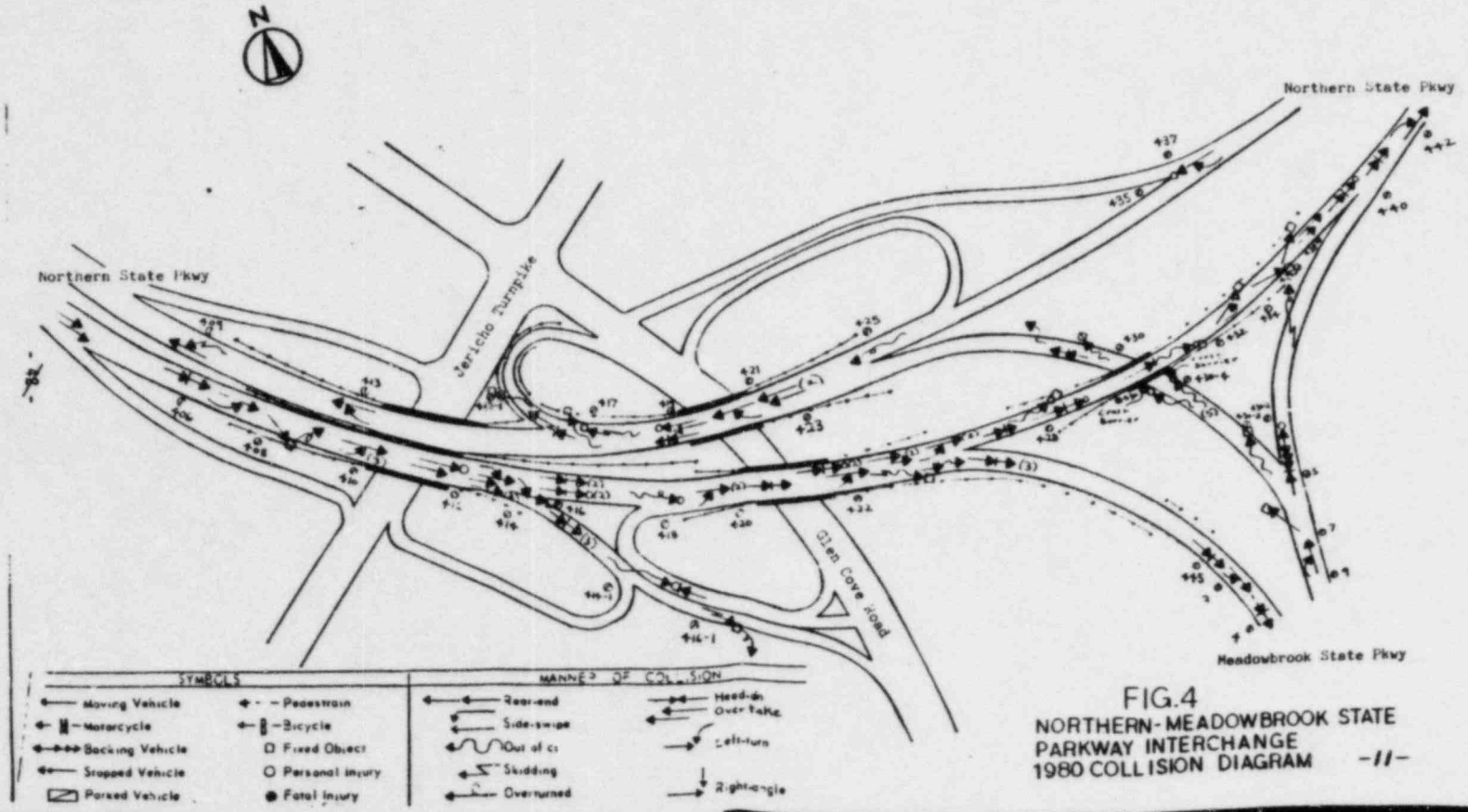
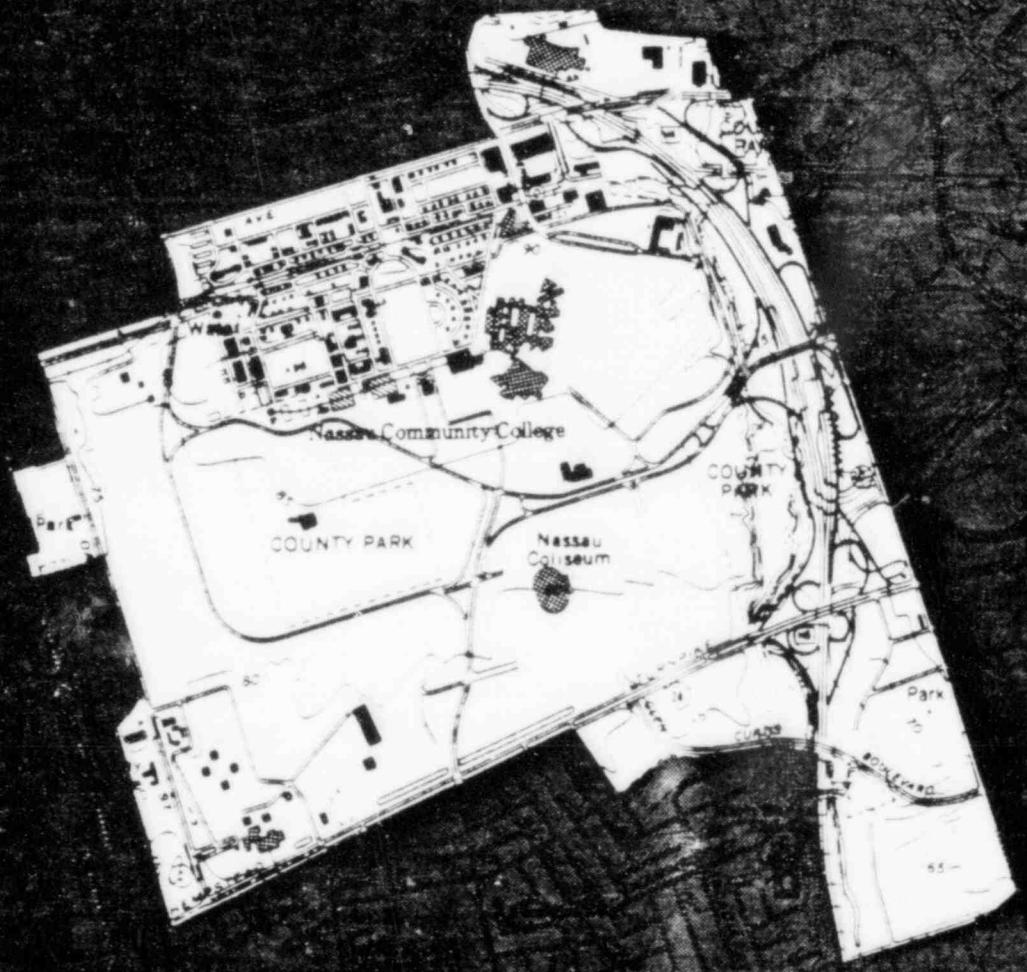


FIG.4
NORTHERN-MEADOWBROOK STATE
PARKWAY INTERCHANGE
1980 COLLISION DIAGRAM

MITCHEL FIELD AREA



GENERIC ENVIRONMENTAL IMPACT STATEMENT (FINAL)

NASSAU COUNTY PLANNING DEPARTMENT
AND
TOWN OF HEMPSTEAD
DEPARTMENT OF CONSERVATION & WATERWAYS

NASSAU COUNTY PLANNING COMMISSION

FRANCIS T. PURCELL
County Executive

HERBERT LIBERT
Director

LLOYD SMALLWOOD, JR.
Chairman

October 18, 1984

Board of Supervisors
Executive Building
One West Street
Mineola, N. Y. 11501

Dear Board Members:

In accordance with Section 617.10g of part 617, the Nassau County Planning Commiss.on, 222 Willis Avenue, Mineola, New York by resolution at its October 18, 1984 meeting serves notice of completion of this Final Generic Environmental Impact Statement (GEIS) for Mitchel Field.

The Planning Commission is pleased to forward this Final GEIS for the Mitchel Field Area, for your use in reviewing proposed development and leases at Mitchel Field.

The Commission held a Public Hearing on the Draft GEIS on April 5th, and received comments until May 5th. The Final GEIS addresses all comments and questions raised by the public and governmental agencies both at the Public Hearing and during the comment period.

This report was developed in cooperation with the Town of Hempstead Department of Conservation and Waterways and the New York State Department of Environmental Conservation, Division of Air Pollution, and isavailable at the Planning Commission's offices.

Sincerely yours,

HERBERT LIBERT
Director

HL:gr
Enc.
cc: Francis T. Purcell, County Executive
Edward G. McCabe, County Attorney

NASSAU COUNTY PLANNING COMMISSION

FRANCIS T. PURCELL, County Executive

FINAL GENERIC ENVIRONMENTAL IMPACT STATEMENT

MITCHEL FIELD AREA

October 18, 1984

Prepared by: Nassau County Planning Commission Staff in Cooperation with the Town of Hempstead Department of Conservation & Waterways and New York State Department of Environmental Conservation, Division of Air Pollution

Contact Person: John W. Follis, Jr., Deputy Director

III.

TRAFFIC GENERATION FOR THE MITCHEL FIELD STUDY AREA

In an area encompassing approximately 1,200 acres, a great deal of office, light industrial, manufacturing, as well as recreational development will be taking place over the next several months. It is anticipated that all the parcels available for development will be committed for construction in the near future. As such, it has become important to examine the potential impacts of this development.

Parcel Identification and Trip Generation

For the purposes of this report the "Mitchel Field Study Area", has been defined to have the following boundaries: Stewart Avenue to the north, including the Town of Hempstead Resources and Recovery Center and the Federal Aviation Administration Center; Merrick Avenue to the East; Front Street to the south as it moves westerly to the Meadowbrook Parkway and then north to Glenn Curtiss Boulevard until it intersects with Hempstead Turnpike to include that portion of the European American Bank Towers situated immediately west of Glenn Curtiss Boulevard; then moving west on Hempstead Turnpike until Oak Street; then moving north to include the Hofstra University Housing, the National Guard Facility, the Hebrew Academy of Nassau County, as well as, the Police Department Facility until Oak Street

intersects with Commercial Avenue, then moving east on Commercial Avenue until Quentin Roosevelt Boulevard and its intersection with Stewart Avenue.

With the construction of the Marriott Hotel, Belzona Molecular, Frequency Electronics, the United Parcel Distribution Center, and the United States Post Office, significant development has already taken place with more to follow. Accordingly, this impact will have a tremendous influence on the traffic network serving the area. The Planning Department had this in mind when in December, 1980, it issued a report entitled "Traffic Generation and Intersection Capacity Estimates for the Mitchel Field Study Area". The document made estimates of traffic generations based almost entirely on a .5 floor area ratio of development (FAR: the ratio of floor area within structures to the land area of the sites which they occupy).[1] For illustrative purposes these estimates were enumerated on a series of tables and maps.

Since the issuance of the 1980 report, new information has become available. The new data provides an updating of the parcel commitments and the total square footages. Therefore, it is the intent of the current document to update and expand the 1980 information. For continuity, the 1980 form will be adhered to as much as possible.

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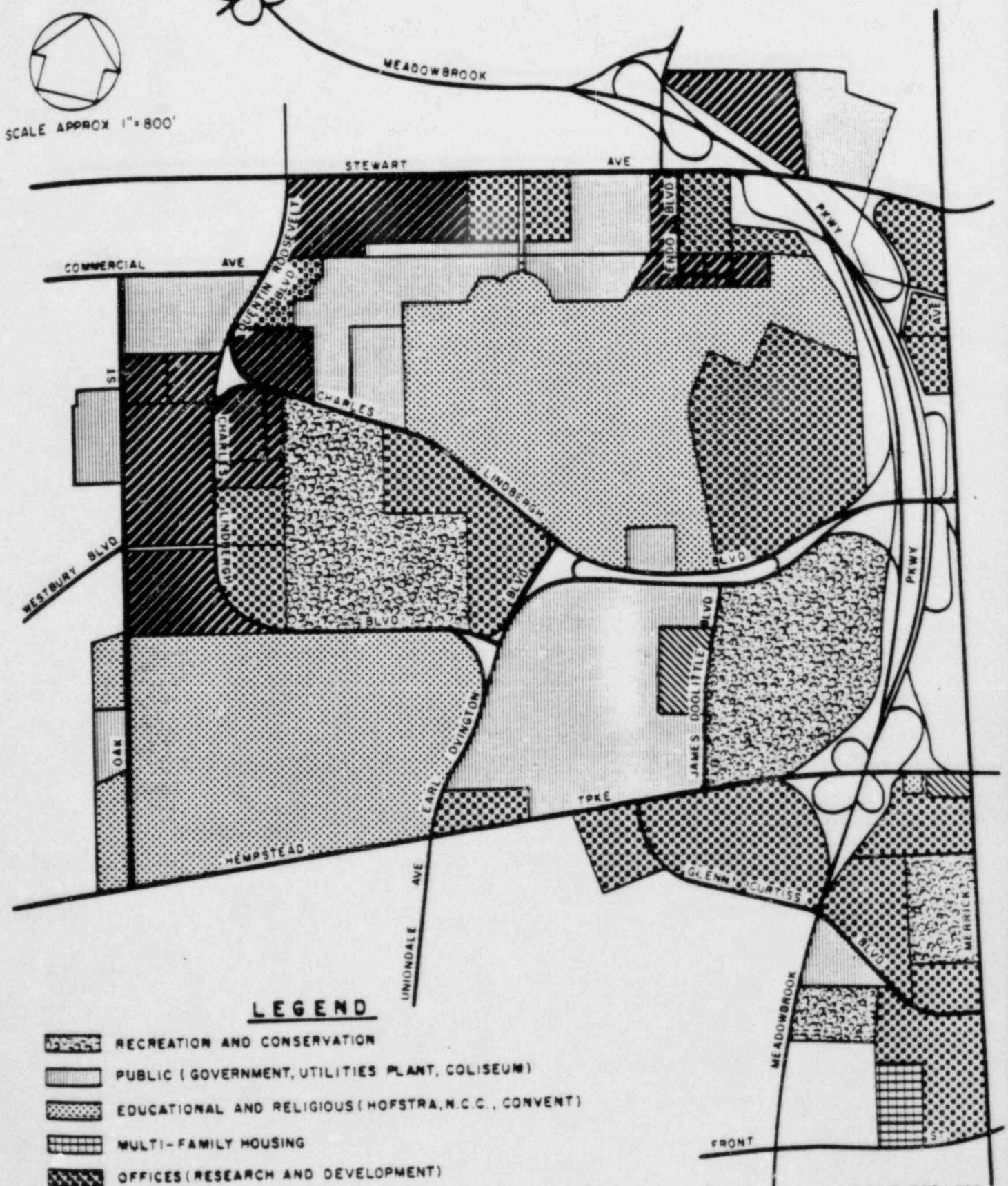
1 Claire, W. H. 1973. Handbook On Urban Planning. New York: Van Nostrant Reinhold Company, P. 141.

MITCHEL FIELD STUDY AREA
EXISTING AND PROPOSED DEVELOPMENT



LEGEND

- RECREATION AND CONSERVATION
- PUBLIC (GOVERNMENT, UTILITIES PLANT, COLISEUM)
- EDUCATIONAL AND RELIGIOUS (HOFSTRA, N.C.C., CONVENT)
- MULTI-FAMILY HOUSING
- OFFICES (RESEARCH AND DEVELOPMENT)
- COMMERCIAL (SERVICE STATION, RESTAURANT)
- INDUSTRY (LT. INDUSTRY, WAREHOUSING, DISTRIBUTION, MANUFACTURING)

PLATE I

DATE - DEC. 1983

THE NASSAU COUNTY PLANNING COMMISSION

Table 1 provides a listing of tne fifty (50) identifiable parcels contained in the study area. This information was gathered as a result of conversations and interviews with the County Attorney's Office, the Building Department of tne Town of Hempstead, the County Planning Department and the County Department of Public Works, Division of Highway Engineering. In addition, prospective developers were contacted for their imput. Additional information was also obtained from previous environmental impact statements and zoning applications.

In cases where square footage figures were not available a ".5 floor area ratio" was applied. This metnodology, and specific floor area proposals were utilized in making estimates of A.M. and P.M. peak hour traffic generation, as well as, generation for a 24 hour period.

Plate No. 2 nas been revised and provides an overall picture of the study area. Individual parcels are identified by number and land use or proposed use. Tne numbered designations on Plate No. 2 correspond to tne parcel numbers listed on Table 1 which in addition to existing and proposed use identify the following:

1. Parcel Number - This number is tne same as the number appearing on Plate No. 2 that identifies the Parcel number. The numbering system has stayed as close to that employed in the

1980 report. However, some parcels have been renumbered (A or B, etc.) to reflect new commitments and configurations.

2. Acreage - This is an estimated figure and may have as its source one or a combination of the following:

   a. Nassau County Land and Tax Map

   b. A planimeter reading

   c. A zoning application, submitted to the Nassau County Planning Department in accordance with Sections 239 l-m of the General Municipal Law of New York State

   d. A map received or on file with the County Department of Public works

   e. Information obtained from the developer or prospective developer

   f. Information obtained from the office of the County Attorney

   g. Information obtained from the Building Department of the Town of Hempstead

   (Please note that the base map should not be used to determine actual parcel size. Its main purpose is to indicate the various parcel commitments).

5. Trip Generation Rates - Unless specified otherwise, this is the trip generation rate per 1,000 square feet of gross floor area. In some cases it is analyzed by acre, unit, or use.

6. Trip Generation Source - Various multipliers were used that were based on studies conducted by governmental agencies or consultants. These sources were identified by the following letters:

M Trip Generation by Land Use, Part I-A Summary of Studies Conducted. Maricopa Association of Governments. Transportation and Planning Office, Urban Area of Maricopa County, Arizona. April, 1974. (The application of this source would produce a 24 hour figure).

R Environmental Impact Data, prepared by Andrews and Clark-Rice, Engineers. This is an 18 hour figure (6:00 A.M. - 12:00 midnight).

ES Environmental Impact Statement for the Sheraton Nassau Hotel. April, 1979.

T Trip Generation - Institution of Transportation Engineers. Arlington, Virginia. 1976.

7. Trip Generation - This figure represents the product of the rate and area. Certain parcels require a complete explanation, as follows:

Parcel No. 1 - When operating, the Resource Recovery Plant will have 150 employees on duty within a 24 hour period. Three (3) trips per employee were estimated.

Parcel No. 2 - The same as Parcel No. 1.

Parcel No. 3 - Applicable calculations for this parcel were based on information supplied by the United States Postal Service. Included in this data were the numbers of employees (3 shifts) as well as truck trips in and out of the facility.

Parcels No. 5 and No. 15 - It has not been determined how these parcels will be used in the future. Therefore, no trip generations have been calculated for these properties.

Parcel No. 30 - This parcel houses the Central Utilities Plant which has 21 employees assigned to it over a 24 hour period. Three (3) trips per employee per acre have been estimated.

Parcel No. 32 - This parcel has been developed for a secondary school. The 1980 study of traffic generations for this area reported that there were 375 full-time students and a staff of 45 people. At that time only one (1) student was taken to and from school in a private vehicle. This amounted to two (2) trips per day, or fifty (50) trips each day. Four trips were estimated for each staff member, totaling 180 trips.

These estimates are significantly lower than those that would have resulted from the application of the figures indicated by the Maricopa Study that called for 19.1 trips per staff member and 1.3 trips per student at a secondary school.

However, the activities reported by school officials give a more accurate indication of what is taking place at the site. Thus, for the purposes of this report, the figures obtained directly from the Hebrew Academy were the ones utilized.

Parcel No. 26A - Development of this property was completed in December, 1982. Traffic generated from this parcel is therefore included in the existing counts for the study area.

Parcel No. 26B - Similarly, this property was completed in January, 1983 and thus was included in the existing traffic.

Parcel No. 31B - This parcel falls under the same type of description as Parcels No. 26A and B, as it was completed in December, 1982 and is thus included in the existing counts.

Parcel No. 33 - It was reported in the 1980 study that fifteen (15) employees report to the armory on a daily basis. This number was carried forward.

Parcel No. 36 and 37 - A plan prepared by Andrews Clark-Rice Engineers, called for the hotel complex to be constructed on Parcel 36. As originally called for, this complex would have included 500,000 square feet of office space apart from the hotel.

The hotel opened in December, 1982. However, the development of additional office space, as well as expansion of the hotel remains a possibility. Figures for the traffic generations attributed to this site are cited in Tables 1 and 2 and are taken from the Environmental Impact Statement prepared for this property in 1979. There have been no estimates made of future traffic generations at this site. The present traffic generated from the hotel is included in the existing traffic counts.

Parcel No. 42 - This site is used for religious purposes and fifty (50) trips per day have been estimated for the parcel.

Parcel No. 43 - This parcel contains a restaurant and service station. Traffic generations that are a result of activities at this site are included in the existing traffic counts used in the intersectional analysis.

Below is a chart providing a summary of the acreage existing within the "Mitchel Field Study Area". These numbers were obtained from the various sources mentioned at the outset of this writing. They may be used to provide a general idea and feeling for the study area. Plate No. 2 should be referred to in order to determine which parcels have already been developed and which are still subject to development.

MITCHEL FIELD STUDY AREA

Land Area	Acreage
All Parcels	1,002.12
Parkways and Roadways	226.8
LIRR	8.9
Recharge Basins	7.4
	1,245.22

Peak Period Traffic Generation Estimates

The peak periods of traffic generation are expected to be from 7:00 A.M. - 9:00 A.M. and 4:00 P.M. until 6:00 P.M. The standards applied in calculating these two hour periods are taken from the Institute of Transportation Engineers. It is important to note that the "peak hour" of generation occurs over a one hour period that falls within the two hour segment indicated. Thus, the "peak" is that one hour period experiencing the greatest volume of traffic. Table 2 provides a breakdown of the peak period traffic generation estimates for anticipated and proposed uses within the study area. The parcels falling within this category are found on Plate 2. Those parcels completed, or operating at the time of this writing, are accounted for within the existing traffic counts and are utilized in the intersection evaluations that follow.

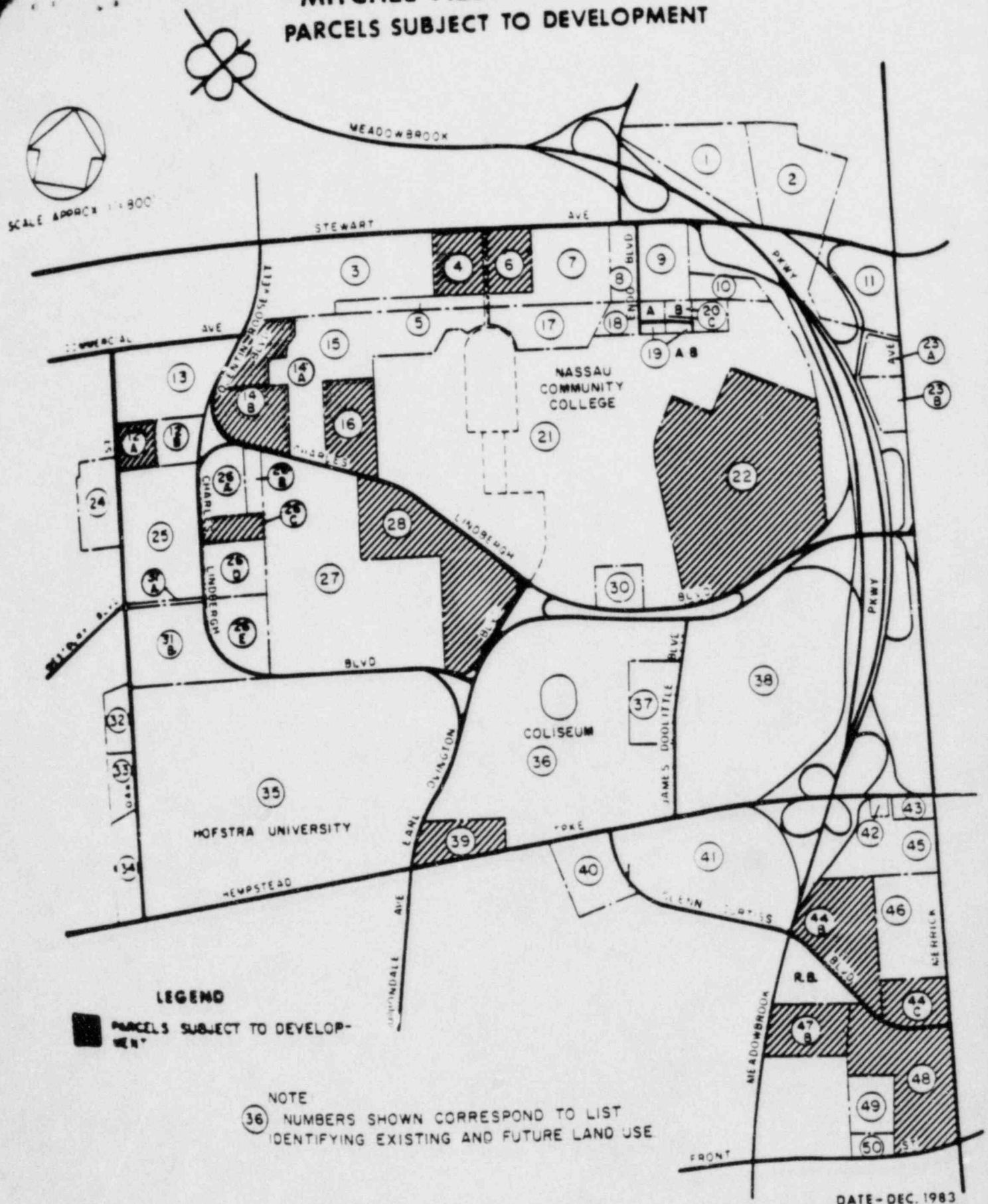
TABLE 1

MITCHEL FIELD STUDY AREA TRIP GENERATION

Parcel No.	Use	Acres	Source[1]	Building area Square Feet (applications)	Weekday Trip Generation rate per 1,000 sq.ft.	Calculation Source	Trip Generation
1	Town of Hempstead	15.0	A	150,000 Industry			450
2	Air Traffic Control Center	15.6	A	55,000			1,200
3	U.S. Postal Service	22.7	E	82,960 Workroom 12,596 Platform 29,062 Lunchroom 3,726 Lockers 7,310 Supply 2,876 Shop Area 2,441 Corridors 3,758 Office 1,257 Penthouse 8,000 Misc. 127,994 Main Building Total			24 hrs. 110 truck trips-in 110 truck trips-out 800 employees (3 shifts) (a) 250 per shift 1,720 trips overall (est.)
				18,000 VMF 2,500 Office 20,000 Small Bldg. Total			
4,6 "Atrium"	Office	6.0 4.9	TE,CA	217,284 178,244 395,528	10.32 10.32	M M	2,242 1,839 4,081
5	USA	3.4	B				

[1] For explanation of sources see pages 7-5.

MITCHEL FIELD STUDY AREA
PARCELS SUBJECT TO DEVELOPMENT



DATE - DEC. 1983

THE NASSAU COUNTY PLANNING COMMISSION

PLATE 2

TABLE 1 (Cont'd)

Parcel No.	Use	Acres	Source	Building area Square Feet (applications)	Weekday trip Generation Rate Per 1,000 sq.ft.	Calculation Source	Trip Generation
7	USA-Residential	13.2	B	25 units	8.87 per unit	M	330
8	Creative Mailing Colonial Press (Lt. Ind.)	3.7	B	70,000	4.94	M	346
9 Endo Dupont	Research & Development	7.6	A	146,000	5.09	M	743
10 Nassau Academy of Medicine	Research & Development	4.7	A	13,000	5.09	M	66
11 Parowan "PAR" Realty	Office	10.32	TOH	218,736	10.32	M	2,257
12A DiFazio Electric	Warehouse & Office	13.0	CA	2 bldgs. @ 37,725 50,300 Office 25,150 Warehouse (est.) 75,450	10.32 Office 5.01 Warehse	T	519 126 645
12B	Rolin Realty (Exel) Warehouse & Office	3.3	TOH	30,435 Office 30,435 Warehse 60,870	10.32 Office 5.01 Warehse	M T	314 153 467

TABLE 1 (Cont'd)

Parcel No.	Use	Acres	Source	Building area Square Feet (applications)		Weekday trip Generation Rate Per 1,000 sq.ft.	Calculation Source	Trip Generation
13	Metropolitan Suburban Bus Authority	9.9	EIS Wiedersum Assoc.	236,400	Garage Maintenance		Wiedersum P.30	1,562
				36,000	Office		M	372
								1,934
14A	Offices	7.0	CA	152,460	Office	10.32	M	1,573
14B	Webcor Electronics	4.24	CA	43,482	Warehouse	5.01 Warehouse	T	217
				725	Warehouse	10.32 Office	M	24
				1,652	Office			243
				45,859				
15	USA-Residential	24.9	B	544,500	Unknown			
16	Nassau County	9.3	B	204,732	Office	10.32	M	2,113
17	USA Residential	8.9	A	18	Units	8.87 per unit	R	160
18	Endo-warehouse	1.8	A	64,000		5.01	T	321
19A	Endo Blvd. Realignment	.5	CA					
19B	Endo Warehouse	.23	B	3,200		5.01	T	16

Parcel No.	Use	Acres	Source	Building area Square Feet (applications)		Generation Rate Per 1,000 sq.ft.	Calculation Source	Trip Generation
20A	Romart Realty	3.1	B	70,000		4.10	T	287
B	CC Blaschvla							
C	K-Mon Assoc. (Lt. Manufacturing)						R	24,600
21	Nassau Community Coll.	157.5	B					
22	Wilbur Breslin Office	50+	CA	1,089,000 (.5 FAR)		10.32	M	11,238
23A	NYU Research & Dev.	.6	A	10,000		5.09	M	50
23B	MONY-Offices	4.5	A	42,000		10.32	M	433
24	Nassau Cty. Pol. Dept.	7.4	B	10,493			R	1,800
25	United Parcel Service	25	C	330,000		5.52	M	1,822
26A	Belzona Molecular	7.72	TOH	20,500	Office	10.32	M	212
				14,700	Manuf.	4.10	T	60
				18,400	Warehse	5.01	T	92
				1,400	Misc.			364
				55,000				
26B	Bergwall Productions	2.2	TOH	12,200	Office	10.32	M	126
				17,000	Warehse.	5.01	T	85
				29,200				211
26C	Sonometrics	4.43	E	25,300	Office	10.32	M	261
				12,311	Manuf.	4.10	T	50
				14,120	Storage	5.01	T	
				8,829	R & D	5.09	M	44
				2,965	Misc.			356
				66,900				

TABLE 1 (Cont'd)

Parcel No.	Use	Acres	Source	Building area Square Feet (applications)		Weekday trip Generation Rate Per 1,000 sq.ft.	Calculation Source	Trip Generation
26D	Reckson Assoc. Nassau West	7.78	E	110,000	Office	10.32	M	1,135
				25,000	Manuf.	4.10	T	102
				65,000		5.01	T	325
								1,564

TABLE 1 (Cont'd)

Parcel No.	Use	Acres	Source	Building area Square Feet (applications)		Weekday trip Generation Rate Per 1,000 sq.ft.	Calculation Source	Trip Generation
26D	Reckson Assoc. Nassau West Corp. Center I	7.78	E	110,000	Office	10.32	M	1,135
				25,000	Manuf.	4.10	T	102
				65,000		5.01	T	325
				200,000				1,564
26E	Reckson Assoc. Nassau West Corp. Center II	9.12	E	184,793	Office	10.32	M	1,907
				13,462	Manuf.	4.10	T	55
				21,939	Warehse.	5.01	T	109
				220,194				2,071
27	Nassau County Pk.	74.5	B			28.38 per acre	M	1,686
28	Reckson	14.4	E	400,000	Office	10.32	M	4,128
				50,000	Storage			
				50,000	Common			
				500,000				
29	No Parcel Designation[2]							63
30	Central Utilities Plant	4.7	B	40,000				
31A	Utilities Easement	1.1						380
31B	Frequency Electronics	16.5	TE	36,816	Office	10.32	M	360
				87,752	Manuf.	4.10	T	749
				115,000				

TABLE 1 (Cont'd)

Parcel No.	Use	Acres	Source	Building area Square Feet (applications)		Weekday trip Generation Rate Per 1,000 sq.ft.	Calculation Source	Trip Generation
32	Hebrew Academy of Nassau Cty.	4.4	A	95,832			See text	232
33	National Guard	4.1	A	91,476				45
34	Hofstra Univ.	7.6	A	165,528			R	16,400
35	Hofstra Univ.	139.2	B	3,031,776			R	12,960
36	Veterans Memorial Coliseum	77.2	B				E	3,320
37	Marriott Hotel	8.09	A,(TOH)	250,000 10,000 68,970 391	Office & Retail Hotel Use Units		E	
38	Hempstead Plains	61.5	B					
39	Wilbur Breslin	6.5	CA	141,000	Office	10.32	M	1,461
40.41	DeMatteis Corp. EAB	7.9 28.4	TE	1,120,275	Office	10.32	M	11,560
42	Religious	.9	B	3,000			see text	50
43	Borrelli's Rest.	1.8	B	6,800		233.19	M	1,585
	Shell Service Sta.			5,000		per station	T	748
44B	Avon Park Mgt. Meadowbrook Plaza So.	13.19	CA	265,359	Office	10.32	M	2,239
44C	Marcus (possible office)	4.002	CA	87,163(.5 FAR)	Office	10.32	M	899

(possible office)

TABLE 1 (Cont'd)

Parcel No.	Use	Acres	Source	Building area Square Feet (appl'cations)	Weekday trip Generation Rate Per 1,000 sq.ft.	Calculation Source	Trip Generation
45	Meadowbrook Plaza No.	12.0	TE	236,000 Office 15,000 Office	10.32 52.79	M M	2,436 792 3,228
46	Little League Fields	13.8	B		26.54 per acre	M	N/A
47A	No parcel designation[2]						
47B	USA-Park	6.0	D		28.38 per acre	M	170
48	Jerry Lazaras Assoc.	19.9	CA	500,000 Office	10.32	M	5,160
49	TOH Housing	5.3	TOH	105 Senior Citizens	3.27 per unit	M	343
50		1.8	TOH	20 Multi-Family	6.8 per unit	M	136

2 Parcel number originally appeared in the 1980 Traffic Report. However due to updating and renumbering these parcel numbers are no longer applicable.

TABLE 2

Peak Period Traffic Generation Estimates for Proposed Uses in Mitchel Field

Parcel No.	Proposed Use	GFA[1]		7 - 9 A.M. IN	7 - 9 A.M. OUT	4 - 6 P.M. IN	4 - 6 P.M. OUT
1	Resource Recovery***			80	25	25	80
			Trucks	90	90		
			Total	170	115	25	80
2	Air Traffic Control Center			150	75	75	150
3	U. S. Postal Service (3 shifts - 1,720 Trips Total)			573	573	573	573
4	Office	217,284		412	78	41	322
5	USA	178,244		339	64	34	264
6	Office	N/A					
7	USA	N/A					
8	Light Industry	N/A					
9	Research & Development	N/A					
10	Research & Development	218,736		416	79	42	324
11	Office	25,150		36	4	4	37
12A	Warehouse	50,300		96	18	10	74
	Office	75,450		132	22	14	111
	Total						

1 Gross Floor Area

TABLE 2 (Cont'd)
Peak Period Traffic Generation Estimates for Proposed Uses in Mitchel Field

Parcel No.	Proposed Use		GFA	7 - 9 A.M. IN	7 - 9 A.M. OUT	4 - 6 P.M. IN	4 - 6 P.M. OUT
12B	Warehouse		30,435	44	5	5	45
	Office		30,435	58	11	6	45
		Total	60,870	102	16	11	90
13	Bus Garage**		236,400				
	Office		36,000	150	150	150	150
	Buses			90	90		
				240	240	150	150
14A	Office		152,460	290	55	29	226
14B	Warehouse		43,482	63	7	7	64
	Office		2,377	5	1	1	4
			45,859	68	8	8	68
15	USA						
16	Nassau County Office		204,732	390	74	40	303
17	USA		N/A				
18	Warehouse		N/A				
19A	Road Realignment						
19B	Warehouse		N/A				

TABLE 2 (Contd)

Peak Period Traffic Generation Estimates for Proposed Uses in Mitchel Field

Parcel No.	Proposed Use	GFA	7 - 9 A.M. IN	7 - 9 A.M. OUT	4 - 6 P.M. IN	4 - 6 P.M. OUT
20A,B,C,	Light Manufacturing	N/A				
21	NCC	N/A				
22	Offices	1,089,000	2,069	392	207	1,612
23A	Research & Develoment	N/A				
23B	Office	N/A				
24	Police HC	N/A				
25	United Parcel Serv.	N/A				
26A	Office, Manufacturing, Warehouse	N/A				
26B	Office, Warehouse	N/A				
26C	Office	25,300	48	9	5	37
	Manufacturing	12,311	9	1	1	8
	Research Dev.	8,829	10	1	1	13
	Total	46,440	67	11	7	58
26D	Office	110,000	209	40	21	163
	Manufacturing	25,000	18	2	2	17
	Warehouse	65,000	94	11	11	95
	Total	200,000	321	53	34	275
26E	Office	184,793	351	67	35	274
	Manufacturing	13,462	10	1	1	9
	Warehouse	21,939	32	4	4	32
	Total	220,194	393	72	40	315

TABLE 2 (Contd)

Peak Period Traffic Generation Estimates for Proposed Uses in Mitchel Field

Parcel No.	Proposed Use	GFA	7 - 9 A.M. IN	7 - 9 A.M. OUT	4 - 6 P.M. IN	4 - 6 P.M. OUT
27	N.C. Park	N/A				
28	Office	400,000	760	144	76	592
29						
30		N/A				
31A		N/A				
31B	Office Manufacturing	N/A				
32	Hebrew Academy	N/A				
33	National Guard	N/A				
34	Hofstra University	N/A				
35	Hofstra University	N/A				
36	Veterans Memorial Coliseum	N/A				
37	Marriott Hotel	N/A				
38		N/A				
39	Office	141,600	269	51	27	210
40	DeMatteis Corp	(See Parcel No.41 below)				
41	Offices	1,120,275	2,129	403	213	1,658

TABLE 2 (Cont'd)

Peak Period Traffic Generation Estimates for Proposed Uses in Mitchel Field

Parcel No.	Proposed Use	GFA	7 - 9 A.M. IN	7 - 9 A.M. OUT	4 - 6 P.M. IN	4 - 6 P.M. OUT
42		N/A				
43		N/A				
44B	Office ****	265,359	655	65	165	710
44C	Office	87,163	166	31	17	129
45	Office	236,000	449	85	448	349
	Medical/Dent.	15,000		89		96
		251,000	449	179	448	445
46		N/A				
47A		N/A				
47B		500,000	950	180	95	740
48	Office	N/A				
49	TOH Sen. Housing	N/A				
50	TOH Multi-Fam. Housing	N/A				
			11,510	2,980	2,371	9,405

* Estimates are calculated using standards of the Institute of Transportation Engineers

** MSBA - 24 hour total of 584 bus trips is estimated

*** The Town of Hempstead DEC estimates that there will be 250 -300 trucks per day if recycling center goes on line. Sixty percent (60%) of the traffic is anticipated to take place before 11:00 A.M. Thirty percent (30%) were arbitrarily assigned to arrive and depart before 9:00 A.M.

**** Estimates taken from Environmental Impact Statement prepared by Edward J. Sharsky, P. E., P.C.,Consulting Engineers

N/A Not applicable as generations are indicated in existing traffic counts

Origin and Destination of the Traffic

The distribution of the impacts on the highway system resulting from the development within the Mitchel Field study area were based on the following:

1. A report entitled A Profile of the Nassau Suffolk Labor Force published in 1973 by the Nassau-Suffolk Regional Planning Board; as well as, a report entitled The Roosevelt Field Area, published in 1977 by the Nassau County Planning Commission. Both of these documents, which examine the 1970 U. S. Census, state that 70 percent of the Nasssau County labor force originates from within the County, while Suffolk County contributes 15 percent. The remaining 15 percent, it is explained, originates in New York City and points west.

2. An evaluation that 70 percent of the labor force from Nassau County will be drawn proportionately from the surrounding population.

3. The distribution of traffic along the access routes will be in proportion to the surrounding population.

Plate No. 3 divides Nassau County into eight zones. These zones were drawn around the access routes to the Mitchel Field study area. Once the eight zones were defined, the population estimates for the communities encompassed within each zone were established. In addition, ratios were also established to reflect the assumption that 70 percent of the labor force would originate from Nassau County. Table 3 provides a listing of the percentages apportioned to

each zone. Table 4 then follows with a listing of the estimates of peak period traffic generations by zone.

The traffic to and from Suffolk County (representing 15% of the total) was distributed equally between the Northern and Southern State Parkways and then brought into the study area and assigned to the Meadowbrook Parkway. North of the study area, traffic was assigned to either the Meadowbrook Parkway or Merrick Avenue depending upon the location of the destination and access points within the Mitchel Field area.

Traffic originating and destined to New York City and points west (15% of total) was apportioned similarly between the Northern and Southern State Parkways. Consideration was also given to westbound traffic using Hempstead Turnpike; once again depending upon the location of the parcel and its points of entry and exit within the study area.

The properties being considered for development in the future were plotted on individual work sheets. Traffic movements occuring at the peak P. M. hour, both to and from the parcels in the study area, were plotted along the most direct routes. Plate No. 4 is the sum total of the individual estimates. Thus, this graphic indicates the volume and distribution of traffic anticipated in the study area during the peak

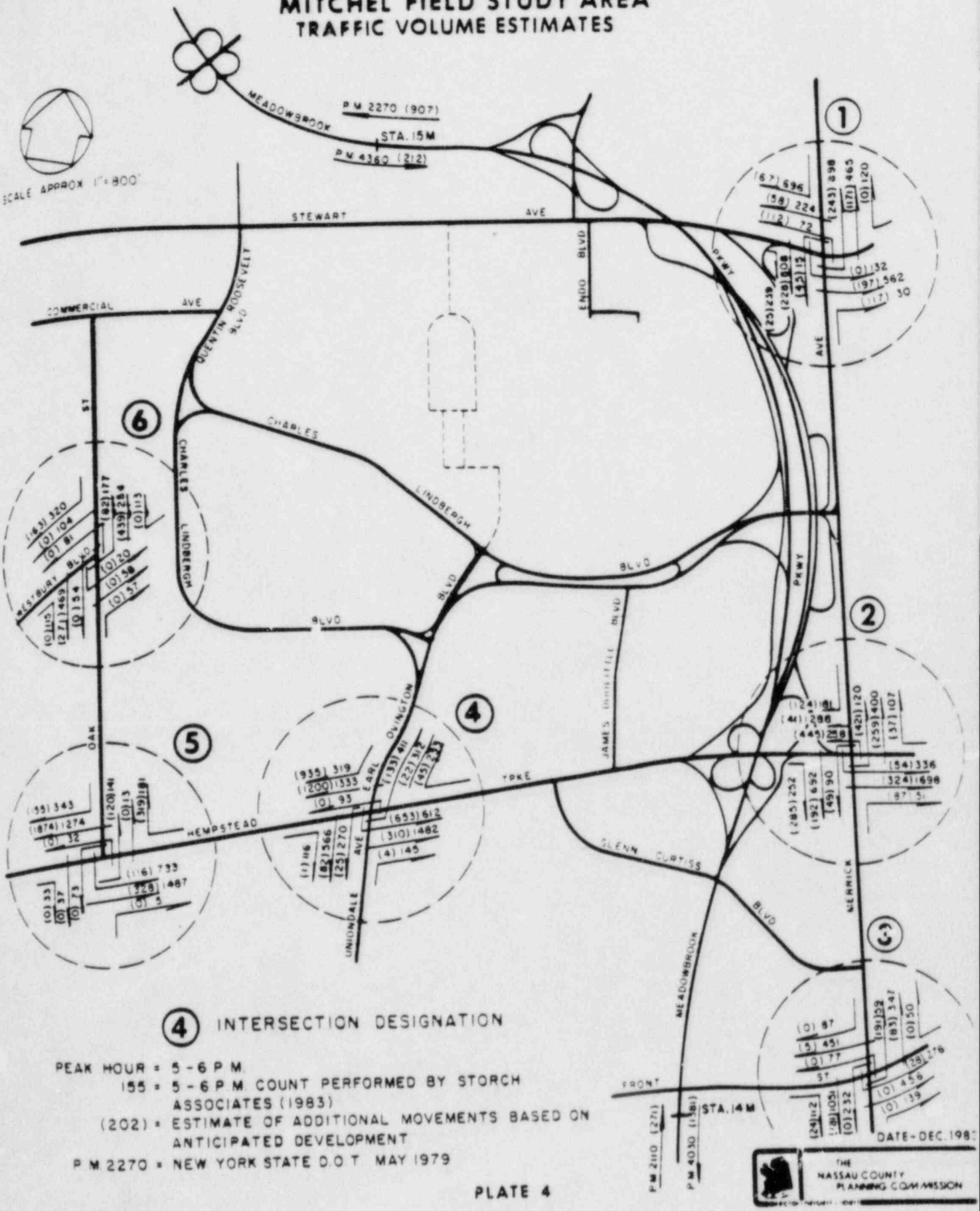
ZONES OF ORIGIN AND DESTINATION
RELATING TO MITCHEL FIELD STUDY AREA

(5) ZONE DESIGNATION

THE NASSAU COUNTY PLANNING COMMISSION

PLATE 3

MITCHEL FIELD STUDY AREA
TRAFFIC VOLUME ESTIMATES



(4) INTERSECTION DESIGNATION

PEAK HOUR = 5 - 6 P.M.
155 = 5 - 6 P.M. COUNT PERFORMED BY STORCH ASSOCIATES (1983)
(202) = ESTIMATE OF ADDITIONAL MOVEMENTS BASED ON ANTICIPATED DEVELOPMENT
P M 2270 = NEW YORK STATE D.O.T. MAY 1979

PLATE 4

DATE - DEC. 1983

THE NASSAU COUNTY PLANNING COMMISSION

TABLE 3

ORIGIN AND DESTINATION OF LABOR FORCE

IN THE MITCHEL FIELD STUDY AREA

New York City and Points West	15%
Suffolk County	15%
Nassau County (See Map No. 3)	

Zone	Percent of Population	Portion of 70%	
1	7%	4.9	
2	4	2.8	
3	14	9.8	
4	12	8.4	
5	21	14.7	
6	2	1.4	
7	30	21.0	
8	10	7.0	
	100%	70%	$\frac{70\%}{100\%}$

LILCO Population Estimate January 1, 1980.

TABLE 4

PEAK PERIOD ESTIMATES OF TRAFFIC GENERATION FOR MITCHEL FIELD PROPOSED DEVELOPMENT

Time	NYC		Suffolk		Nassau County Zones:								
7-9 A.M.	So.	No.	So.	No.	1	2	3	4	5	6	7	8	Total
In	863	863	863	863	564	322	1,128	967	1,692	161	2,418	806	11,510
Out	223	223	223	223	146	83	292	250	437	42	625	208	2,975
4-6 P.M.													
In	178	178	178	178	116	66	232	199	349	33	498	166	2,371
Out	705	705	705	705	461	263	922	790	1,383	132	1,976	658	9,405

TABLE 5

IMPACT OF PROPOSED DEVELOPMENT ON CRITICAL INTERSECTIONS

Intersection	Direction	1983 Peak Hour Traffic			Additional Traffic Estimate			Estimate for Peak Hour Total		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Merrick Ave. & Stewart Ave.	North	72	465	30	112	1,171	117	184	1,636	147
	South	132	808	696	-0-	228	67	132	1,036	763
	East	898	562	239	243	197	25	1,141	759	264
	West	15	224	120	45	58	-0-	60	282	120
Hempstead Tpke. & Merrick Ave.	North	258	400	51	445	259	87	703	659	138
	South	336	692	181	54	192	124	390	884	305
	East	120	1,698	252	421	324	285	541	2,022	537
	West	90	1,288	107	49	41	37	139	1,329	144
Front St. & Merrick Ave.	North	77	347	139	-0-	83	-0-	77	430	139
	South	276	1,051	87	28	181	-0-	304	1,232	87
	East	59	456	112	191	-0-	24	250	456	136
	West	232	451	50	-0-	5	-0-	232	456	50
Hempstead Tpke. & Uniondale Ave.	North	93	312	145	-0-	22	4	93	334	149
	South	612	566	319	653	82	935	1,265	648	1,254
	East	411	1,482	116	133	310	1	544	1,792	117
	West	270	1,333	233	25	1,200	45	295	2,533	278
Hempstead Tpke. & Oak St.	North	32	13	5	-0-	-0-	-0-	32	13	5
	South	733	37	343	116	-0-	155	849	37	498
	East	141	1,487	33	120	328	-0-	261	1,815	33
	West	73	1,274	181	-0-	1,874	319	73	3,148	500
Oak St. & West Blvd.	North	81	254	57	-0-	439	-0-	81	693	57
	South	20	469	320	-0-	271	163	20	740	483
	East	177	58	115	82	-0-	-0-	259	58	115
	West	54	104	113	-0-	-0-	-0-	54	104	113

P.M. period. Included in these figures are existing traffic counts, as well as, estimates of traffic that will be generated as a result of future development.

Calculation of Capacity

The key issue that must be addressed is the ability of the highway system to handle the volumes estimated. Of critical importance are the signalized intersections serving the study area. Traffic counts taken by Storch Associates, Hempstead, New York, in March and October 1983, measured the existing traffic at six key intersections within the study area. Table 5 lists these intersections. These measurements, taken at the P.M. peak hour when added to the estimates of traffic that will be generated from development in the future provide a forecast of the volumes anticipated when development at Mitchel Field is completed. It should be pointed out that this forecast only addresses activity resulting from development within the study area and does not take into account any development that might take place outside of the "Mitchel Field Study Area", as defined at the outset of this report.

At each of these intersections, a "Critical Movement Analysis", based on the methodology outlined in "Transportation Research Circular, Number 212", of the Transportation Research Board was performed and recorded. The corresponding forms[2] are contained in this

2 See Appendix F, Pages 112-125

report. The intersections are designated one (1) through six (6).

The calculations consider the following three (3) conditions: (a) existing land use and proposed land use; (b) 1983 existing traffic; and (c) existing and proposed land use including proposed TOPICS improvements at the two intersections in East Meadow. A summary of these findings is found in Table 6. The explanation of the Levels of Service is found in Table 7.

Of the six intersections studies, only Oak Street and Westbury Boulevard will maintain stable flow upon the completion of development within the "Mitchel Field Study Area". The two intersections scheduled for improvement under the TOPICS program (Hempstead Turnpike and Merrick Avenue and Front Street and Merrick Avenue) will exceed an E Level of Service during the P.M. peak hours regardless of the improvements made; by 438 and 6 movements, respectively.

The conditions forecasted above will result in "forced flow" at the intersections evaluated in this report. It therefore is necessary to consider various means that might be used to alleviate these situations. They include:

1. Reassessing the type and scale of development proposed
2. Encourage the practice of flexible or staggered working hours

3. Develop and encourage the use of mass transit, car and van pooling

4. Improve the intersections to be affected to include grade separation at key intersections

5. Lengthen the peak period of traffic flow to more than one hour

6. Form a consortium among the occupants of Mitchel Field to discuss staggered working hours, flextime, and traffic issues

Machine counts on the internal roadway system were performed in 1978. These counts were made by recording the number of vehicles passing through various check points. Although more current counts are not available, projections made in 1980, based on anticipated development indicated that given the geometry of the internal road system, the projected volumes could be accommodated.

Meadowbrook State Parkway

As indicated at the outset of this report, a portion of the Meadowbrook State Parkway runs through the eastern portion of the study area. Traffic flow would have to be directly affected by the development at Mitchel Field.

TABLE 6

Levels of Service

	Existing L.O.S. *Based on 1983 Counts	Existing + Proposed Volume L.O.S.	Existing + Proposed Volume w/ Proposed Improvements
Merrick Ave. & Stewart Ave.	E 7 Movements Above a D Rating	F 483 Movements Above an E Rating Potential for Improvement at the Intersection	No improvements Currently Planned
Hempstead Tpke. & Merrick Ave.	E 5 Movements Above a D Rating	F 486 Movements Above an E Rating	F 438 Movements Above an E Rating
Front St. & Merrick Ave.	F 71 Movements Above a E Rating	F 186 Movements Above an E Rating	F 6 Movements Above an E Rating
Hempstead Tpke. & Uniondale Ave.	F 65 Movements Above an E Rating	F 805 Movements Above an E Rating	No Improvements Currently Planned
Hempstead Tpke. & Oak St.	E 13 movements above a D rating	F 519 movements above an E rating	No Improvements Currently Planned
Oak St. & Wesbury Blvd.	A	C 119 movements above a B rating	No Improvements Currently Planned

*L.O.S. - Level of Service - A measure of mobility characteristics of an intersection, as determined by venicle delay and volume/capacity ratio. As measured on a scale from A to F, A is free flow and F is a forced flow.

TABLE 7

Level of Service Descriptions

Level of Service	Traffic Flow Description
A	Free Flow
B	Stable Flow
C	Stable Flow
D	Approaching Unstable Flow
E	Unstable Flow
F	Forced Flow

Maximum Sum of Critical Volumes (VPH)

	Two Phase	Three Phase	Four or More Phases
A	900	855	825
B	1,050	1,000	965
C	1,200	1,140	1,100
D	1,350	1,275	1,225
E	1,500	1,425	1,375
F	Not Applicable		

Source: Transportation Research Board
Transportation Research Circular January 1980

Table 8 lists traffic counts taken on the Parkway in 1979 at two locations. As later counts were not available at the time of this writing, estimates of traffic generations resulting from the activity of all the parcels in the study area were added to the 1979 counts. Thus, the total number represents an estimate of the peak P.M. hour volumes anticipated at two locations on the Meadowbrook Parkway. The two points are indicated as station 15M (located immediately north of the study area), and station 14M (located south of Front Street).

At present the Parkway has three (3) lanes in each direction. Using the projections found on Table 8, it is indicated that the P.M. peak hour movements will exceed the recommended capacity of 6,000 passenger vehicles per hour[2] at station 14M, southbound by 549 vehicles. This estimate and the trends indicated point out the need to address accommodating the additional volumes anticipated during the peak traffic periods.

Overall, the development of Mitchel Field will have a major impact on the intersections and road network immediately surrounding the study area.

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2 Highway Research Board of the Division of Engineering and Industrial Research, 1965. Highway Capacity Manual. Washington, D. C.: National Academy of Sciences, National Research Council, P. 76.

TABLE 8

Average Weekday Traffic Counts and Estimates

For the Meadowbrook Parkway

	24 Hour		5 - 6 P.M.	
Direction	North	South	North	South
Station				
14M	43,370	39,360	2,110	4,030
Estimated Additional Volume*			640	2,519
			2,750	6,549
15M	43,590	42,860	2,270	4,360
Estimated Additional Volume*			907	212
			3,177	4,572

Source: N.Y.S. D.O.T. May 1979

* N.C.P.C. Estimates

However, it is anticipated that several occurrences will be experienced. While this paper addresses a peak period of one hour, it can be expected that much of this volume will become spread over two hours. This will be the result of the anticipated use of flextime and staggered work hours, as well as some adjustment of travel habits.

Additionally, as people experience different conditions on the road system, they will disperse to different routes. This dispersion will also modify the anticipated impact of the volumes generated from various parcels in the area.

Therefore, it remains that while the additional traffic generations resulting from the development of Mitchel Field will certainly increase traffic volumes and impede travel time, the mitigating measures discussed herein can be employed to help manage the impacts.

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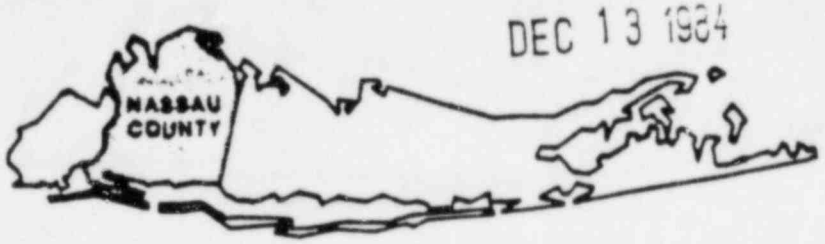

NASSAU COUNTY PLANNING COMMISSION

December 11, 1984

Henry Williams, Commissioner
New York State Department of Environmental Conservation
50 Wolf Road
Albany, N. Y. 12233

Re: NCPC FILE NO.5-1985 - S.E.Q.R.
FINAL G.E.I.S. - MITCHEL FIELD
UNIONDALE, TOWN OF HEMPSTEAD
NASSAU COUNTY, N. Y.

Dear Commissioner Williams:

Enclosed is a certified copy of a resolution adopted by the Nassau County Planning Commission on Thursday, December 6, 1984 containing the "Findings" of the Nassau County Planning Department with regard to the above-mentioned project.

As indicated in the resolution, the Commission accepted the Department's Findings and forwarded them to the Nassau County Board of Supervisors.

Very truly yours,

JOHN W. FOLLIS, JR.
Deputy Direcctor

enc.
JWF/fp

cc: (see attached list)

WHEREAS, in accordance with Section 617.9 of Part 617 of Title 6 NYCRR and Section 1611 of the County Government Law of Nassau County, the NASSAU COUNTY PLANNING COMMISSION makes the following findings in regard to the Final Generic Environmental Impact Statement for Mitchel Field, dated October 18, 1984:

(4) Traffic Congestion

Development of Mitchel Field is expected to have a major impact upon traffic flow in the area. There will be delays at intersections, slower movement of vehicles on the surrounding road network, and heavier demands upon the mass transit system. Several of the intersections actually will fall to a "Forced Flow" Level of Service -- the worst-case-trafic-flow-description of six categories listed, unless improvements are implemented.

The urgency of needed improvements is likely to force early implementation of corrective measures in the area. Already, commitments have been made for intersection improvement, bus routes have been realigned, and a more-detailed study of the transport network is under way.