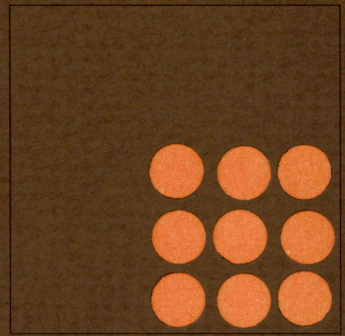


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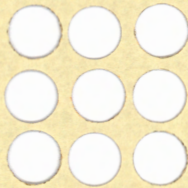


**TOPICS**  
**Town of Secaucus**  
**Hudson County, New Jersey**

RICHARD P. BROWNE ASSOCIATES

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# **TOWN OF SECAUCUS TOPICS STUDY**

**NEW JERSEY DEPARTMENT OF TRANSPORTATION**

IN COOPERATION WITH

THE TOWN OF SECAUCUS

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

JUNE, 1973

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## I - OBJECTIVES AND BENEFITS OF THE TOPICS PROGRAM

### Introduction

Over the past fifteen years, vast sums of money and a great expenditure of effort have produced the nationwide Interstate Highway network which is now nearing completion. This system has proved to be very effective in meeting the long distance intercity highway needs of the country, but as soon as these expressways approach the cores of our metropolitan regions they frequently compound the problems of the already traffic laden streets. These existing traffic flow networks are frequently over loaded and operate inefficiently, which cause drivers to lose patience and contribute to the probability of accident occurrences.

TOPICS, the acronym for "Traffic Operations Program to Increase Capacity and Safety", is a program designed to effectively channel Highway Trust funds into revitalizing the traffic networks of the urban areas. TOPICS began as a demonstration model in 1967, funded by the U.S. Department of Transportation. This federal support was and is intended to provide encouragement and assistance to local governments in developing and implementing improvements to existing urban streets and highways. This program, as outlined in a Policy and Procedure Memorandum (PPM 21-18) issued in May 1971, hence, can be considered as the next significant step, after the Interstate Program, toward the ultimate goal of creating a well-coordinated, effective national transportation system.

A transportation system connects various communities to one another and also ties together the disparate parts within a metropolis. Part of this system is the road and street network which is the fabric that holds a modern community together. Interwoven into this fabric are the threads of our public transit system. Increased usage of these public transportation facilities must be encouraged to help preserve our limited natural and economic resources.

At present, despite the proven passenger carrying capability of buses, rapid rail transit, and airplanes, only the automobile (despite its detractor's comments) provides the individual with the unlimited freedom of choice and maximum flexibility which he desires (in fact, demands) for his personal transportation needs. Since no totally new mode of personalized conveyance can possibly be fully developed and widely adapted in less than a decade, we must make every possible effort to obtain the best utilization of our existing motor vehicles and roadway facilities.

## Study Objectives

The primary objective of the TOPICS study is to evaluate the efficiency of the existing network of streets and highways in fulfilling the community's transportation requirements. The overall purpose of the TOPICS program is to get the maximum operational improvement on the street system while incurring the minimum of cost and delay.

A TOPICS study consists of an area-wide examination of the major street system, and includes a physical inventory of the roadway characteristics, traffic control devices, traffic volume data, and accident occurrences. Needed operational improvements are identified and analyzed to determine traffic improvement priorities and a program for actual implementation is prepared. This must be fully coordinated and made compatible with all present transportation planning and foreseeable developmental projects.

More specifically, the study phase is intended to evaluate the ability of all major roads and streets in urban areas to meet short-range needs more safely and efficiently. Sufficient data will be gathered and evaluated to enable the logical selection of a new Federal-Aid Primary Highway System (hereafter called the TYPE II SYSTEM) which will encompass all the major through traffic urban streets and highways on which a community depends for its economic growth and development.

Specific recommendations will be made which provide for maximum utilization of these existing roadways. Those operational modifications that provide for improved traffic flow along major routes and reduce delay and/or accidents will be emphasized. Some examples of improvements that will be considered are:

Channelization of intersections.

Widening of traffic lanes.

Addition of new lanes on intersection approaches.

Installation of control systems to make traffic signal operation responsive to traffic conditions.

Addition and/or upgrading of traffic signals, signs and markings.

Installation and/or upgrading of highway lighting.

Prohibition of parking and/or parking restrictions.

Construction of short highway sections to provide continuity in the route system.

The new Type II System has the capability of adding and deleting streets from the existing Federal-Aid Primary, Federal-Aid Urban and Secondary Systems. This new network, when approved, will allow municipalities and counties to receive Federal-Aid on a 50-50% matching fund basis in order to construct improvements found desirable by the TOPICS study process.

## Local Community Benefits

### (1) Prompt Implementation

The sole purpose of this study and report is to assure that a systematic approach is taken toward achieving the goals of increased capacity and safety on urban streets and to assure that the money spent is wisely used. Implementation can be as simple as the painting of proper pavement markings or as complex as the installation of a computerized traffic signal system.

No direct benefits can be derived from this study report until action is taken by the community to implement some of the priority recommendations. Once improvements are constructed, the public will begin to reap profits immediately through reduced travel time as well as decreased accident costs and injuries. These savings accumulate each day. A second advantage resulting from prompt implementation is lower construction cost. It is a fact that over the past decade construction costs have risen steadily, almost without interruption. The case of a net savings being made by delaying construction of a job would be a rare instance indeed.

Motorists tend to avoid crowded, congested arterial thoroughfares and seek alternate routes through an area, thus, in many communities local residential streets are forced into serving as arterial streets. This is a function for which they are not intended, and cannot provide. By improving service on the designated arterial roadways we can attract these motorists back to the proper through corridors and reduce noise, pollution, and vehicular traffic in residential areas.

These are some of the reasons why the Federal Government considers TOPICS so important that it has made available grants of 50% towards the study, construction and evaluation costs. The State of New Jersey has further enhanced the TOPICS program by providing an additional 37 1/2 % of the study costs and 50% of the implementation cost, within the limit of allocated funds.

### (2) Regular Evaluation

Evaluation is a necessary part of any innovative project. Initially after the recommended modifications are made, there may be a short period of time during which drivers adapt to the new conditions. This adjustment period should be carefully observed and if, after a few weeks the effect on traffic operations or accidents does not improve, minor revisions may be necessary to insure the corrective benefits.

Only by observation and evaluation at regular intervals can changes in traffic circulation patterns be detected. As these changes occur, further refinements to the control system may be required.

(3) Effective Maintenance and Operation

A planned program of preventive maintenance must be undertaken to assure continuous operation of all traffic control devices and the free flow of traffic. The savings in reduced accidents and from more efficient operation accruing to the motoring public will be increased by good maintenance. If, for example, a stop sign is damaged or a traffic light bulb burns out, the accident risk is increased until a new sign or bulb is installed. Whether it is normal wear and tear, an accident, or malicious vandalism which makes a control or warning device unclear or inoperative, prompt remedial action must be taken to repair the defect.

(4) Strict Enforcement

The best made designs cannot work if no one carries out the plan. If the recommendations of this report are accepted and adopted, followed by the passing of necessary resolutions, then strict enforcement of these regulations must follow so that the program may reach a successful conclusion. For example, if a peak hour parking ban is imposed on a street, failure to promptly tow away any violators will nullify the objective of the ordinance. However, if the police feel that they cannot (for good reason) enforce a regulation, then it should be reviewed by the engineer and municipal council. All parts of the improvement plan should be practical. Being lenient with one violation always encourages others to try to ignore that and other rules, which soon leads to the failure of the entire program.

## II - STUDY AREA

### Regional Setting

The Town of Secaucus is an industrial and transportation hub, of approximately 14,000 persons located in northwestern Hudson County within three miles of downtown New York City. It is located within the largest metropolitan region in the United States, and as such, shares in the problems as well as the advantages of being within the sphere of influence of much larger cities, such as Newark, Jersey City and especially New York City. A major problem is providing adequate transportation facilities to handle the large flow of people into and out of the New York Metropolitan Area. In addition a large number of industrial and transport related activities are based in Secaucus, and serve to add a sizeable amount of trucks to its roadway system.

The map on PLATE I shows the location of Secaucus within this region, and the major highways which connect it to New York City and the surrounding areas. The major north-south highways serving Secaucus are the New Jersey Turnpike (Interstate Route 95), and nearby U.S. Route 1 and 9. State Highway 3 (Interstate 495) serves as the major east-west thoroughfare through the town. These highways all experience periods of excessive demand volumes during peak commuter hours with heavy congestion and overcrowding resulting.

State Highway 3 (Interstate 495) provides direct access into New York City via the Lincoln Tunnel, and during the morning and evening rush hours, heavy congestion and delay are experienced. An exclusive bus lane has been established along Interstate 495 during the morning peak period for service into the city. Additionally, for motorists not choosing to drive their own vehicles into the city, there are Park and Ride lots located nearby to Secaucus where an individual can park his vehicle and board a bus for the short trip into the city.

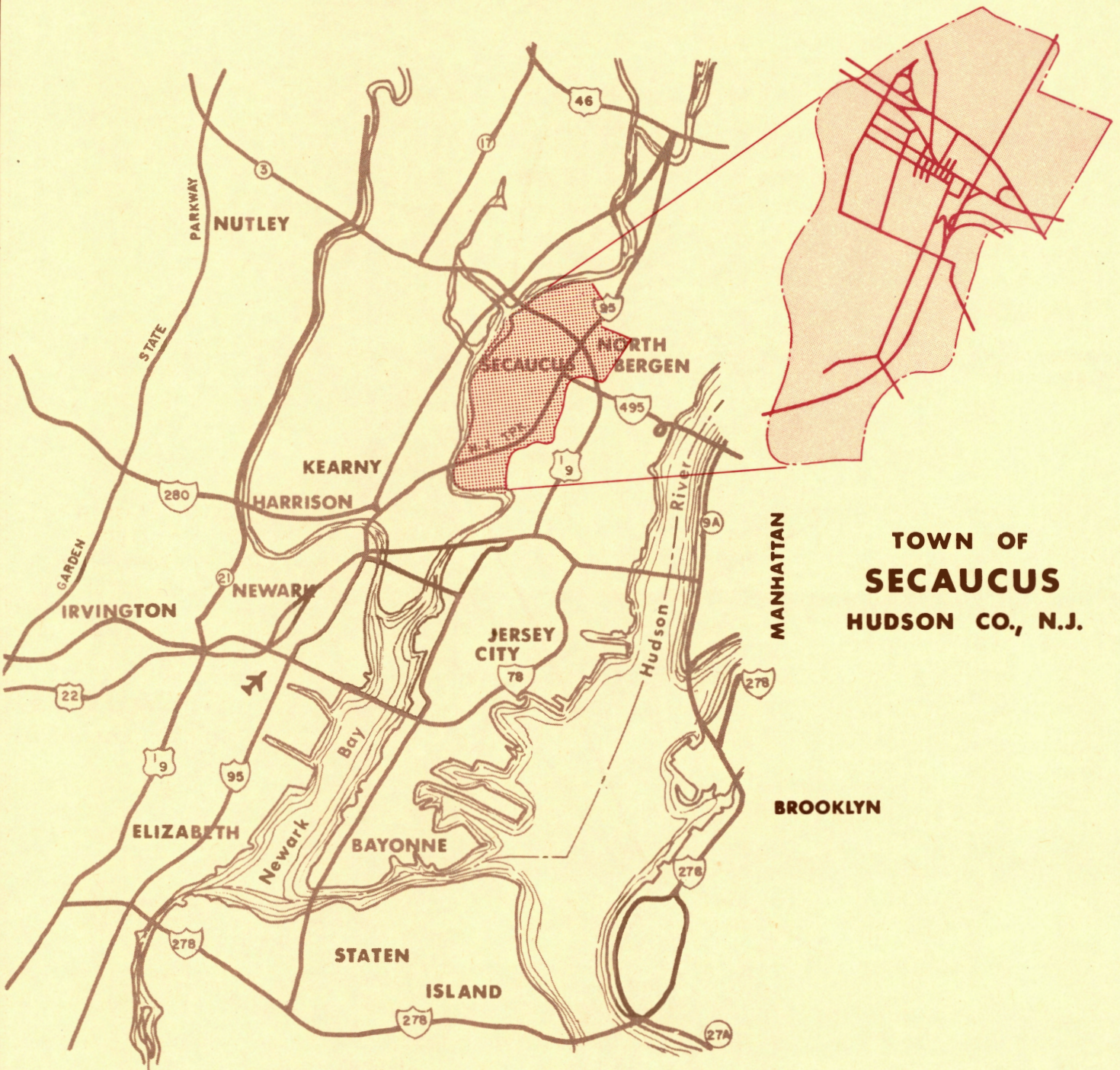
Public Bus service within the town is quite good, with the ability to make connections to the major metropolitan areas in the surrounding region. There is no passenger rail service provided for within Secaucus, even though the Erie-Lackawanna Railroad runs through the community.

Access to air transportation facilities are more than adequate. Newark Airport is easily reached in 15 minutes driving time on the Turnpike, while John F. Kennedy International and LaGuardia Air terminals are within an hours drive. Teterboro Airport, a general aviation facility, can be reached in approximately 15 minutes driving time. The only access to all of these aviation facilities is by highway.

## Roadway Study System

The network of roads and streets included in this evaluation was determined through consultation with both local and state officials prior to commencing the study. This system included all streets and highways currently in the Federal-Aid Highway Systems as well as all arterial streets primarily carrying through traffic and the major collector streets leading to and comprising the central business district. This study network is shown on PLATE II. Many of these streets are presently under one or more of the following designations.

- (1) The National System of Interstate and Defense Highways consists of the routes of highest importance to the nation, and are intended to serve mainly interstate or interregional traffic. These highways receive Federal matching aid grants for construction at a ratio of 90% Federal-10% State funds. Segments of these highways scheduled for completion in the near future will have significant effects on regional traffic patterns.
- (2) The Federal-Aid Primary Highway System consists of major city-to-city highways, including their urban extensions, which are not part of the interstate system. This system is limited in mileage by law and is eligible for federal participation equal to 50% of total costs of improvements. No changes in highways with this designation are contemplated.
- (3) The Federal-Aid Secondary Highway System consists of farm-to-market roads in rural areas and the major feeder routes into a city. Intra-urban arterial highways not on the above systems may also qualify for this designation. These roads usually receive matching federal funds on a 50%-50% basis for construction. This mileage is flexible and some additions and/or deletions to this system may be proposed as a result of this TOPICS study.
- (4) The Federal-Aid Urban System is a new federally aided road system within the urbanized areas and for which matching federal funds on a 50%-50% basis for construction are available.
- (5) The New Jersey State-Aid Systems include most arterial highways and major collector streets not presently in a Federal-Aid System. All of the existing State-Aid roads are incorporated in the study network.
- (6) Those major municipal streets which are necessary to assure continuity of circulation have also been integrated into the study grid. These streets, primarily within the central business districts, are vital to the continued existence of a healthy urban environment.



TOWN OF  
**SECAUCUS**  
HUDSON CO., N.J.

**TOPICS STUDY AREA**



**CARLSTADT BOROUGH**

**EAST RUTHERFORD  
BOROUGH**

**RUTHERFORD  
BOROUGH**

**NORTH  
BERGEN  
TOWNSHIP**

**TOWN OF  
SECAUCUS  
HUDSON COUNTY N.J.**

**LYNDHURST  
TOWNSHIP**

**STUDY SYSTEM  
MAP**

**JERSEY CITY**

**TOWN OF KEARNY**

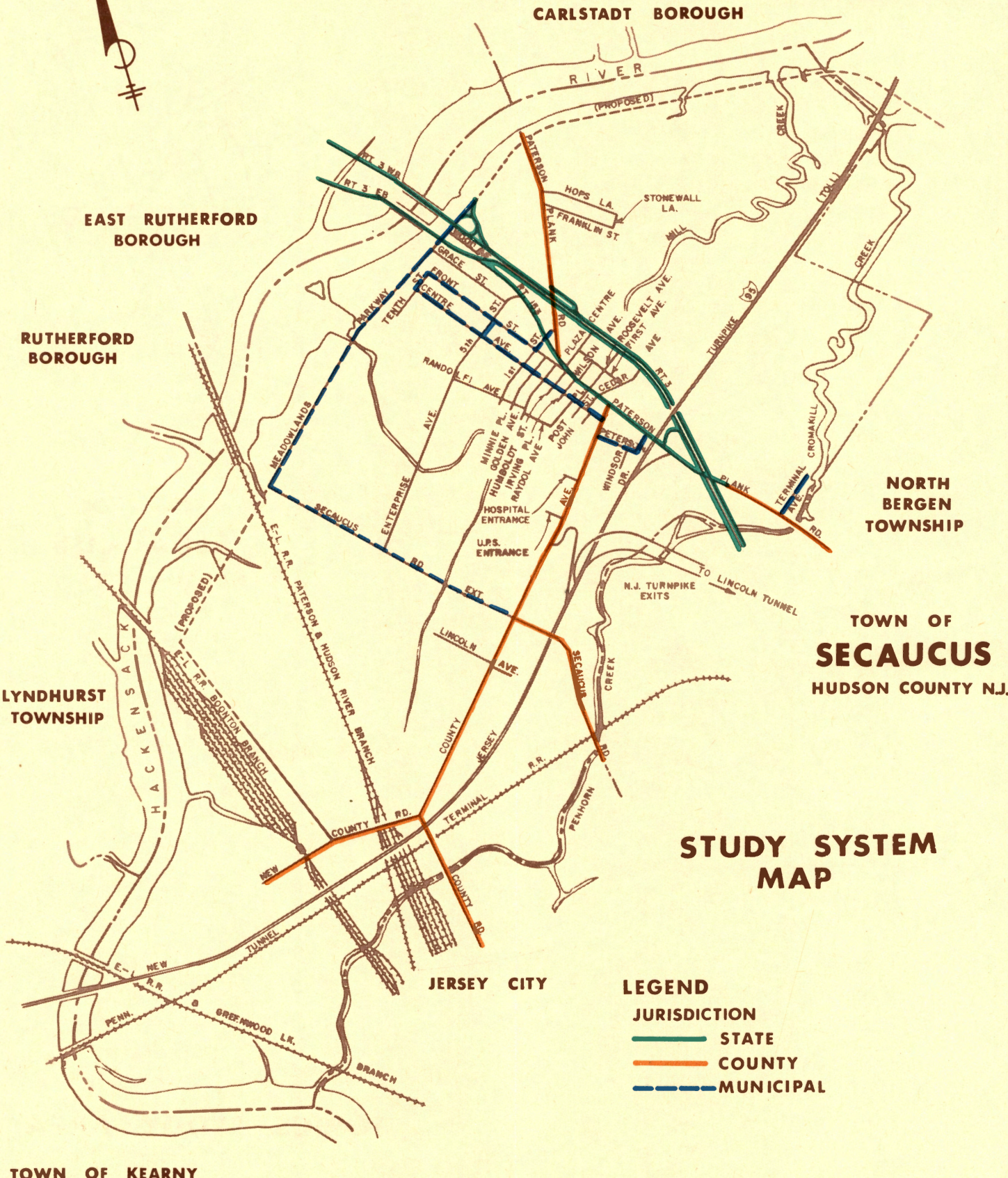
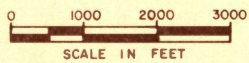
**LEGEND**

**JURISDICTION**

— STATE

— COUNTY

- - - MUNICIPAL



### III - IDENTIFYING PROBLEM AREAS - SYSTEMS APPROACH

The initial objective of the study is identification of problem areas which cause significant traffic congestion and/or driver confusion, which combined lead to intemperate driver reactions and produce high accident rates. The approach taken to isolate the areas requiring further detailed study is outlined on the TOPICS FLOW DIAGRAM (PLATE III). Basically, four input factors have been considered.

#### Speed and Delay Studies

One way to identify problem areas is to drive over a road or street during peak traffic hours. If this is done frequently, as on daily trips to the office or train station, the locations where congestion generally occurs become obvious within a few weeks. To speed the process of locating these problem areas while obtaining a permanent record which can later be analyzed in detail, an Automatic Traffic Data Compiler has been used. This device automatically plots a continuous graph of vehicle speed versus travel time. By identifying previously chosen check points, the location and duration of all delays can be noted, along with the cause of each delay. In addition, overall travel speeds and/or total delay times for each link of a given route can be determined. Thus not only is total stop time recorded, but "stop and go" situations which may continue for several blocks or even miles are easily spotted.

A minimum of two runs in each direction along a route is made during both the morning and evening peak traffic hours, as well as two off-peak runs for comparison. Points or areas of congestion determined by these speed and delay studies are used in conjunction with the other input parameters to locate the prime problem areas.

#### Accident Records

Locating areas with a serious safety deficiency is accomplished by reviewing the accident history of the municipality. Unfortunately, this data might not be filed in a manner suitable for use by the traffic engineer or traffic safety officer. The most advantageous method of filing accident records is by location. This method enables one to quickly prepare an accident location map which will very clearly indicate the most hazardous locations.

The accident records of the Secaucus Police Department were filed by location, thereby, simplifying the identification process. However, accident records for those occurring on state and county highways were maintained by the county and filed in a different manner which made identification difficult and time consuming. Nevertheless, data on all accidents which occurred on the study system for the years 1969 through 1971 was obtained. Such data included accident locations, date, type of accident, severity, time of day, and weather conditions.

The total number of reportable accidents occurring at each intersection is plotted on an accident location map. An accident rate, which is the annual number of collisions per ten million vehicles entering the intersection from all directions, is then computed for each intersection. This rate provides a common basis for comparison even when traffic volumes vary considerably. Similarly, for each roadway segment with above average collisions experience, the number of accidents per million miles of vehicle travel is calculated. This aids in identifying dangerous highway sections between intersections. Thus, accident experience is the second input parameter for determining trouble spots.

### Capacity Analysis and Level of Service

Capacity is defined in the Highway Capacity Manual - 1965 as "the maximum number of vehicles which has a reasonable expectation of passing over a given section of a roadway during a given time period under prevailing roadway and traffic conditions". Using the data collected during the roadway conditions and parking inventories and the traffic signals and regulations inventories, we can calculate within reasonable tolerances the capacity of the road or street. This is then compared to present day traffic volumes to determine where deficiencies exist.

To further describe the quality of travel on a given roadway, the Highway Capacity Manual defines operating conditions as several levels of service.

Level of Service "A" is described as a condition of free flow, with low traffic volumes and high operating speeds. The driver encounters little or no restriction in maneuverability due to the presence of other vehicles.

Level of Service "B" is in the zone of stable flow, with operating speeds beginning to be reduced somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation.

Level of Service "C" is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. Drivers experience more restrictions on speed, lane changing and passing.

Level of Service "D" approaches unstable flow, with tolerable operating speeds being maintained. Drivers have little freedom to maneuver, and comfort and convenience are low, but conditions can be tolerated for short periods of time.

Level of Service "E" represents operations with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages of momentary duration.

Level of Service "F" is described as forced flow operation at low speeds, where volumes are below capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream.

Those locations which show a level of service less than "C" or a deficiency in capacity are then identified and incorporated as the third parameter for determination of locations requiring detailed study and corrective action.

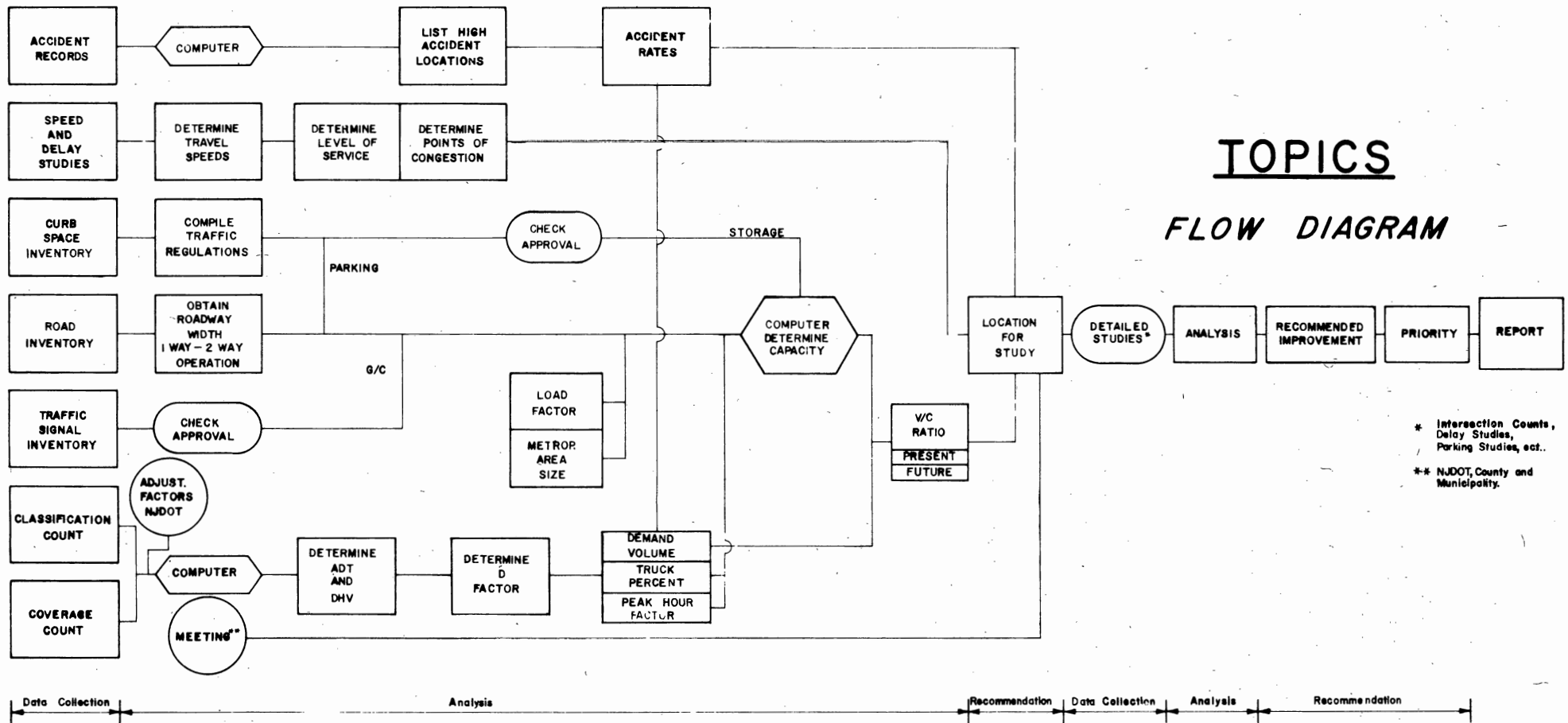
### Local Participation

This input, while the hardest to quantify and evaluate, is nevertheless of equal importance with the other factors discussed above. Local police, public officials, and citizens concerned with traffic safety and movement are already aware of many of the problem locations within the community which a traffic engineering study will identify. Their knowledge can call to the attention of the traffic engineer situations which may be inadvertently overlooked in a study undertaken within the confining limits of a strict time schedule.

For instance, many of the manual intersection counts are made during the summer months when manpower is readily available and the weather most cooperative. Thus, a local traffic situation may appear quite different during these months than it is during the remaining nine or ten months of the year when school is in session. At some locations, peak traffic volumes may occur at other than the usual hours due to a large industrial plant changing shifts during normally low volume hours. Further, local representatives are familiar with any proposed roadway improvements and land-use changes which will affect traffic patterns and/or physical street layouts. It is imperative that these changes be evaluated in the context of their overall effect on the area-wide study system.

# TOPICS

## FLOW DIAGRAM



\* Intersection Counts, Delay Studies, Parking Studies, ect..  
 \*\* NJDOT, County and Municipality.



## IV - DATA COLLECTION

The basis for any rational engineering decision or plan must be an accumulation of physical measurements and statistical observations. Sound judgements and good designs can only be made if the data on which they are formulated is accurate and valid. However, the degree of accuracy and validity required does depend on the nature of the project which is contemplated. It is wasteful to spend time and money gathering information which is not necessary to arrive at a sound solution to the problem at hand. Yet not to obtain enough data is again wasteful. Generally, limitations in time and money available often make the task of gathering sufficient statistics a demanding one for the engineer.

### Traffic Characteristics

#### (1) Coverage Counts with Automatic Recorders

The most common type of information collected regarding traffic volumes is two-directional axle counts made with automatic recording counters. The primary reason for the widespread use of this technique is the large volume of data which can be acquired at a relatively low cost in time and manpower. However, this data is frequently misused as the limitations of its applicability are often ignored.

To properly utilize machine counts, an appropriate number of permanent automatic recording stations must first be established to compile a statistical basis for expanding other counts taken for shorter time periods. These permanent stations usually employ a magnetic loop detector encased in or beneath the pavement. This record, preferably covering several years, is necessary to determine daily and seasonal variations in traffic volumes. Due to the limited amount of time for completion of this study, it was only possible to sample the daily variation in traffic occurring along the study streets.

All coverage counts obtained for this study were taken for a 24-hour weekday period, since there was no statistically significant variation in the daily traffic patterns or volumes between Monday noon and Friday mid-day. A manual count was made in conjunction with the machine count at the beginning and end of the 24-hour period to assure that the machine's reliability had been maintained. Analysis of existing data indicates that the maximum day to day variation seldom exceed three percent, which is considered to be the reliability range of the mechanical traffic counting equipment used. Thus, these 24-hour volumes may be considered as the average weekday traffic for the month during which they are recorded. GRAPH I exemplifies the typical daily variation in traffic on the study streets.

## (2) Classification Counts

Since automatic recorders measure only axle counts irrespective of the direction and number of axles to a vehicle, some rather important traffic characteristics cannot be obtained from these machine counts. Thus, manual classification counts are necessary at carefully selected locations to determine the directional distribution (percentage of traffic by direction during peak hours), truck and bus percentages, and axle factors (number of axles per vehicle used to calibrate machine counts).

These manual classification counts, taken for an eight-hour period, also provide a means to check the precision of the automatic recorders over an extended time period. Usually, the machine counts thus checked fall well within the three percent error tolerance guaranteed by the manufacturer. These eight-hour classification counts were made by two men, one counting each direction of traffic in order to keep manual errors to a minimum, particularly during peak hours.

## (3) Intersection Turning Movements

When a specific intersection is to be studied or designed, the actual turning movements of the vehicles approaching from all directions are of primary importance. This information is necessary to assure that the best intersection design can be provided.

Turning movement counts are usually done over an eight-hour duration which include both of the expected peak-volume hours. One man is assigned to count no more than two approach legs which include a maximum of six turning movements. At certain intersections with an odd number of approaches, one-way streets, or usually heavy (or light) traffic, the standard procedure requiring two men is altered to meet the site conditions. As a check on the overall accuracy of the manual count, a machine count is usually taken on one of the approaches of each intersection evaluated.

## Land Use Inventory

Considerable insight into projected population, commercial and industrial growth with its consequential new highways, traffic patterns and characteristics can be gained by studying land use maps. The current land usage map for the Town of Secaucus is shown on PLATE IVA. Also, shown on PLATE IVB is the projected land use for the Town of Secaucus when the proposed Meadowlands development occurs.

## Traffic Regulations Inventory

A review was made of all local ordinances and regulations within the Town of Secaucus which may affect traffic operations on streets in the study system. These were then checked against records in the New Jersey Department of Transportation to ascertain whether they had been approved in accordance with Title 39 of the

revised New Jersey statutes. This information was analyzed to determine the adequacy of existing local regulations.

### Roadway and Parking Inventory

All roads on the study system have been inventoried to determine the factors which affect capacity. Pavement width, type and condition were checked in the field. Right-of-way widths were obtained from municipal tax maps. The existence of curbs, shoulders and posted parking regulations was recorded. Through a thorough knowledge of existing physical variables and first-hand observation, sufficient familiarity with field conditions was available to determine the capacity of these roads and streets.

### Public Transportation Survey

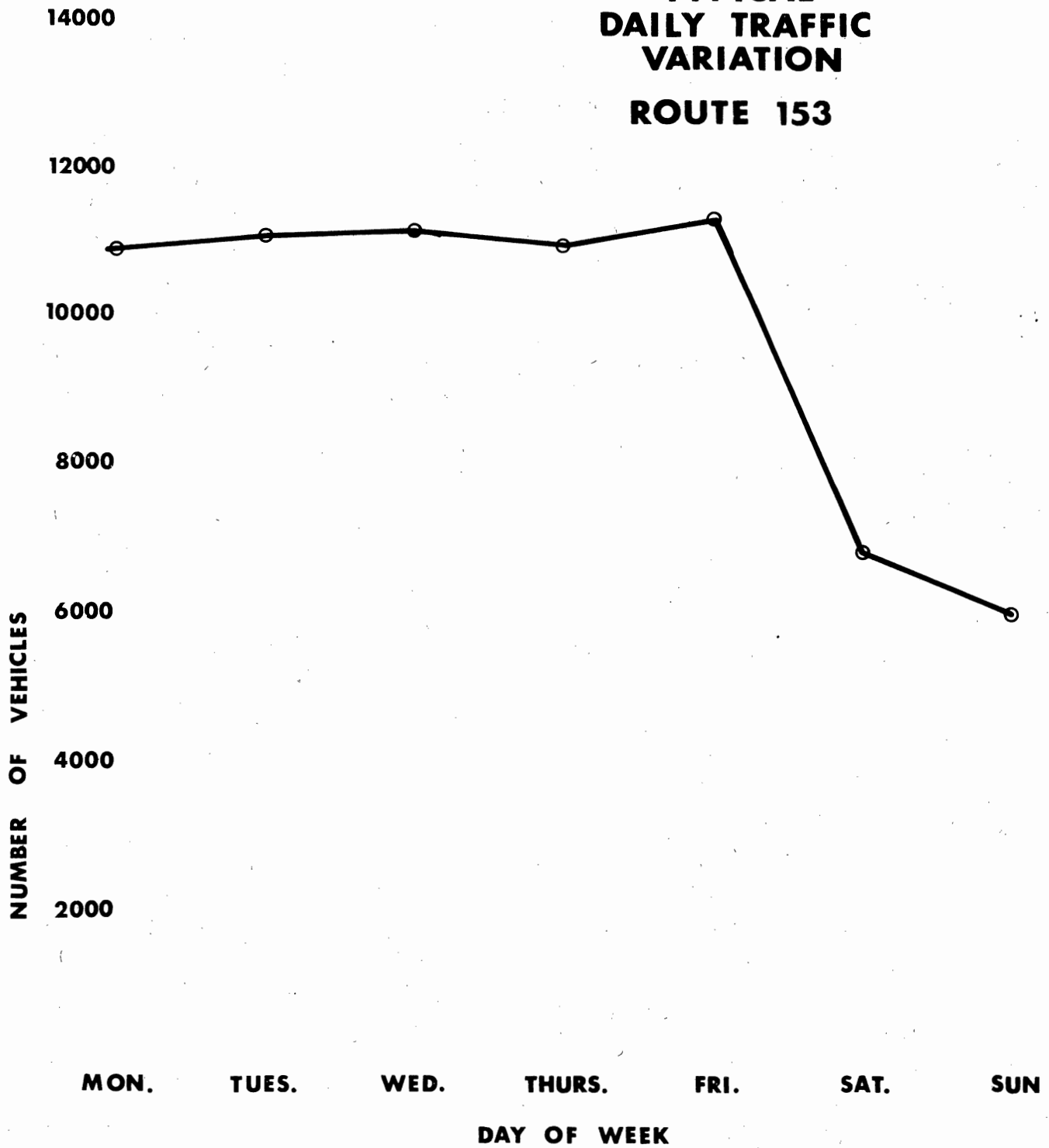
Another phase of the overall evaluation of the adequacy of the existing transportation system was a complete inventory of all public transit routes and schedules. This information was evaluated to determine its effect on traffic during the peak hours. Included in this inventory was the location of public bus terminals and stops, access to and from bus terminals and railroad stations, and adequacy of parking at these facilities.

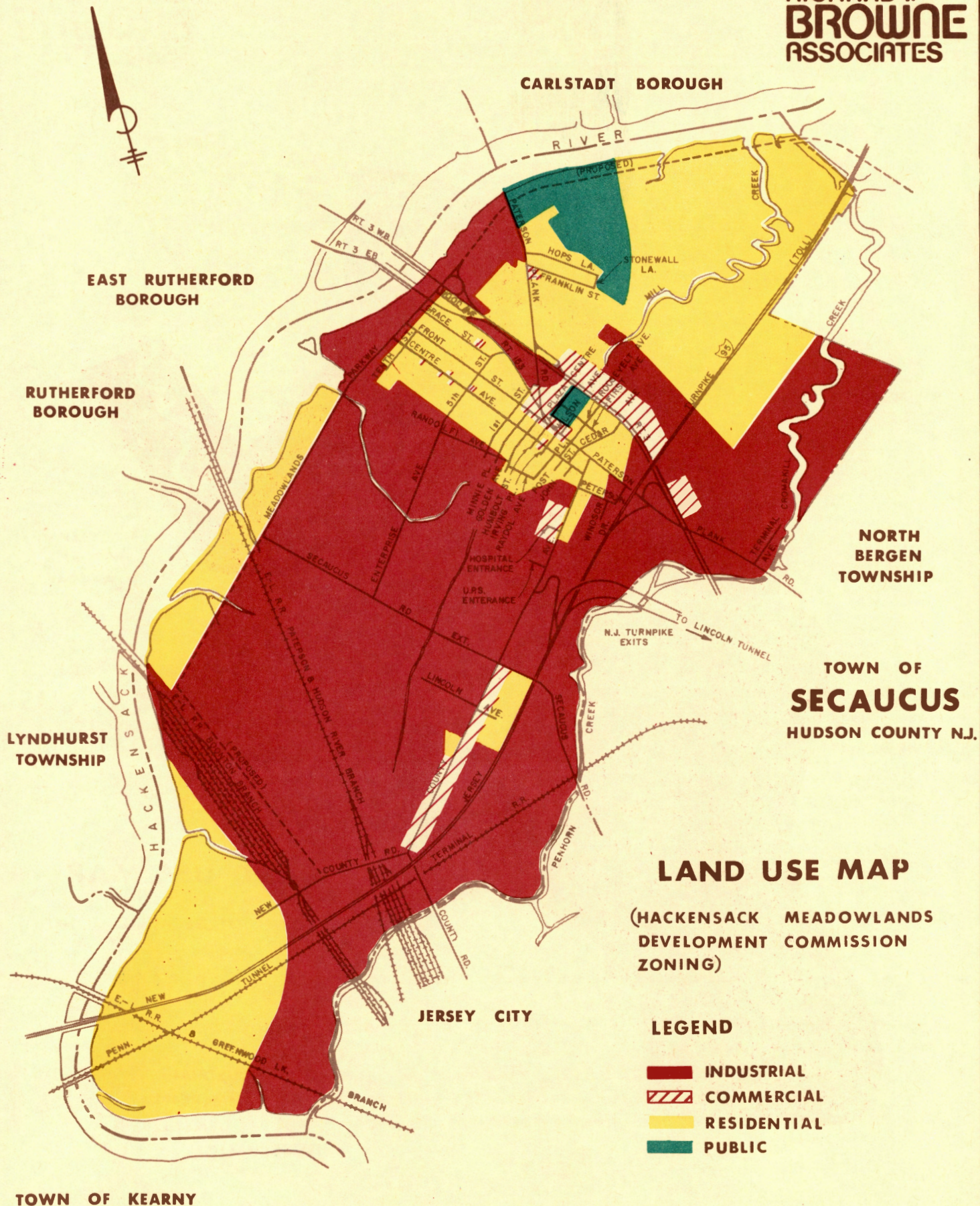
### Traffic Signal Inventory

All signalized intersections were checked in the field to determine the type of signal operation, length of the red and green phases and total cycle length as well as the approach widths. Additionally, the number of lanes, the turning movements allowed in each, the turning and/or parking restrictions, any traffic detector locations and the position of bus stops and loading zones were recorded.

Investigation was also made to ascertain if each traffic signal installation was warranted and had been approved by the New Jersey Department of Transportation. If it had not been approved, investigation was also made as to what adjustments are necessary to secure this approval.

**TYPICAL  
DAILY TRAFFIC  
VARIATION  
ROUTE 153**





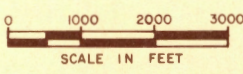
**TOWN OF  
SECAUCUS  
HUDSON COUNTY N.J.**

**LAND USE MAP**

(HACKENSACK MEADOWLANDS  
DEVELOPMENT COMMISSION  
ZONING)

**LEGEND**

- INDUSTRIAL
- COMMERCIAL
- RESIDENTIAL
- PUBLIC





**CARLSTADT BOROUGH**

**EAST RUTHERFORD BOROUGH**

**RUTHERFORD BOROUGH**

**NORTH BERGEN TOWNSHIP**

**TOWN OF SECAUCUS  
HUDSON COUNTY N.J.**

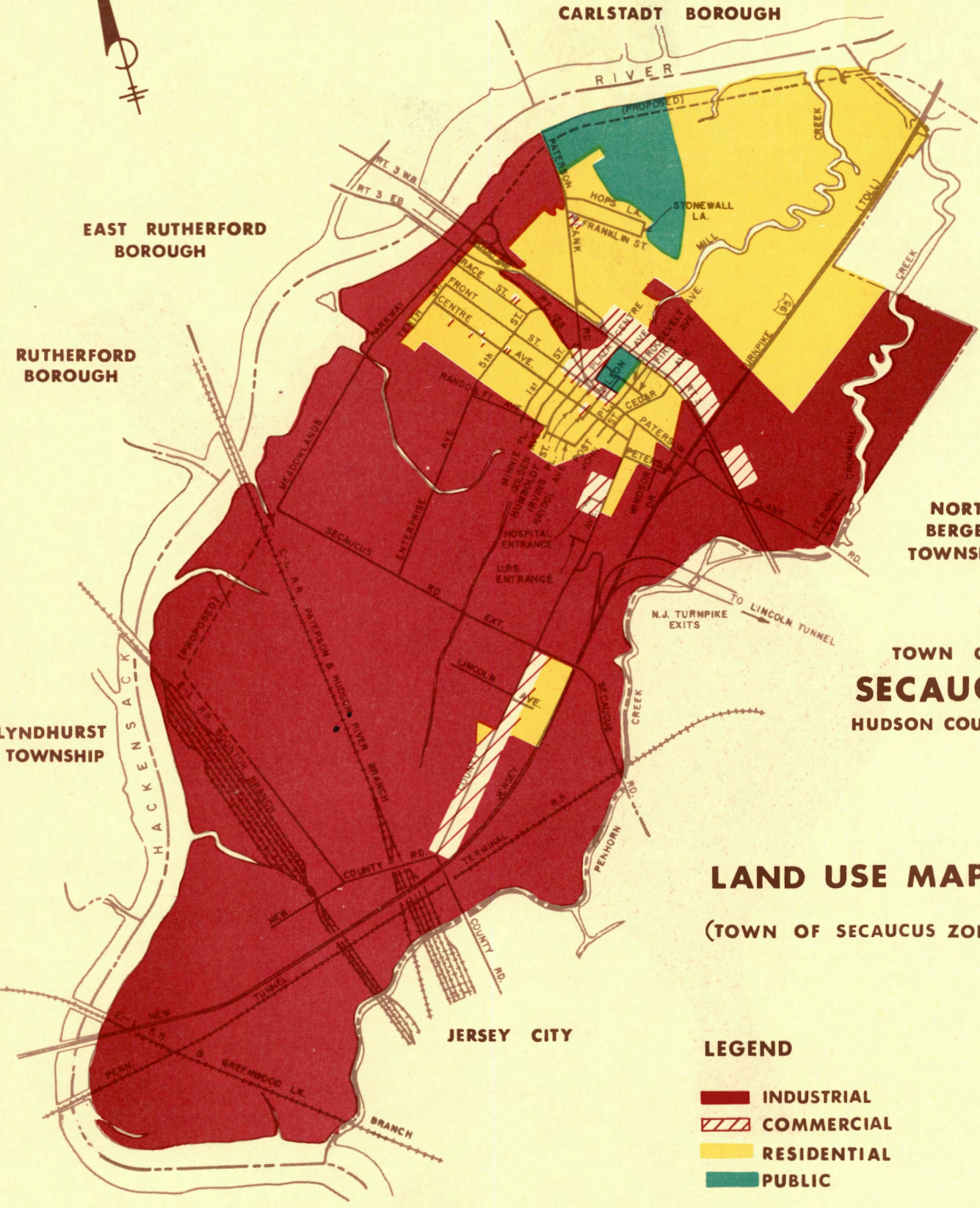
**LYNDHURST TOWNSHIP**

### LAND USE MAP

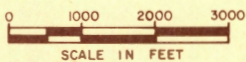
(TOWN OF SECAUCUS ZONING)

#### LEGEND

- INDUSTRIAL
- COMMERCIAL
- RESIDENTIAL
- PUBLIC



**TOWN OF KEARNY**



## V - ANALYSIS AND SUMMARY OF TRAFFIC AND ROAD CONDITIONS

### Travel Speeds

A prime indication of overall driver convenience on a road or street is the average travel speed. Low travel speeds are usually associated with congestion, frequent stops and very closely spaced vehicles. Higher travel speeds reflect little or no congestion, a steady pace and comfortable distances between vehicles. This measure of quality of travel is obtained by making a series of speed and delay runs during both the peak and off-peak hours of traffic flow. PLATE V shows the average travel speeds for roads on the study system.

As illustrated on this plate most roads within the town enjoy good travel speeds in excess of 20 M.P.H. However, low travel speeds do occur at a few locations.

Paterson Plank Road in the center of town experiences travel speeds of 15-20 miles per hour. This low speed can be attributed to delay caused primarily by the three fixed time signals located along this stretch of road. Additional delay is caused by parking maneuvers in this area and by occasionally doubled parked vehicles.

The fixed time traffic signal at the intersection of County Avenue and Secaucus Road is responsible for the low travel speeds on County Avenue in the vicinity of this intersection. Even though during morning and evening peak hours this signal is operated manually by the Hudson County Police Department, congestion and delay still occur.

The low travel speed on New County Road is caused by the frequent interruption of traffic flow by freight operations of the Erie Lackawanna Railroad. Delay varies from a low of fifteen seconds to as long as ten minutes.

The remaining streets exhibiting low average travel speeds are local streets serving residential areas where average travel speeds above 20 miles per hour should not be expected because of narrow roadway width, parking interference and numerous school crossings.

### High Accident Locations

High accident locations can be identified either simply by the number of reportable collisions per year or by an accident rate based on the total volume of vehicles entering the intersection. Each method has its merit, and decisions regarding improvement priorities should consider the number of collisions as well as the accident rate. In this study, the number considered is the total reportable accidents per year, irrespective of severity. However, at specific intersections for which improvements are contemplated, the breakdown by fatalities, injuries, and

property damage is taken into consideration. PLATE VI and TABLE I shows the number of accidents and accident rates at "high" accident locations on the study network.

The Plaza area in the center of town had the worst accident experience during the period of 1969 through 1971. Both the accident number and rate are the highest of any location within town.

Of particular significance is that of the six intersections having the highest accident number, five of these intersections are signalized.

### Traffic Volumes

A good overview of the current problem areas in the traffic system can be obtained by analyzing travel speeds and delays and by studying the accident prone locations. Although these tools can indicate past trends and present conditions, they cannot forecast the development of new congestion locations. To look into the future, traffic volume data is used and present and projected land usage patterns are studied.

#### (1) 1972 Traffic Volumes

From data collected during the calendar year 1972, the present number of vehicles and various patterns of their travel characteristics on the streets can be determined. Present traffic volumes within the Town of Secaucus are shown on PLATE VII.

The two major arterial roads which traverse Secaucus other than Route 3 and the New Jersey Turnpike are Paterson Plank Road and County Avenue. Volumes of about twenty thousand vehicles per day are experienced on sections of these two roads. Other major roads are Secaucus Road, New County Road and Centre Avenue which experience traffic volumes varying from 8,600, 8,700, and 4,000 vehicles per day, respectively to less than two thousand vehicles per day.

Volumes for peak periods of traffic flow are obtained from machine counts and then analyzed to determine the level of service. In most cases where level of service is found to be unsatisfactory (level of service "E" or "F"), the areas will already be experiencing considerable delay, low speeds, and high accident rates. There may be other locations, however, where the traffic volumes are just under the level where congestion begins to take place. This is in the level of service "C" or "D" range where everything is moving smoothly, but any significant additional traffic load will cause the system to start breaking down. Ideally, "C" or "D" is the most desired level of service since this approaches optimum utilization of the highway network. However, traffic volumes are not a constant value, and planning and construction improvements or new facilities requires considerable time. Thus, if at

present, facilities are operating at or close to optimum conditions, it is not too soon to begin planning further improvements in anticipation of increased vehicular travel.

## (2) 1980 Traffic Volumes

Projecting the growth of traffic volumes into the future is not an exact science. However, historical statistics on traffic volumes, vehicle ownership, population, income, etc. are available in various detail and are used as a base upon which to predict future growth. This information along with anticipated land use is used to predict future travel.

After all factors have been taken into account and 1980 traffic volumes are predicted, a review of the entire street network incorporating all recommended TOPICS improvements must be made to anticipated newly developing problem areas and to check the adequacy of all proposed improvements. PLATE VIII shows the projected volumes for 1975 and 1980. The projected volumes take into consideration future development of the Hackensack Meadowlands.

## Traffic Control System

The planning, design and maintenance of a traffic control system (signs and signals, parking and speed regulations, pavement markings, etc.) are called traffic operations. These operational aspects of a street and road system are equally important in determining capacity and safety as are the physical layout and design.

### (1) Traffic Signals

A traffic signal can have a profound effect on the flow of traffic, and therefore, its operation must be constantly evaluated to see if it is truly responsive to traffic demands. Equally important, a well designed traffic signal normally eliminates or reduces the number of accidents involving right angle collisions, left turn movements and pedestrians. However, a poorly designed installation can actually increase the number of same direction accidents at an intersection. Thus there must be adequate visibility of the signal heads to provide sufficient driver reaction. Likewise the clearance intervals must be adequately timed to allow drivers to stop safely.

An installation may be well laid out with modern equipment and design standards, but not be working efficiently due to improper timing or lack of coordination with adjacent control devices. Timing of the individual signal must be adjusted to present traffic patterns, and may require revision periodically as new circulation patterns develop. If new signal installations have been recently constructed or are contemplated they must be coordinated with existing nearby signals. Where traffic volumes

are heavy, the coordinated operation of a series of traffic control signals greatly increases the capacity of a highway or street. Present traffic signal locations are shown on PLATE IX and listed on TABLE II. All of these signals with the exception of the flashing signal at the Hospital Entrance have been approved by the New Jersey Department of Transportation.

## (2) Traffic Signs

Traffic signs may perform any one of three functions: they can regulate traffic operations on a street, warn drivers of hazardous conditions at or near the street, or guide and inform motorists of certain designations, destinations, directions and distances along a roadway. However, for these signs to operate effectively they must be uniform in design and in their application, in good condition and located properly.

## (3) Parking Regulations

The primary purpose of streets is to move traffic, not to act as parking lots. Low volume streets in residential neighborhoods can legitimately serve both functions. However, these are not the type of streets considered in the TOPICS study network. As traffic volumes increase and the street begins serving primarily as an arterial function (carrying a large percentage of through traffic) then the pros and cons of permitting parking to continue on the street must be carefully weighed. Parking prohibition during peak traffic hours will greatly increase the streets capacity for moving traffic. For these reasons, parking regulations and practices were inventoried and analyzed to determine their effect on capacity and safety. See PLATE XIII for parking regulations within the Town of Secaucus.

## Public Transit Routes

Public transit must be evaluated in conjunction with the role it plays in the overall transportation system. Access to and from bus terminals, railroad stations, and airports frequently cause localized congestion which may affect capacities on nearby arterial streets or highways. The location of bus stops must be carefully weighed to cause the least interference with normal traffic operations. Where bus volumes are extremely high, their operations severely impair the movement of other vehicles and separate bus lanes or even entire streets should be considered for their exclusive use.

Adequate public transportation at peak hours can relieve congestion. Any improvement which can be made to encourage present automobile commuters to use public transit will ease the problems on our over crowded highways. TOPICS, however, is not designed to give direct assistance to public transit facilities. Only very limited improvements, such as the construction of bus turnouts, can be made under the present TOPICS program. However, funds are available for the construction of fringe parking areas along major highways leading to central business district areas. These parking areas must be coordinated with public transit to the downtown area. Bus routes on the TOPICS' network streets and transportation terminals are shown on PLATE XI.

**CARLSTADT BOROUGH**

**EAST RUTHERFORD  
BOROUGH**

**RUTHERFORD  
BOROUGH**

**NORTH  
BERGEN  
TOWNSHIP**

**TOWN OF  
SECAUCUS  
HUDSON COUNTY N.J.**

**LYNDHURST  
TOWNSHIP**

**AVERAGE TRAVEL SPEED  
MAP**

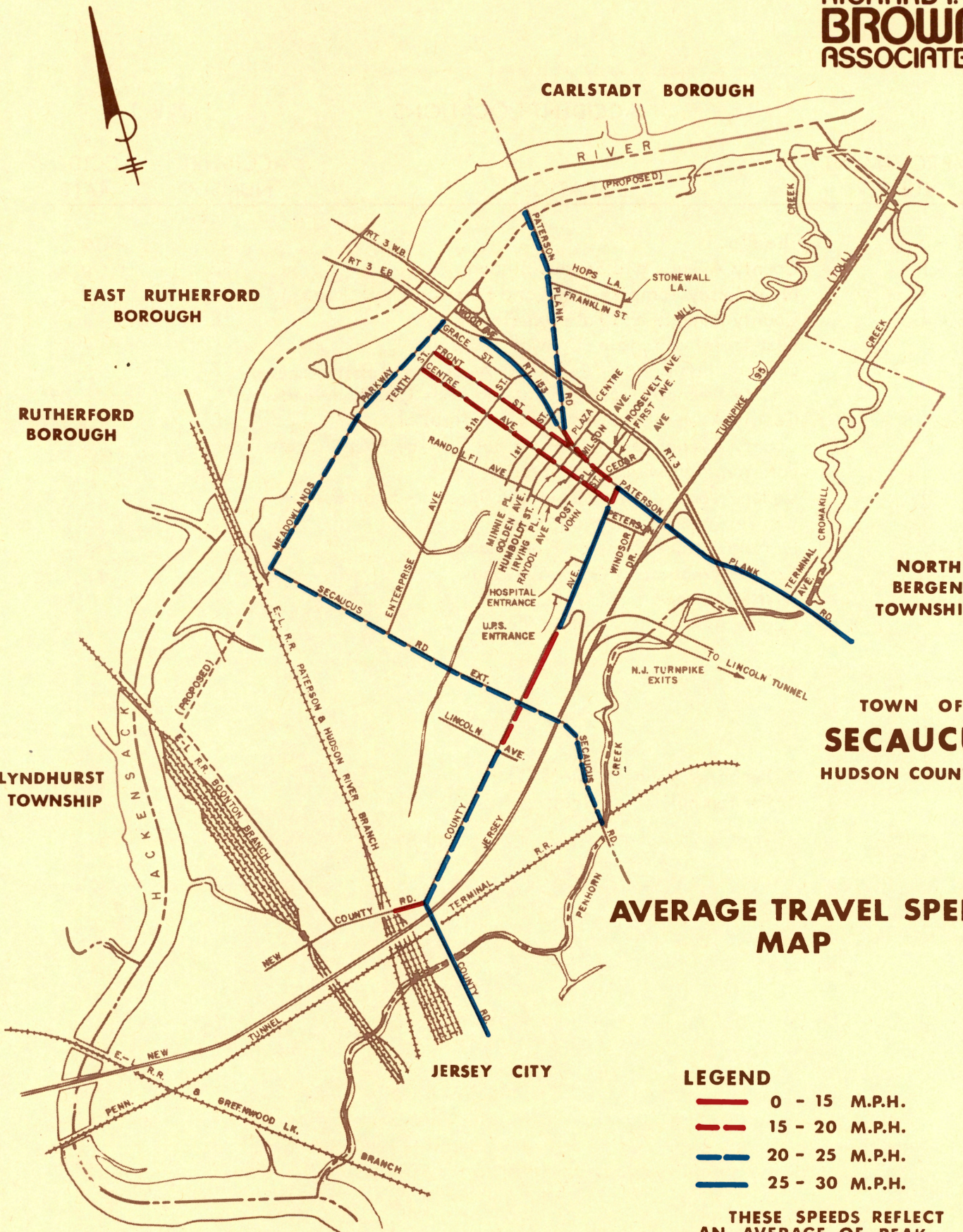
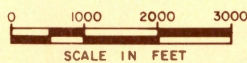
**JERSEY CITY**

**TOWN OF KEARNY**

**LEGEND**

- 0 - 15 M.P.H.
- - - 15 - 20 M.P.H.
- - - 20 - 25 M.P.H.
- 25 - 30 M.P.H.

**THESE SPEEDS REFLECT  
AN AVERAGE OF PEAK  
HOUR AND OFF PEAK  
HOUR CONDITIONS.**



ACCIDENT LOCATIONS

TABLE I

IMPROVEMENT NUMBER	LOCATION	ACCIDENT NUMBER*	ACCIDENT RATE**
S - 5	The Plaza	51	19.57
S - 1	County Avenue and Secaucus Road	23	8.36
S - 3	New Jersey Turnpike Ramp and Paterson Plank Road	21	7.47
S - 4	County Avenue and Paterson Plank Road	18	4.67
	First Street and State Highway 153	14	8.23
S - 2	Paterson Plank Road, Roosevelt Avenue and Post Place	13	5.69
S - 6	County Avenue, County Road and New County Avenue	10	4.07
	County Avenue and Meadowview Hospital	10	3.54
	County Avenue and United Parcel Service Plant Access	9	3.10
	Paterson Plank Road and Peterson Lane	9	3.88
	Cedar Avenue, John Street and Paterson Plank Road	9	4.67
	Centre Avenue and Irving Place	9	12.88
S - 8	First Street and Paterson Plank Road	8	3.50
	Centre Avenue and Golden Avenue	8	11.11
S - 7	First Street and Front Street	6	9.99
	Centre Avenue and Minnie Place	6	9.99

\* Per three years (1969-1971)

\*\* Per ten million vehicles



**CARLSTADT BOROUGH**

**EAST RUTHERFORD  
BOROUGH**

**RUTHERFORD  
BOROUGH**

**NORTH  
BERGEN  
TOWNSHIP**

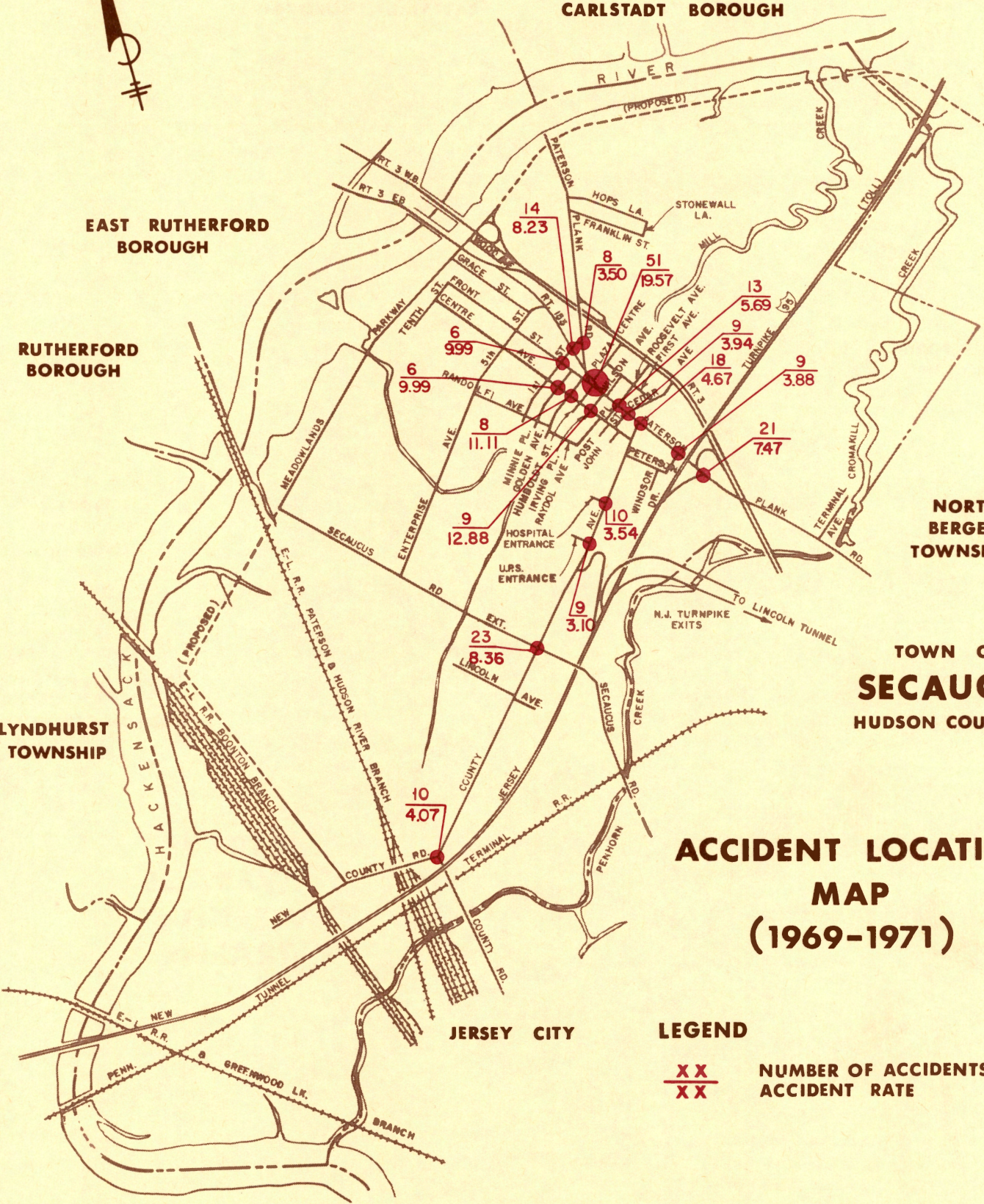
**TOWN OF  
SECAUCUS  
HUDSON COUNTY N.J.**

**LYNDHURST  
TOWNSHIP**

# ACCIDENT LOCATION MAP (1969-1971)

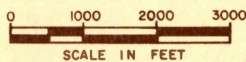
## LEGEND

$\frac{XX}{XX}$  NUMBER OF ACCIDENTS  
ACCIDENT RATE



**JERSEY CITY**

**TOWN OF KEARNY**





**CARLSTADT BOROUGH**

**EAST RUTHERFORD  
BOROUGH**

**RUTHERFORD  
BOROUGH**

**NORTH  
BERGEN  
TOWNSHIP**

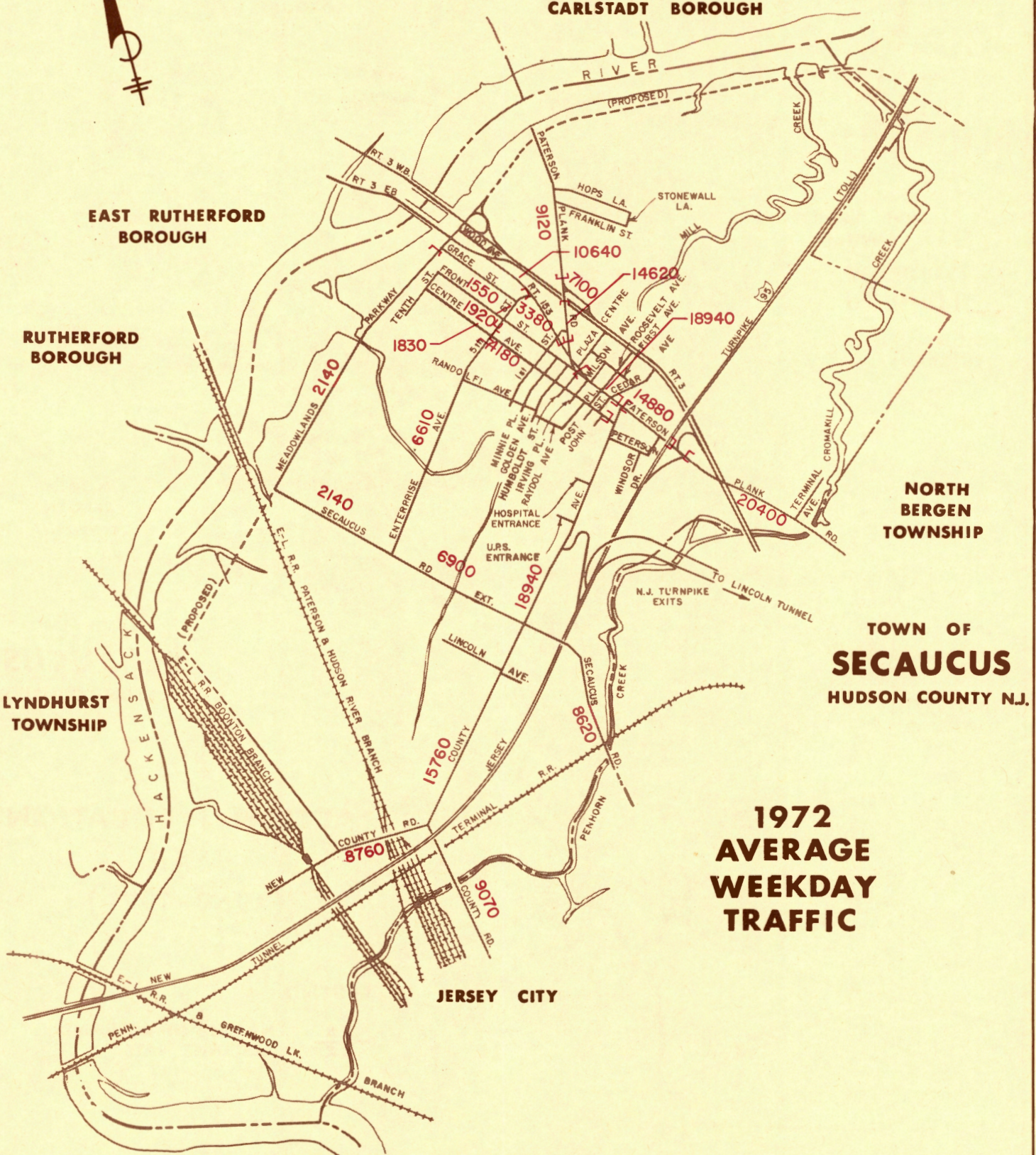
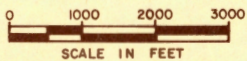
**TOWN OF  
SECAUCUS  
HUDSON COUNTY N.J.**

**LYNDHURST  
TOWNSHIP**

**1972  
AVERAGE  
WEEKDAY  
TRAFFIC**

**JERSEY CITY**

**TOWN OF KEARNY**



**CARLSTADT BOROUGH**

**EAST RUTHERFORD BOROUGH**

**RUTHERFORD BOROUGH**

**NORTH BERGEN TOWNSHIP**

**TOWN OF SECAUCUS  
HUDSON COUNTY N.J.**

**LYNDHURST TOWNSHIP**

**1975 1980  
AVERAGE  
WEEKDAY  
TRAFFIC**

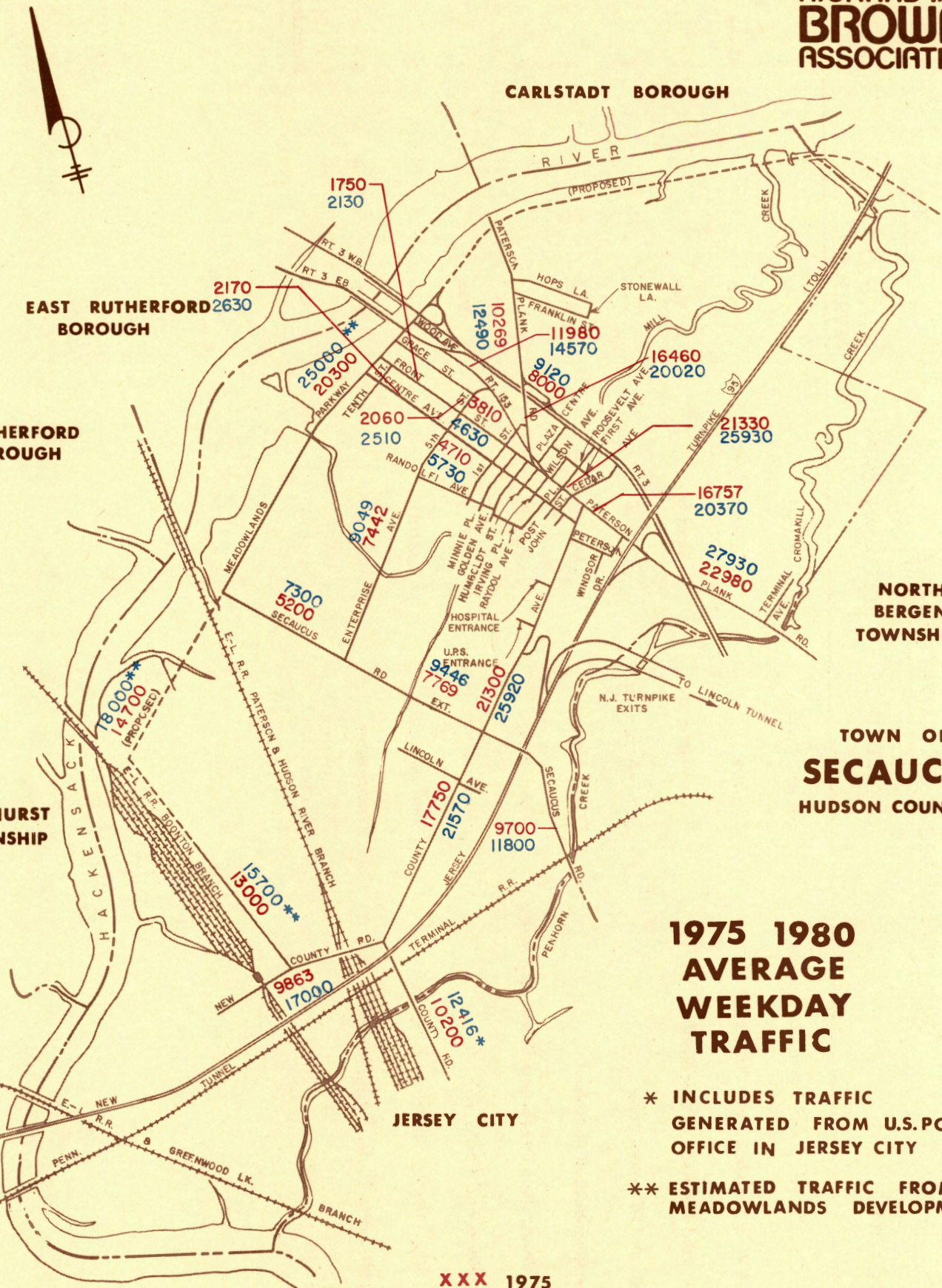
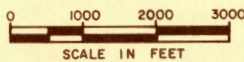
\* INCLUDES TRAFFIC  
GENERATED FROM U.S. POST  
OFFICE IN JERSEY CITY

\*\* ESTIMATED TRAFFIC FROM  
MEADOWLANDS DEVELOPMENT

XXX 1975

XXX 1980

**TOWN OF KEARNY**



**TOWN OF SECAUCUS TOPICS  
EXISTING AND PROPOSED TRAFFIC SIGNALS**

**TABLE II**

LOCATION	OPERATION	RECOMMENDATION	N.J.D.O.T. APPROVED	WARRANT
County Ave., County Rd., and New County Rd.	Fixed-time	Install	---	1
County Avenue and Meadowview Hospital	Flasher	Remove	No	None
County Avenue and Paterson Plank Road	Fixed-time	Modify	Yes	1
County Avenue and Peterson Lane	Semi-Actuated	Install	---	4
County Avenue and Secaucus Road	Fixed-time	Modify	Yes	1
Paterson Plank Road, Post Place and Roosevelt Ave.	Fixed-time	Modify	Yes	4
Paterson Plank Road and Route 153	Fixed-time	Modify	Yes	1
Paterson Plank Rd., Plaza Center and Humboldt St.	Semi-Actuated	Install	---	2
Paterson Plank Rd. and N.J. Turnpike Ramp	Fixed-time	Modify	Yes	1
First Street and Front Street	Flasher	Install	---	Accidents



**CARLSTADT BOROUGH**

**EAST RUTHERFORD BOROUGH**

**RUTHERFORD BOROUGH**

**NORTH BERGEN TOWNSHIP**

**TOWN OF SECAUCUS  
HUDSON COUNTY N.J.**

**LYNDHURST TOWNSHIP**

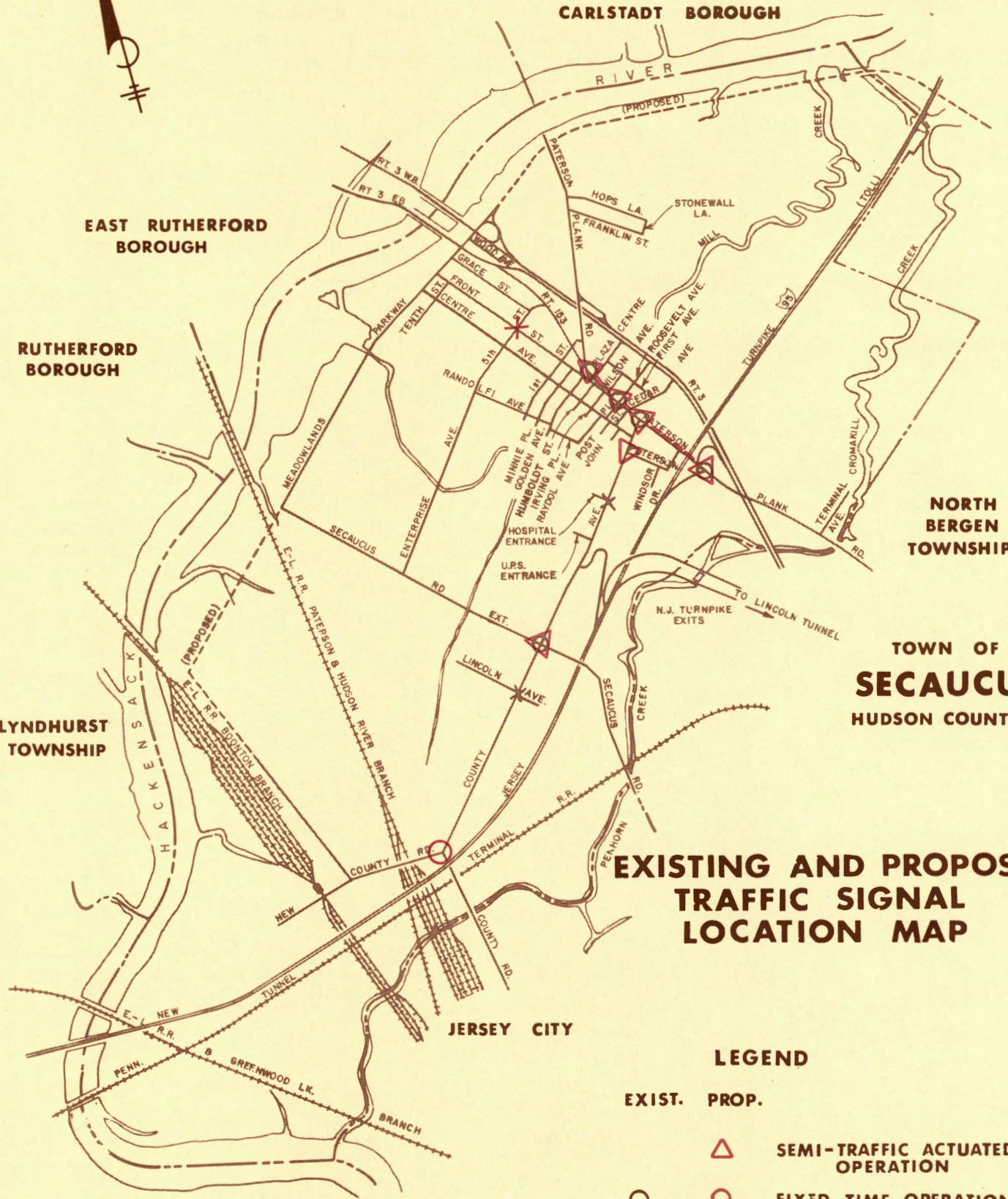
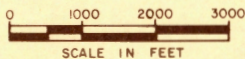
**EXISTING AND PROPOSED  
TRAFFIC SIGNAL  
LOCATION MAP**

**JERSEY CITY**

**TOWN OF KEARNY**

**LEGEND**

- |        |       |     |                                 |
|--------|-------|-----|---------------------------------|
| EXIST. | PROP. |     |                                 |
|        |       | △   | SEMI-TRAFFIC ACTUATED OPERATION |
|        |       | ○   | FIXED TIME OPERATION            |
|        |       | X   | FLASHING OPERATION              |
|        |       | --- | INTERCONNECTION                 |



**EAST RUTHERFORD BOROUGH**

**CARLSTADT BOROUGH**

**RUTHERFORD BOROUGH**

**NORTH BERGEN TOWNSHIP**

**TOWN OF SECAUCUS  
HUDSON COUNTY N.J.**

**LYNDHURST TOWNSHIP**

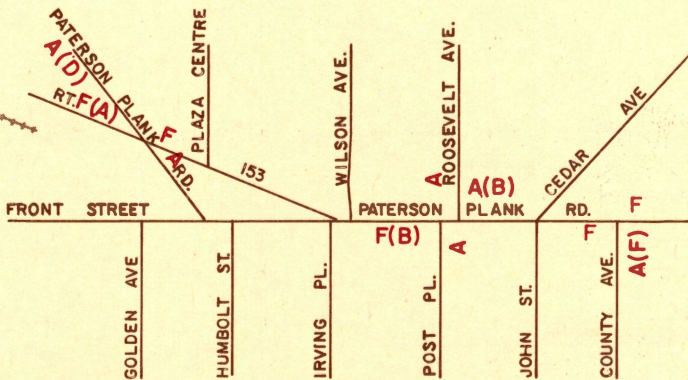
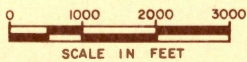
**LEVEL OF SERVICE MAP**

**F A.M.  
(F) P.M.**

Where level of service is indicated for only one peak hour this same level of service exists for the other peak hour.

**JERSEY CITY**

**TOWN OF KEARNY**





**CARLSTADT BOROUGH**

**EAST RUTHERFORD  
BOROUGH**

**RUTHERFORD  
BOROUGH**

**NORTH  
BERGEN  
TOWNSHIP**

**TOWN OF  
SECAUCUS  
HUDSON COUNTY N.J.**

**LYNDHURST  
TOWNSHIP**

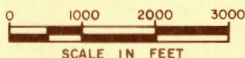
# **PUBLIC TRANSPORTATION MAP**

**JERSEY CITY**

**TOWN OF KEARNY**

### **LEGEND**

- ..... RED & TAN LINES NO. 2
- — — — RED & TAN LINES NO. 15
- INTER CITY LINES NO. 30 & 35



## VI - PROPOSED FEDERAL-AID SYSTEMS

The recommended Federal-Aid Primary Type II Highway System was selected to complement and enhance the existing Federal-Aid Primary Type I System, and Federal Aid Urban System. Collectively, these systems form a logical, connected network of metropolitan routes carrying the major portion of traffic in the area.

The Federal-Aid Primary Type II Highway System must meet certain requirements set forth in PPM 21-18. One category of roads which was included in the new network is those streets functionally classified as arterial routes. Other streets included those which comprise the central business district grid.

Most roads proposed for the Type II System are currently state highways or county roads on the New Jersey State-Aid System. Together these roadways form a logical, integrated network of the arterial roads within the Town of Secaucus and connect it to its neighboring communities.

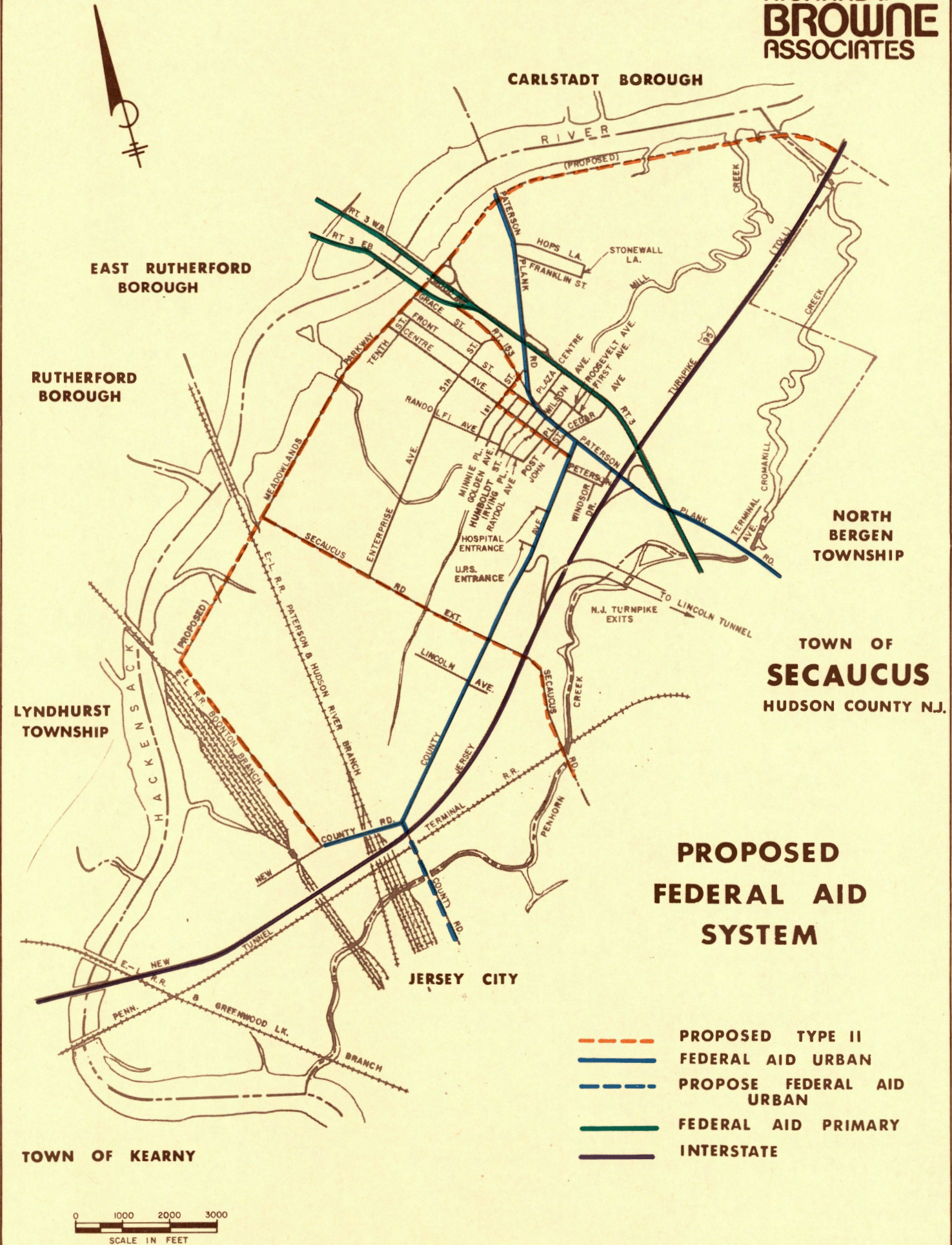
It has been recommended that the existing portion of the Meadowlands Parkway and all future development of this roadway be included as part of the Federal-Aid Primary Type II System. See PLATE XII and TABLE III for a complete listing of the streets and mileage included in the proposed Federal-Aid System in Secaucus.

TOWN OF SECAUCUS

PROPOSED FEDERAL AID SYSTEMS

TABLE III

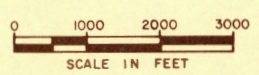
STREET NAME	FROM	TO	LENGTH MILES	FEDERAL AID SYSTEM	
				PRESENT	PROPOSED
<u>FEDERAL AID URBAN</u>					
County Avenue	Paterson Plank Rd.	New County Road	1.80	Urban	Urban
New County Road	County Avenue	Hackensack River	0.40	Urban	Urban
Paterson Plank Road	Hackensack River	N. Bergen Twp. Limits	1.95	Urban	Urban
County Road	County Avenue	Jersey City Limits	0.24	None	Urban
TOTAL FEDERAL AID URBAN MILEAGE			4.39		
<u>FEDERAL AID PRIMARY</u>					
Route 3	Hackensack River	N. Bergen Twp. Limits	1.77	Primary	Primary
TOTAL FEDERAL AID PRIMARY MILEAGE			1.77		
<u>FEDERAL AID PRIMARY TYPE II</u>					
Meadowlands Parkway	New County Road	N. Bergen Twp. Limits	4.45	None	Type II
Secaucus Road	Meadowlands Parkway	Jersey City Limits	1.59	None	Type II
Route 153	Route 3	Paterson Plank Road	0.58	None	Type II
Front Street	Plaza	Fifth Street	0.38	None	Type II
Centre Avenue	County Avenue	Fifth Street	0.92	None	Type II
First Street	Centre Avenue	Route 153	0.12	None	Type II
TOTAL FEDERAL AID PRIMARY TYPE II MILEAGE			8.04		



**TOWN OF  
SECAUCUS  
HUDSON COUNTY N.J.**

**PROPOSED  
FEDERAL AID  
SYSTEM**

- PROPOSED TYPE II
- FEDERAL AID URBAN
- - - PROPOSE FEDERAL AID URBAN
- FEDERAL AID PRIMARY
- INTERSTATE



## VII- TRAFFIC IMPROVEMENT PROGRAM

The primary aim of this study is to develop a coordinated town-wide improvement program which will promote smoother, safer traffic flow by utilizing the full potential of the existing street network. To accomplish this, consideration must be given not only to physical improvements which increase safety and convenience for the road user, but also to those operational measures such as parking and turning regulations which maximize traffic flow on the existing streets.

Traffic control devices such as signals, signs and pavement markings have been evaluated to determine whether they perform their intended functions and are responsive to the needs of the driving public. Existing right of way and pavement widths should be reviewed in conjunction with each contemplated improvement in order to provide the most suitable combination of travel and parking lanes and maximum utilization of available land. At certain locations where it is absolutely necessary to acquire property to provide the required number of traffic lanes or increase curb radii, acquisition of additional right of way has been confined to a minimum.

By evaluating all existing facilities and their potential, a coordinated implementation program can be devised with emphasis placed on those improvements along major routes and their critical links so that the entire system will function most efficiently and smoothly.

### Area Wide Considerations

The Town of Secaucus is located in close proximity to New York City. Hence, transportation and its related facilities both within and through this community are greatly influenced by people traveling to this metropolitan area. For example, some persons use either on street and off street parking facilities as long term parking areas for their vehicles while they travel to New York City via public transportation. Thus, potential parking spaces within the central business district are unavailable to the patrons of the various commercial establishments located within this area.

Secaucus is also the center of many transportation related industries and activities. For example, numerous warehouse facilities and distribution centers are located within the town. Consequently, there is an abnormal amount of truck traffic which must use the arterial street system and too frequently the local street system for access to the industrial areas. It is not uncommon to have trucks representing 30 to 45 percent of the vehicles on some of the major streets located within town. This heavy concentration of truck traffic requires that all TOPICS improvement designs consider this loading.

The major east-west access to Secaucus is New Jersey Route 3 which tends to bisect the northern portion of the town. Traffic on this route destined for the industrial areas of Secaucus is forced through the center of town and unnecessarily congests this area. At present, no effective by-pass exists for this area although the need for and request for such has been foremost in the minds of the community officials for many years. Plans for a ramp from Route 3 eastbound to the Meadowlands Parkway via Grace Street have been submitted to the New Jersey Department of Transportation for approval. It is expected that with the presence of this ramp, and the Meadowlands Parkway, truck traffic through the local streets and the central business district will decline.

Analysis of traffic volume data collected on the major street system of the town indicates that traffic volumes during weekdays are sometimes three or four times the volumes recorded on weekends. Hence, it can be assumed that much of the traffic on the Secaucus road network is generated by the surrounding industrial land uses and as these lands are further developed we can expect even greater traffic demands on the existing street system.

Secaucus is situated in the Hackensack Meadowlands Development area. Within the next five to ten years, development of this area will occur and over twelve thousand acres will be developed. Approximately, twenty eight hundred of these acres are located in Secaucus. For example, over six hundred acres will be developed for light industrial uses and another one hundred acres will be utilized for high density residences within the town. The magnitude of this development will be staggering and will result in very significant traffic loadings on the existing state highway systems as well as on the county and municipal road systems. Consequently, in considering locations for TOPICS improvement projects and in designing these projects, consideration has been given to the development of the Meadowlands in Secaucus as well as the development of the New York Bulk Mail Center and Foreign Mail Facility in Jersey City.

## General Recommendations

### Traffic Signals

Traffic signals should be responsive to traffic demands and coordinated to provide progression along the major arterial routes so as to minimize vehicle stops. Usually flows along the major streets are directional and the signals can be synchronized to allow reasonable vehicular speeds in the direction of this peak traffic flow. The use of traffic-actuated signals can also maximize flow. Traffic-actuated signals will only interrupt the major traffic movement with a red light when actual demand exists on the minor street and will usually reduce the number of same direction accidents on the major street.

PLATE IX indicates the existing and proposed future traffic signal network within the Town of Secaucus. At present, all of the traffic signals are of the fixed time type. It is recommended that these be converted to traffic-actuated types. Additionally, two new traffic signals are proposed to be installed; one a pedestrian-actuated signal located on County Avenue near Lincoln School, and the other a fixed time signal at the intersection of County Avenue, New County Road and County Road.

### Traffic Control System

There are four traffic signals on Paterson Plank Road. These are within 200 yards of each other. A traffic signal system should be installed to eliminate frequent stops and to provide adequate and more continuous traffic flow. The system would consist of interconnection of the four signals along the Paterson Plank Road and installation of appropriate controller equipment. The interconnection could be accomplished through leased telephone lines.

New actuated type controllers, local coordinating units, and communications equipment would be required at three of the locations. Additionally, at the other location a master controller with appropriate communications equipment would also be required to supervise the operation of the other three controllers. It is recommended that this traffic control system be implemented using TOPICS funds.

### Traffic Signs and Markings

Reconnaissance of the study network and the streets intersecting this network indicated that many of the signs presently being used within the town are non-standard and do not conform with the signs as recommended in the Manual on Uniform Control Devices. Additionally, it was noted that many of the STOP signs and street name signs on the streets intersecting the Paterson Plank Road, Centre Avenue, and Front Street are of the non-reflecting type. Many of the minor streets intersecting County Avenue lack STOP sign control even though County Avenue is designated as a through street.

Proper traffic operations at the intersection of County Avenue and Centre Avenue are greatly hampered by the left turn from Centre Avenue to County Avenue. To improve traffic operations at this location it is recommended that this left turn be prohibited.

During reconnaissance it was also noticed that there was an inadequate use of proper pavement markings. For example, at signalized intersection locations, stop lines are nonexistent. On Paterson Plank Road there are no lane markings to properly control and organize traffic flow.

It is recommended that TOPICS funds be utilized for the installation of appropriate regulatory signs and street name signs on the Federal-Aid System and on those streets intersecting this network. Additionally, it is recommended that TOPICS funds be utilized to provide proper pavement markings at all signalized locations and wherever lane lines are required.

### Traffic Regulations

Most of the existing traffic regulations in the Town of Secaucus have not been approved by the New Jersey Department of Transportation. However, the town is presently undertaking a codification of all existing and proposed ordinances and it is expected very shortly that all traffic and parking ordinances will be submitted to the Department of Transportation for their approval.

The present posted speed limit on County Avenue is 25 miles per hour. Analysis of speed and delay information indicates that during most times of the day average travel speeds on this road are in excess of 35 miles per hour. It is therefore recommended that a speed survey be made to see if the speed limit on County Avenue should be changed.

#### Accident Records

Accident records were obtained from two sources. All accidents that occur in Secaucus on municipal streets are maintained in the Secaucus Police Department files. These accidents are filed by accident location. The record of all accidents that occur on state and county highways are maintained by the Hudson County Police Department. These are filed according to the name of the investigating officer.

In order to maintain good traffic safety records, it is necessary to identify locations where accident frequency is increasing. Hence, an accident location file which is constantly updated is, therefore, necessary. Both financial and procedural assistance for the creation of this system is available through the National Highway Safety Bureau. This file must be kept current and should include information such as date and time of day, weather and pavement conditions, type of accident (sketch and brief description), severity and contributory traffic violations. In addition, any suspected deficiency in road design or construction which may have been a factor in causing the accident should be noted.

It is recommended that consideration be given by the Hudson County Police Department in instituting and maintaining an accident location file.

#### Parking Study - Central Business District

Traffic congestion is usually most severe in the central business district where conflicting demands exist on the street system. One need is to provide for the safe and expeditious movement of traffic while the other is to serve as vehicle storage space commonly referred to as on street parking. Usually the later requirement predominates.

An inventory of both on and off street parking practices was conducted in the late summer of 1972 to determine the utilization of the available parking spaces. During this study the license plate number of all parked vehicles was recorded every half hour from 8 A.M. to 6 P.M. This was done for both on street and off street facilities.

PLATE XIII A and XIII B shows the location of existing and proposed parking facilities with their respective time limits within the central business district where the parking study was conducted. GRAPH II indicates the present total supply of parking spaces available and the typical demand which exists for them. TABLE IV summarizes this data for each of the individual streets and parking lots. TABLE V illustrates the duration of parking in the study area.

Analysis of the accumulated data indicates that 45 percent of the available parking spaces are occupied for more than six hours by only eight percent of the vehicles using the downtown area. It is assumed that these parking spaces are used either primarily by commuters to New York City who travel via bus and use this area as their parking lot, or by employers/employees in the study area. This situation is encouraged due to the lack of time limits for parked vehicles on most streets in the area except at the Plaza and on Paterson Plank Road. At the Acme Shopping Center Lot, parking is intended to be restricted to center customers only, however, this restriction is not enforced and many vehicles were observed to be parked for long periods.

The parking accumulation curve shown in GRAPH II is typical for central business district areas. It indicates that parking demand is greatest between 11 A.M. and 3 P.M. and peaks at 12 noon. During this peak period approximately ninety percent of the spaces are occupied. Normally, ninety percent is considered to be the maximum peak hour occupancy rate acceptable because of fluctuations in usage and delays inherent in locating convenient spaces.

Thus, this graph confirms the acute problem parkers have during the noon hour as they keep circulating around for an extended period of time seeking a convenient parking space. This may account for the double parking on Humboldt Street which is very common during the lunch time period.

During the conduct of our parking study, observations were also made of the effect of parking on traffic operations. It was revealed that the maneuvers associated with the angle parking in the Plaza area seriously interfere with traffic flow.

To achieve full potential of the downtown area street system, it is necessary to remove all angle parking in this area, and also eliminate 66 existing parking spaces. This reduction of about twelve percent in the amount of spaces available will further complicate an already intolerable situation. Therefore, it is recommended that two off street parking lots be provided in the downtown area as shown on PLATE XIIIB. These two areas will provide 110 spaces or a net increase of 44 spaces over the present available spaces.

The long term use of 45 percent of the present available parking spaces by commuters and/or employees is the basic parking problem in Secaucus. Their vehicles tie up almost half of the parking spaces in the CBD yet it is doubtful if they generate any substantial business return.

The proposed parking areas should be intended for use as long term parking facilities with appropriate rate schedules. On street parking in the downtown area should be limited to a maximum of one hour duration while in the existing off street lots it should be restricted to two hours duration. Vigorous enforcement of these restrictions will be necessary to achieve the full potential of the available spaces.

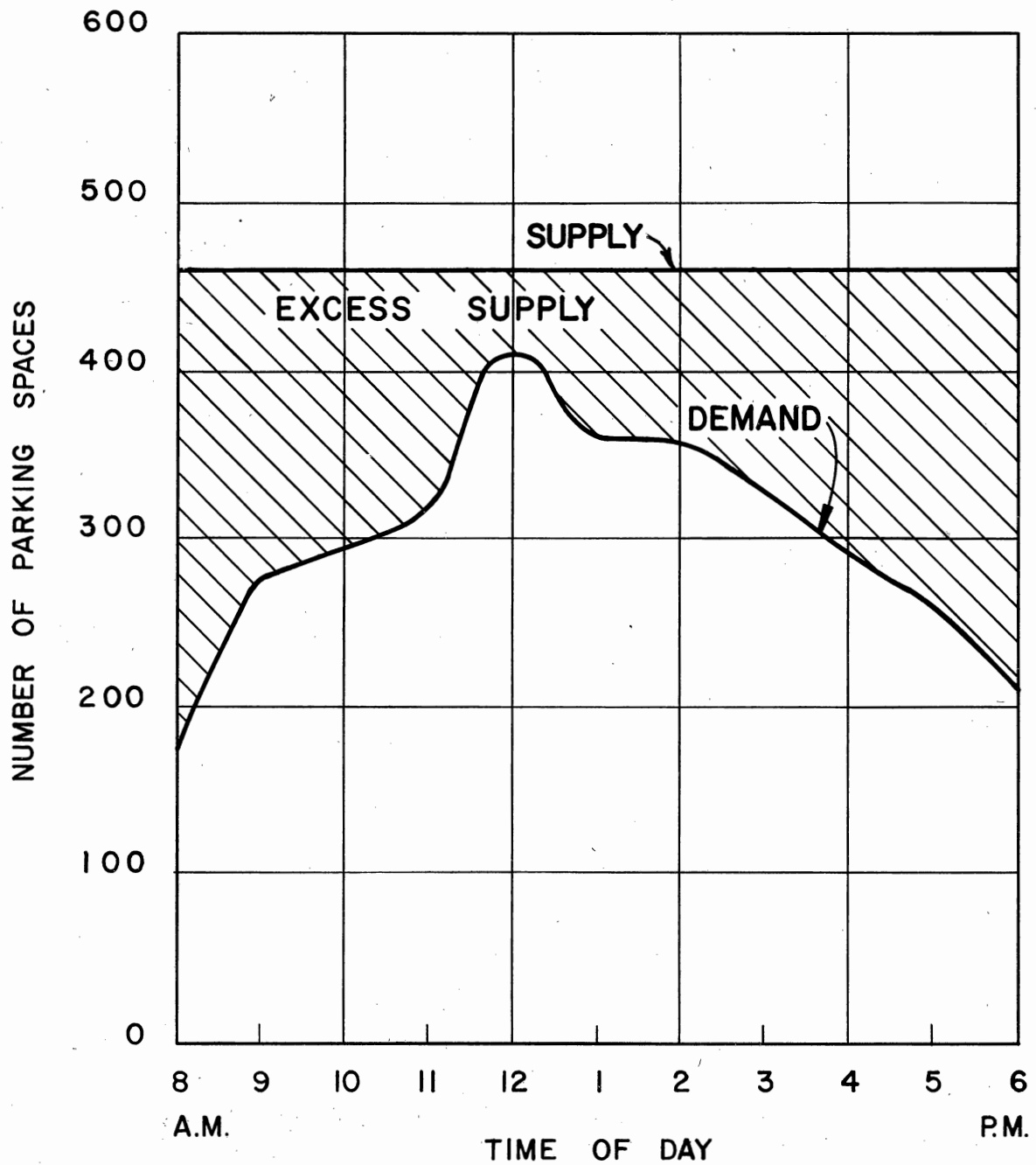
It is recommended that TOPICS funds be utilized to provide the necessary construction monies to finance 66 of the proposed 110 spaces.

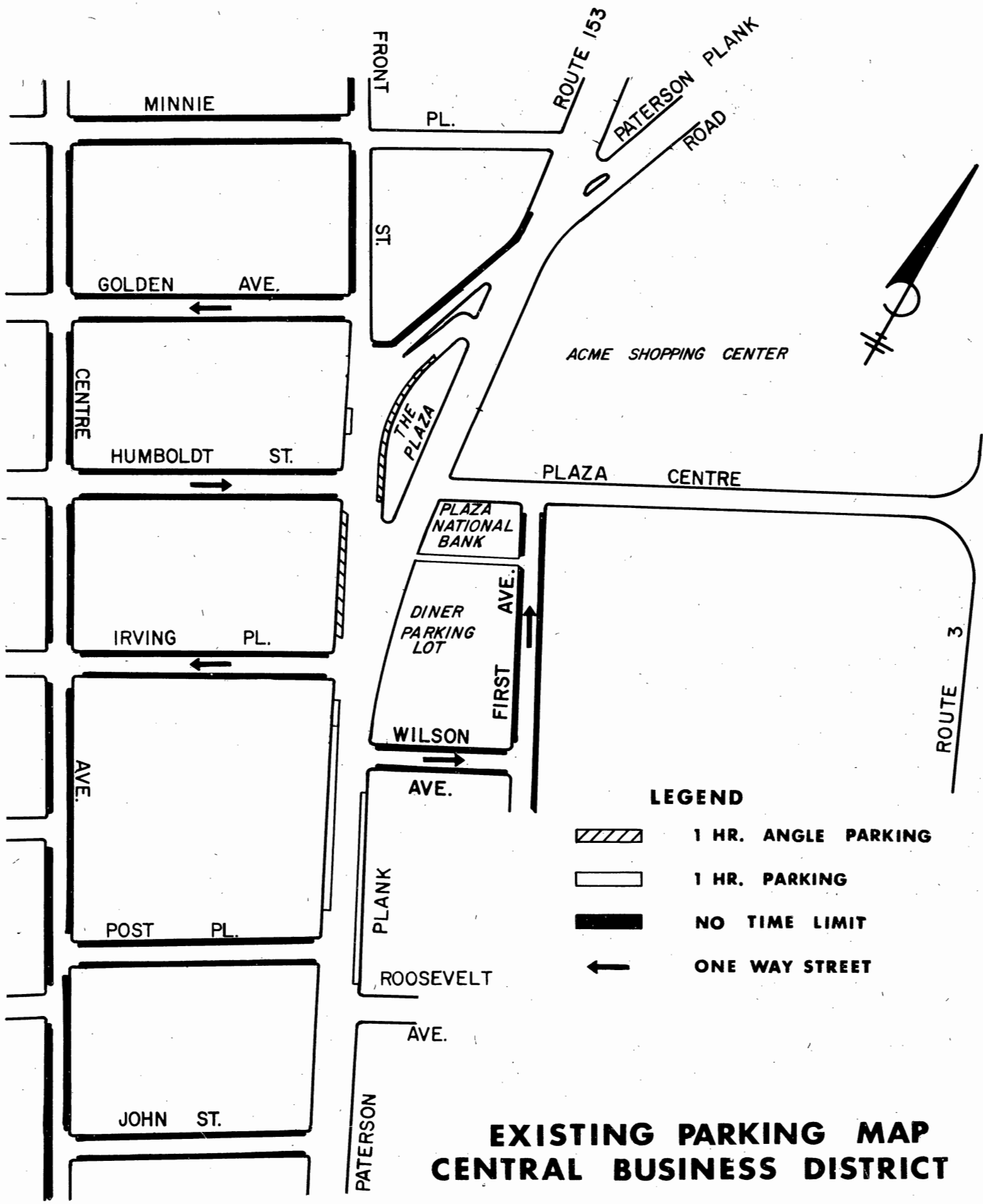
PARKING STUDY SUMMARY CHART

TABLE IV

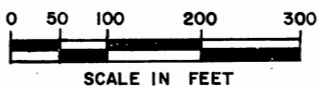
LOCATION	SPACES AVAILABLE	A.M.				P.M.						
		8	9	10	11	12	1	2	3	4	5	6
<u>Shopping Center</u> Number Occupied	153	60	95	105	133	132	138	132	128	125	94	74
<u>Plaza Diner Lot</u> Number Occupied	75	20	32	37	39	84	56	46	30	16	21	27
<u>Golden Avenue</u> Number Occupied	30	13	10	14	14	22	15	19	17	18	17	12
<u>Plaza Area</u> Number Occupied	50	9	19	20	25	40	34	32	27	19	27	18
<u>First Avenue</u> Number Occupied	26	14	22	23	20	22	22	20	21	18	10	9
<u>Humboldt Street</u> Number Occupied	24	14	23	21	22	22	21	22	25	24	18	13
<u>Irving Place</u> Number Occupied	22	11	17	20	18	21	21	21	23	23	23	18
<u>Post Place</u> Number Occupied	22	15	17	5	6	13	8	16	12	12	11	7
<u>John Street</u> Number Occupied	19	10	14	14	13	10	11	14	14	6	5	5
<u>Paterson Plank Road</u> Number Occupied	18	6	11	18	12	21	15	17	18	14	19	17
<u>Plaza National Bank</u> Number Occupied	14	2	11	9	9	14	9	11	8	6	2	1
<u>Front Street</u> Number Occupied	8	4	3	4	7	6	8	6	2	4	5	4
TOTAL	461	178	274	290	318	407	358	356	325	285	252	205
Percent Occupied		39	59	63	69	88	78	77	70	62	55	44

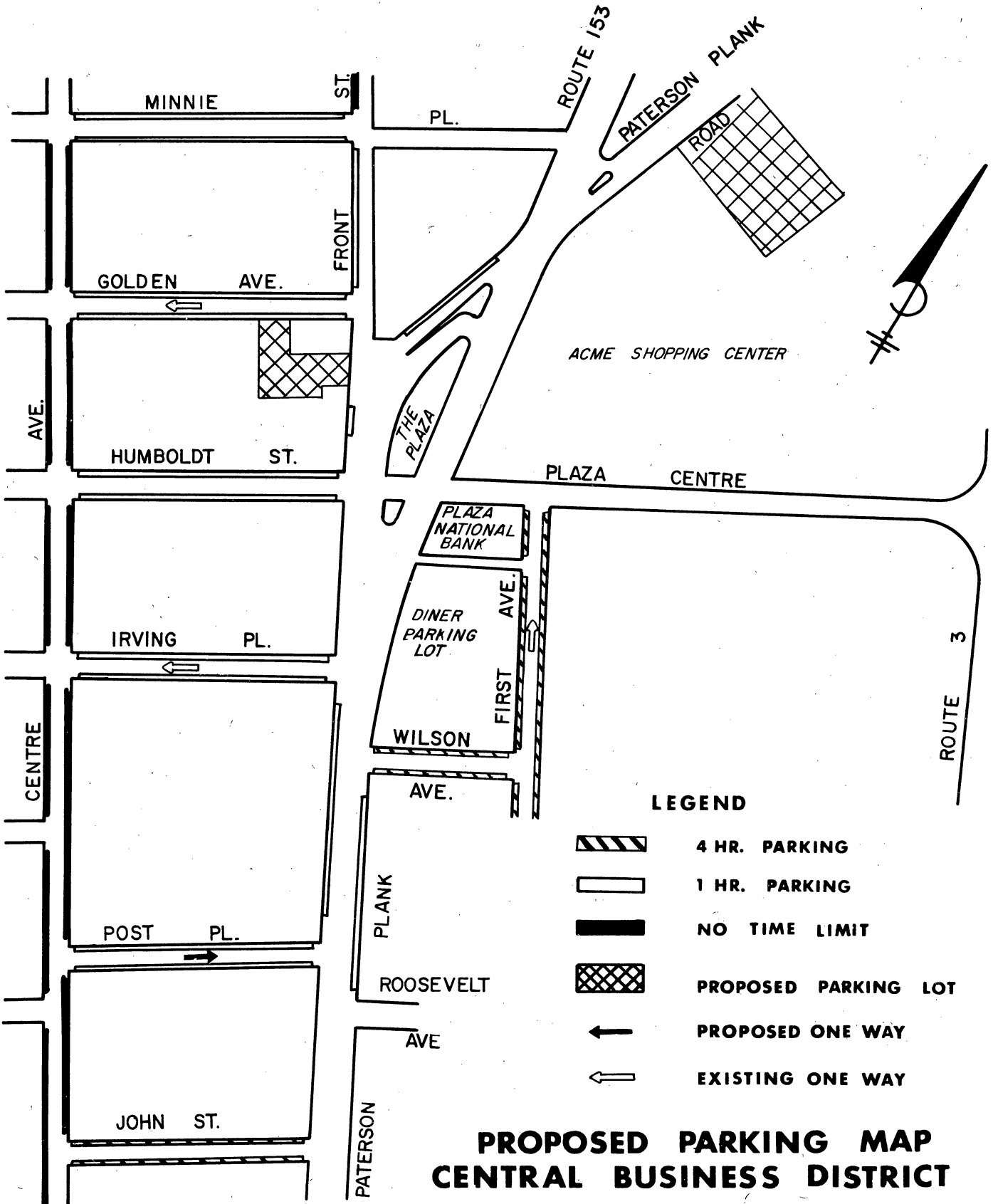
**PARKING ACCUMULATION**  
(ON STREET & OFF STREET)  
IN SECAUCUS CENTRAL BUSINESS DISTRICT











### EXISTING PARKING MAP CENTRAL BUSINESS DISTRICT

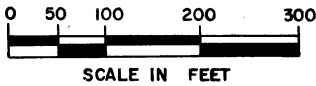




**LEGEND**

-  4 HR. PARKING
-  1 HR. PARKING
-  NO TIME LIMIT
-  PROPOSED PARKING LOT
-  PROPOSED ONE WAY
-  EXISTING ONE WAY

**PROPOSED PARKING MAP  
CENTRAL BUSINESS DISTRICT**



DURATION OF PARKING

TABLE V

<u>LENGTH OF TIME</u>	<u>NUMBER OF VEHICLES</u>
$\frac{1}{2}$ hour	1726
$\frac{1}{2}$ - 1 hour	391
1 - 3 hours	257
More than 3 hours	207

Detailed Recommendations

After consultation with local officials familiar with traffic safety and operation, after carefully considering accident experience throughout the town, and after analyzing the traffic operations and capacity or level of service provided at all signalized intersections, it has been concluded that a total of ten locations require improvement under the TOPICS program. These locations are shown in PLATE XIV and are listed in TABLE VI. A brief discussion to summarize location problems, specific recommendations and benefits has been presented for all locations. Detailed improvement drawings have been prepared for all of these locations. Included within these drawings are existing or proposed signal phasing for all signal locations, morning and evening peak hour traffic volumes and a simplified accident collision diagram for the three year period 1969 through 1971.

Priority Rating for Improvement Locations

To obtain a series of priority ratings for the various improvement locations, it was necessary to calculate a Benefit Cost Ratio (B.C.R.) for each of the improvement locations. The Benefit Cost Ratio of an intersection improvement is computed by dividing the change in benefits by the change in cost derived from carrying out the improvement plan. The change in benefits refers to those benefits which result from improving a particular intersection. An example would be the reduction in accidents and/or the reduction in travel delays associated with the various type improvements. It was assumed that appropriate accident types would be reduced by 50 percent and delay time 10 to 15 percent depending upon the designed improvement. The change in cost refer to the construction cost incurred by implementing the improvement design of a location.

A Benefit Cost Ratio is calculated for each improvement location and then these ratios are arranged in order of magnitude. Those improvement locations with the highest benefit cost ratios were assigned the highest priority ratings. These intersection improvement priorities can be found on TABLE VI.

## IMPROVEMENT PROJECTS AND PRIORITY INDICES

TABLE VI

<u>Improvement Number</u>	<u>Project</u>	<u>Priority Index</u>
S - 1	County Avenue and Secaucus Road	14.94
S - 2	Paterson Plank Road, Roosevelt Avenue and Post Place	13.72
S - 3	New Jersey Turnpike Ramp and Paterson Plank Road	10.57
S - 4	County Avenue and Paterson Plank Road	8.87
S - 10	Bridge over Erie-Lackawanna Railroad Yard	8.30
S - 5	The Plaza	7.75
S - 6	County Avenue, County Road and New County Road	6.35
S - 7	First Street and Front Street	5.62
S - 8	First Street and Paterson Plank Road	3.00
S - 9	County Avenue and Peterson Lane	
S - 11	Traffic Signal System	
S - 12	Signs and Pavement Markings	

## LAWS RELATING TO RIGHT-OF-WAY ACQUISITION FOR TOPICS IMPROVEMENTS

Acquisition for rights-of-way on all highway projects must comply with the following statutes:

- STATE - Chapter 361, Laws of New Jersey 1971. Assembly Bill No. 504, approved December 21, 1971. "Eminent Domain Act of 1971."
- Chapter 47, Laws of New Jersey 1972. Senate Bill No. 987, approved June 1, 1972. "Uniform Transportation Replacement Housing and Relocation Act."
- FEDERAL - Public Law 91-646, 91st Congress. Senate Bill No. 1, approved January 2, 1971. "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970."



**CARLSTADT BOROUGH**

**EAST RUTHERFORD  
BOROUGH**

**RUTHERFORD  
BOROUGH**

**NORTH  
BERGEN  
TOWNSHIP**

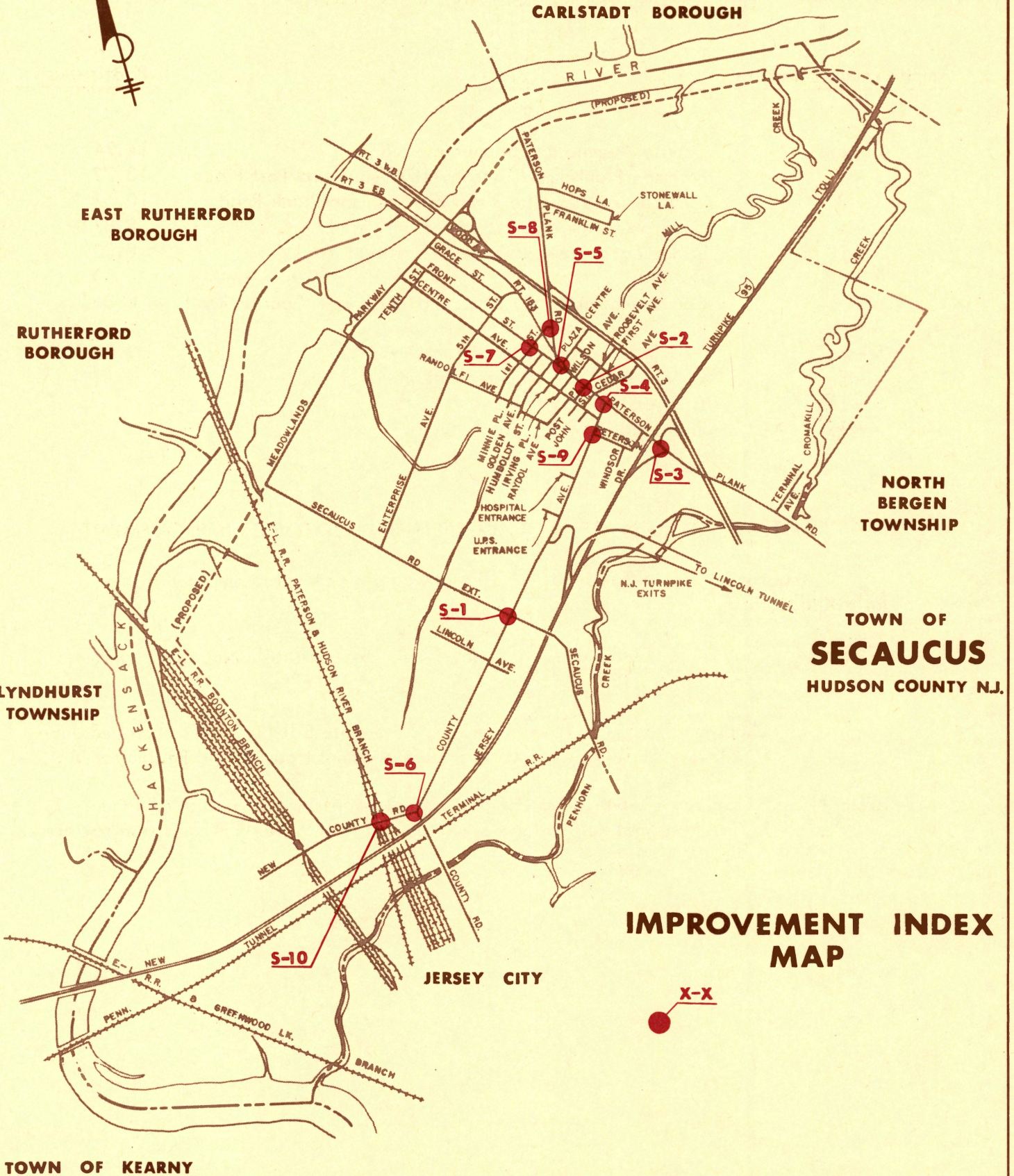
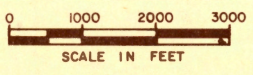
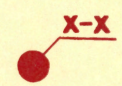
**TOWN OF  
SECAUCUS  
HUDSON COUNTY N.J.**

**LYNDHURST  
TOWNSHIP**

**JERSEY CITY**

**TOWN OF KEARNY**

**IMPROVEMENT INDEX  
MAP**



## VIII - SUMMARY OF REPORT

The TOPICS program was created to ease the traffic congestion within our populated areas by evaluating problem locations which can be corrected through a series of minor improvements. The primary aim is to increase capacity and safety not on the super highways but on the roads one travels every day to and from work, school, or shopping. These corrections can be made relatively quickly and easily because they do not involve major construction and have the advantage of funding assistance from Federal and State Governments.

To determine where improvements were most needed and most likely to benefit motorists a roadway study network was selected through consultation with local, state, and federal officials and an evaluation of the quality of travel on this street system was undertaken. Four general methods were involved in locating critical problem areas.

First, speed and delay studies were made to ascertain the roadway links with unsatisfactory low speeds. Second, accident records were studied to locate the areas having unusually severe collision rates. Thirdly, traffic volumes were counted and evaluated, to determine where roadway conditions were inadequate to carry present and projected vehicle flows without undue congestion or danger. Fourthly, local officials were consulted to insure that no problem locations remained undetected and that any previous plans for improvement or reconstruction were recognized.

This method of analysis identified ten locations in the Town of Secaucus which need corrective action. These locations were then studied specifically to determine the nature, cause, extent and results of the problems. Improvements were designed to produce the maximum benefits at an acceptable cost. Additionally, local and regional planning authorities such as the Tri-State Transportation Commission were consulted to assure that all improvements were compatible with future development plans for the area.

---

### LEGEND FOR IMPROVEMENTS



EXISTING SIGNAL HEAD



PROPOSED SIGNAL HEAD



EXISTING STANCHION,  
PROPOSED SIGNAL HEAD

THUS: ONLY OPEN SIGNAL HEADS OR STANCHIONS INDICATE AN EXISTING CONDITION. SOLID SIGNAL HEADS OR STANCHIONS INDICATE A PROPOSED CONDITION.



ROADWAY WIDENING



RIGHT OF WAY



BUILDING LINE



SIGN POST



GUARD RAIL



SIGNAL DETECTOR



PEDESTRIAN HEAD

NOTE: DARK LINES INDICATE PROPOSED CONDITIONS. SCREENED OR LIGHT LINES INDICATE EXISTING CONDITIONS.

S - 1            SECAUCUS ROAD AND COUNTY AVENUE

Problems

- 1) "F" level of service on all approaches
- 2) High accident location, 23 in three years
- 3) Inadequate turning radii at the west corners
- 4) Very long delays on County Avenue and west approach of Secaucus Road
- 5) Inadequate road width on County Avenue and west approach of Secaucus Road
- 6) Poor signal operation - 3 phase operation delays all traffic
- 7) Stop line on Secaucus Road west approach is 160 feet from the intersection

Recommendations

- 1) Widen County Avenue to provide a separate lane for left turns and two straight through lanes (both directions)
- 2) Increase the turning radii at the west corners to accommodate semi-trailers
- 3) Widen the west approach of Secaucus Road and provide a separate lane for left turns
- 4) Change the traffic signal from fixed time operation to semi-traffic actuated operation with dual maximum extensions

Benefits

- 1) Improved level of service on all approaches
- 2) Reduction of delays and congestion on all approaches
- 3) Improved traffic circulation and access to Secaucus industrial area
- 4) Less interference by left turning vehicles on through traffic

### Problems

- 1) "F" level of service on the north approach of Paterson Plank Road during the morning peak hour
- 2) Traffic signal is not responsive to traffic demand
- 3) Poor signal visibility on Post Place
- 4) Signal unnecessarily delays Paterson Plank Road traffic
- 5) Post Place between Paterson Plank Road and Centre Avenue is closed from 7 A.M. to 4 P.M. during school days. It serves as a school playground area.
- 6) The intersection is a school crossing. A gap study was conducted and the number of gaps was insufficient to allow the children to cross Paterson Plank Road safely.

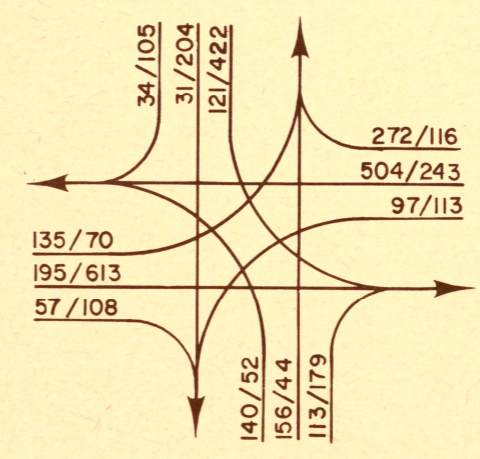
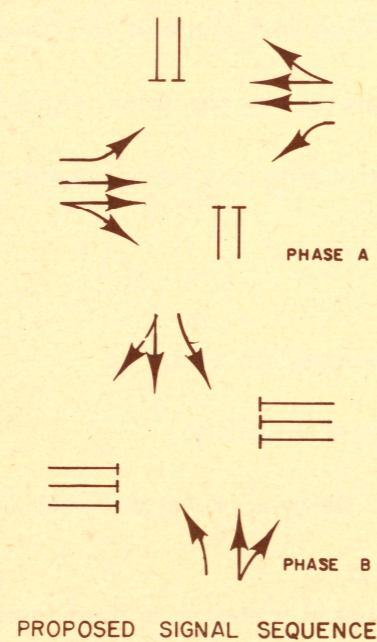
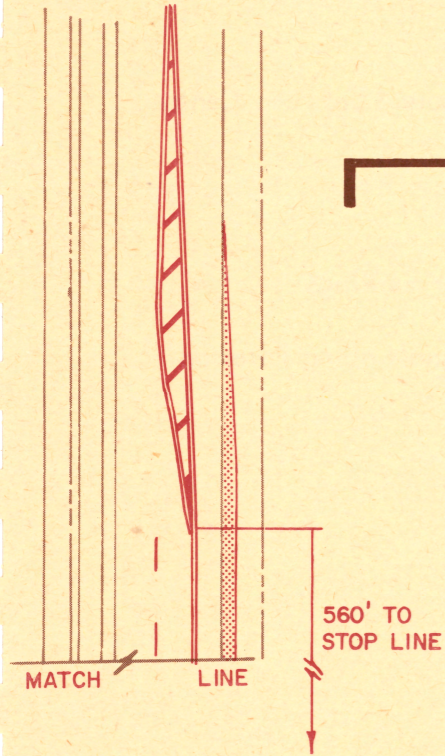
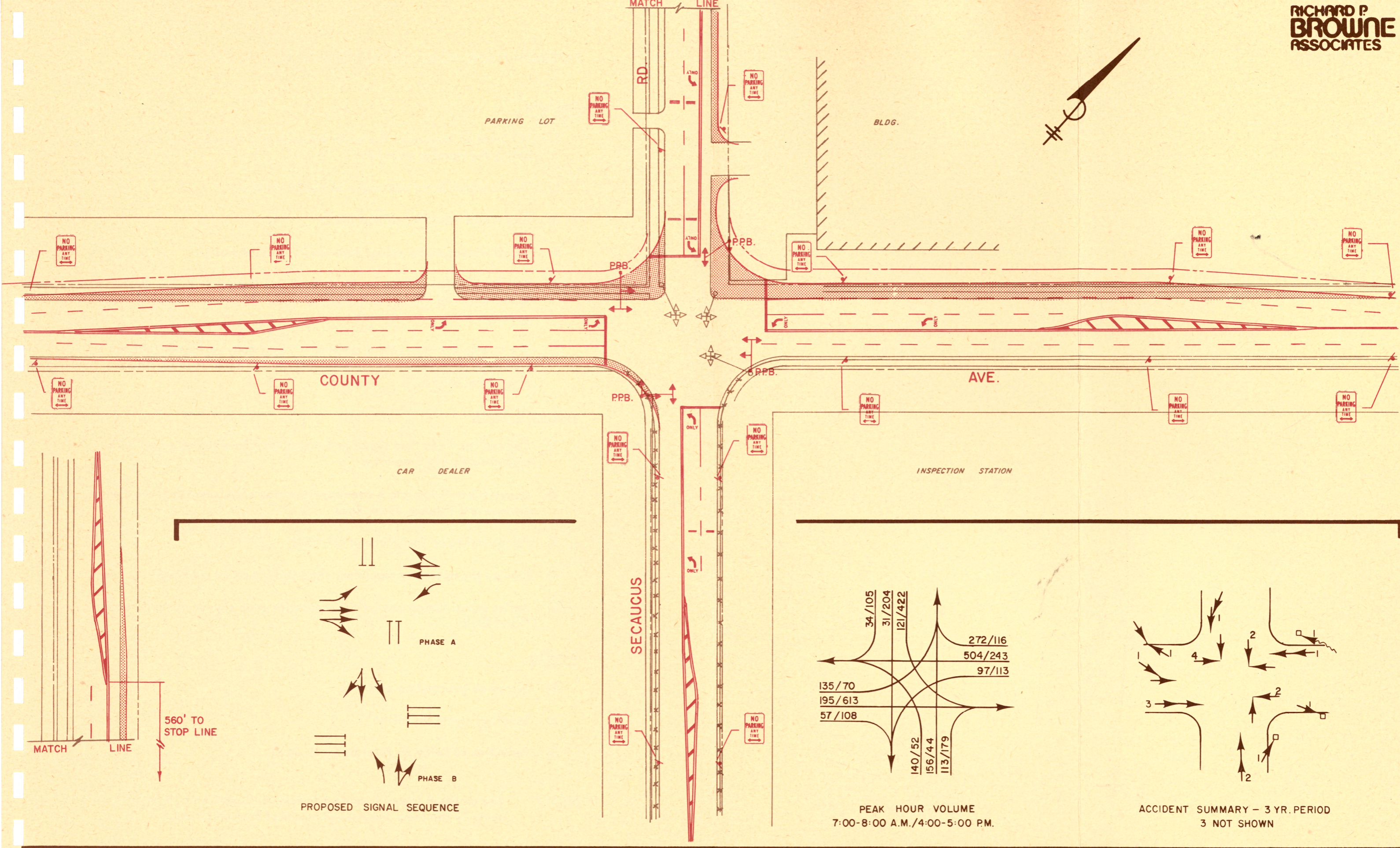
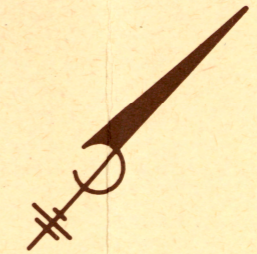
### Recommendations

- 1) Convert the fixed time signal into a semi-traffic-actuated signal with appropriate pedestrian faces
- 2) Convert Post Place into a one-way operation northbound between Centre Avenue and Paterson Plank Road
- 3) Permit traffic on Post Place at all times
- 4) Provide the necessary regulatory signs and pavement markings
- 5) Revise signal timing and interconnect with other signals along Paterson Plank Road

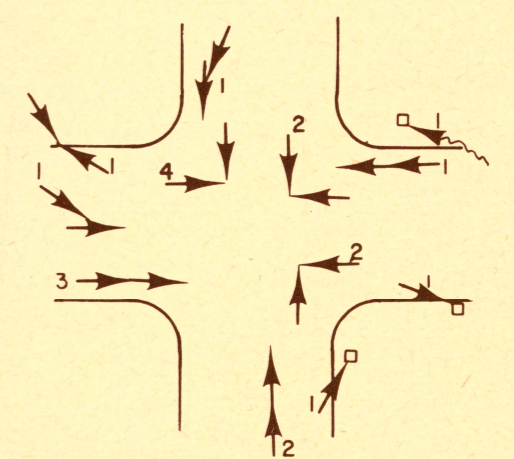
### Benefits

- 1) Increased intersection capacity
- 2) Improved signal visibility
- 3) Reduction of delay on Paterson Plank Road

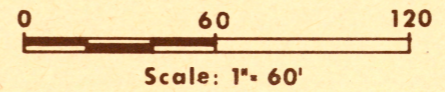
**NOTE:** The proposed layout is subject to revision based on a detailed study by the New Jersey Department of Transportation.



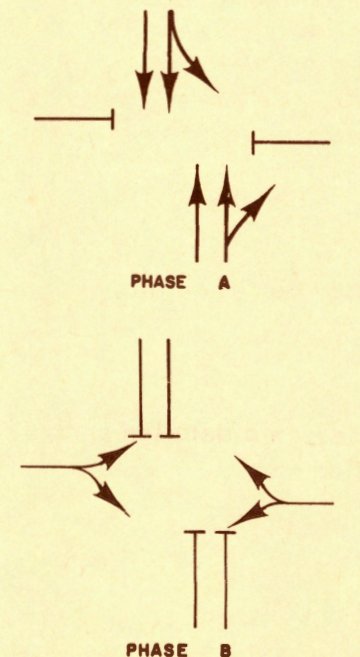
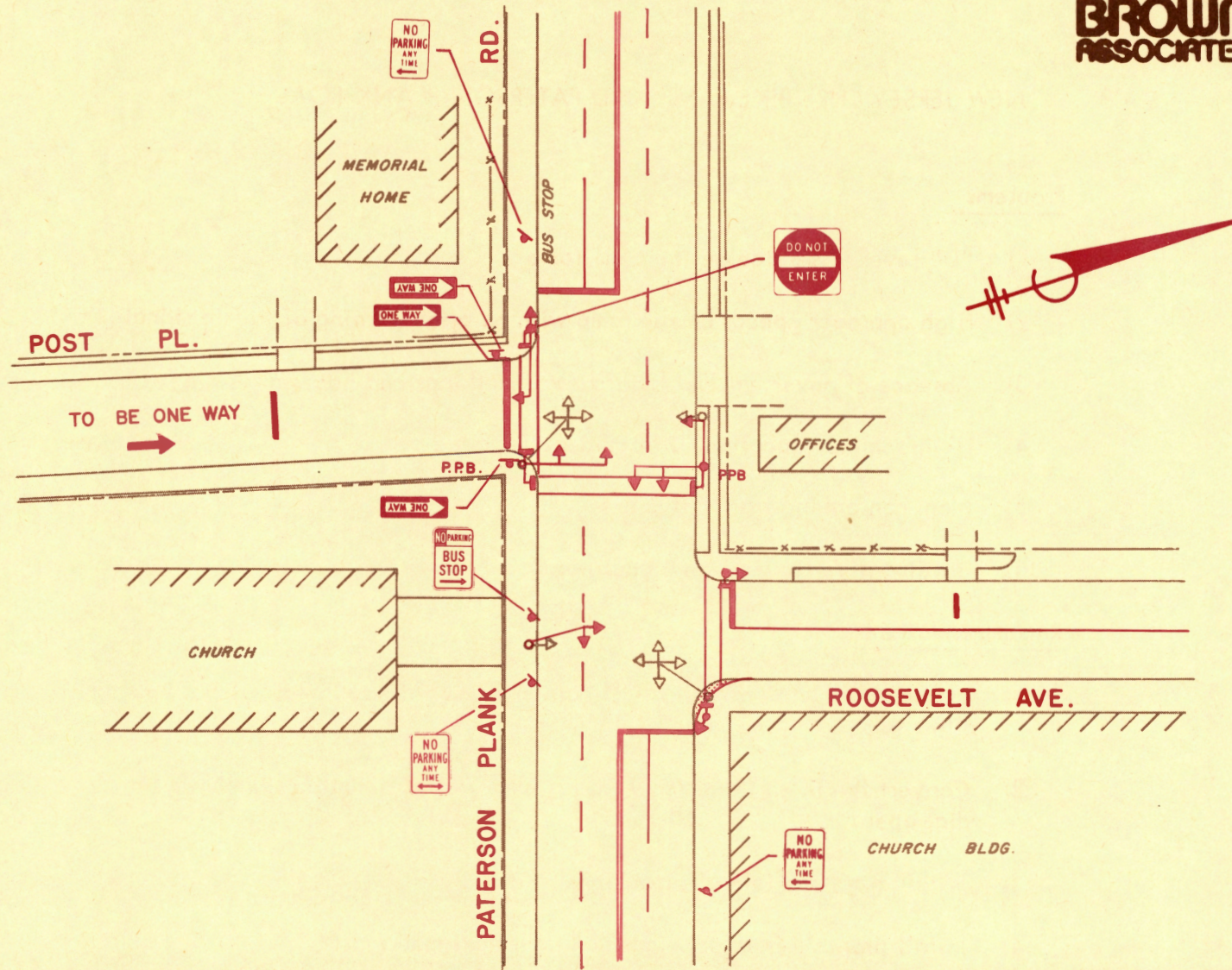
PEAK HOUR VOLUME  
7:00-8:00 A.M./4:00-5:00 P.M.



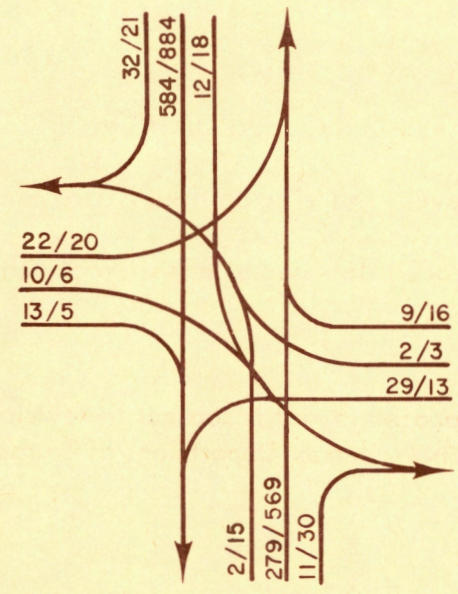
ACCIDENT SUMMARY - 3 YR. PERIOD  
3 NOT SHOWN



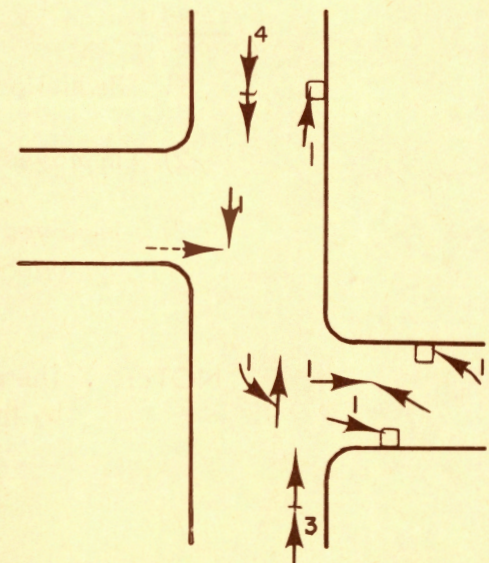
**PROPOSED IMPROVEMENT S1**



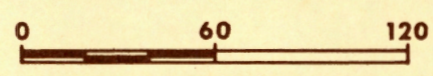
PROPOSED SIGNAL SEQUENCE



PEAK HOUR VOLUME  
7:00-8:00 A.M. / 4:00-5:00 P.M.



ACCIDENT SUMMARY - 3 YR. PERIOD



Scale: 1" = 40'

**PROPOSED IMPROVEMENT S2**

Problems

- 1) "D" level of service on the EXIT ramp
- 2) High approach speeds on the ramp with no prior warning of traffic signal
- 3) Absence of pavement and lane control markings and necessary signs
- 4) High accident location, 21 accidents in three years
- 5) Non-conforming traffic signal
- 6) Unresponsive traffic signal operation

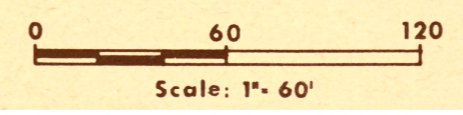
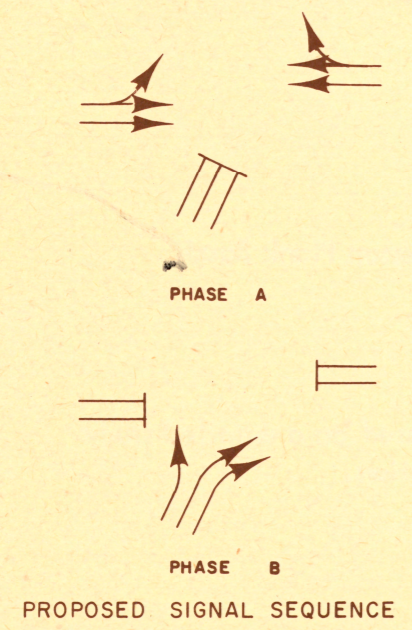
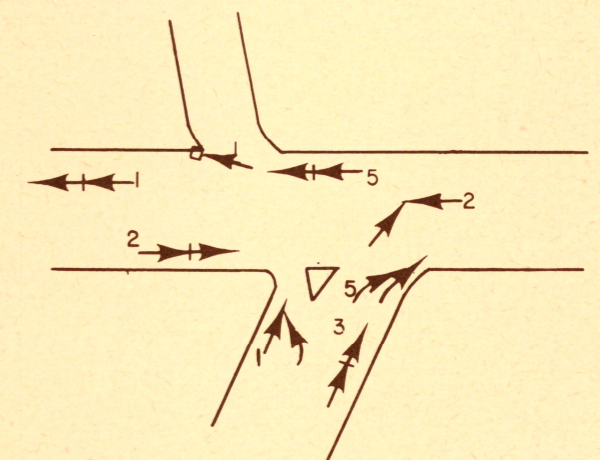
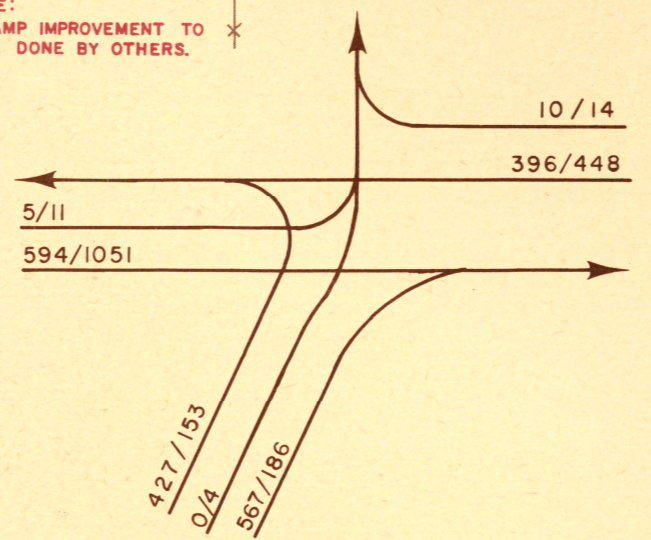
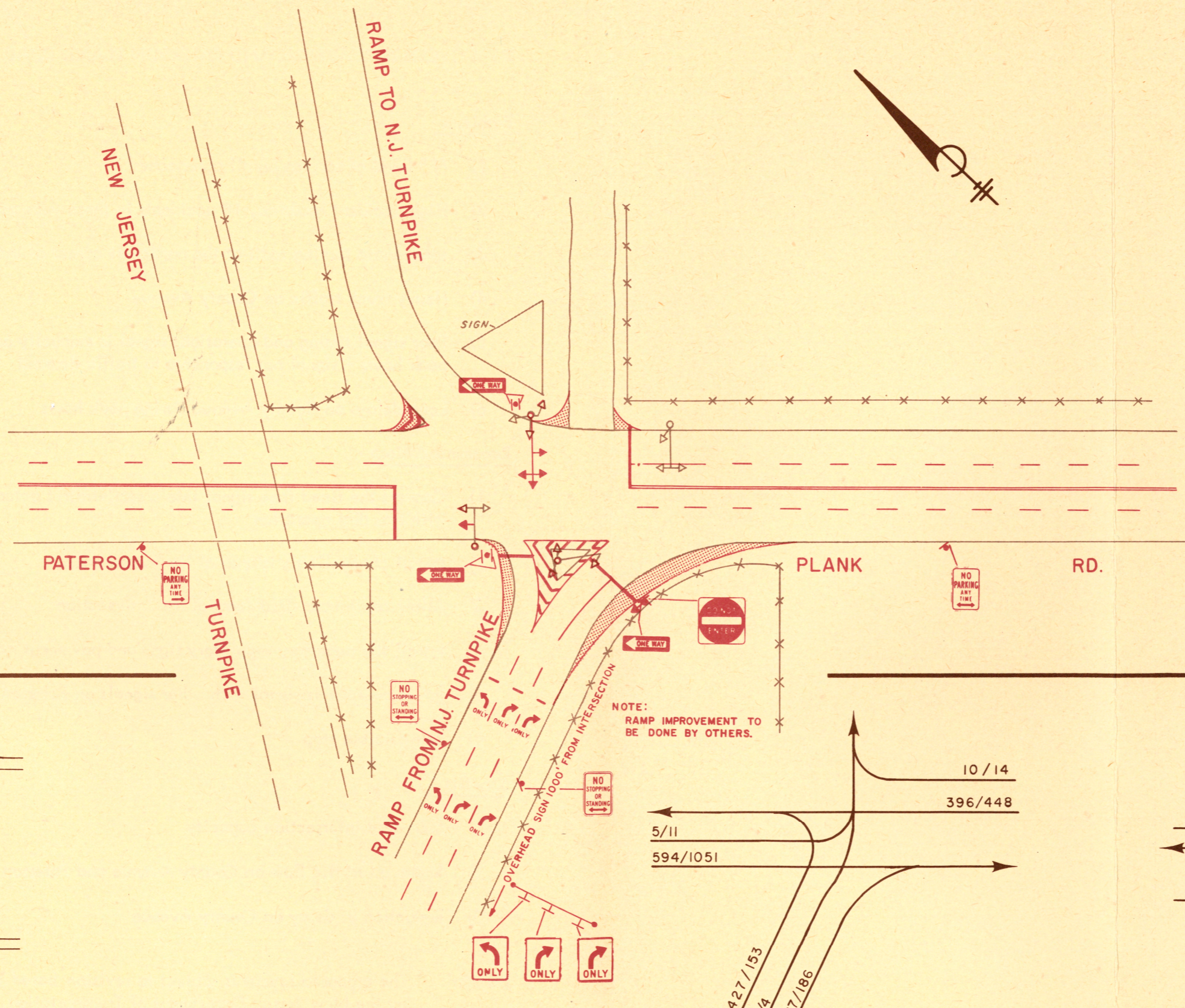
Recommendations

- 1) Increase the turning radii at all corners and on the southeast corner to allow two right turn lanes
- 2) Convert the fixed time signal into a semi-traffic actuated signal with two dial operation
- 3) Install overhead lane control signs
- 4) Install proper regulatory signs and pavement markings
- 5) Interconnect this signal with other signals on Paterson Plank Road

Benefits

- 1) Reduction of same direction collisions
- 2) Improved level of service on the EXIT ramp
- 3) Improved traffic flow and elimination of unnecessary delays on all approaches

NOTE: The proposed layout is subject to revision based on a detailed study by the New Jersey Department of Transportation.



**PROPOSED IMPROVEMENT S3**

## S - 4 COUNTY AVENUE AND PATERSON PLANK ROAD

### Problems

- 1) "F" level of service on all approaches
- 2) High accident location, 18 accidents in three year period
- 3) Inadequate turning radii at the northwest corner of the intersection
- 4) Heavy truck traffic on County Avenue
- 5) Poor signal timing and operation; signal is manually operated during peak hours - signal not responsive to traffic demand
- 6) Long delays on County Avenue during peak hours

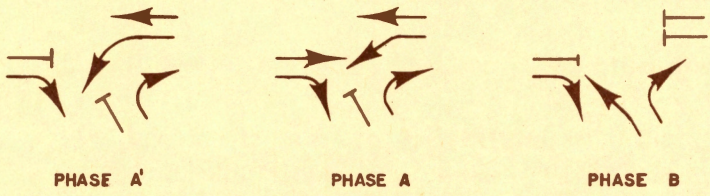
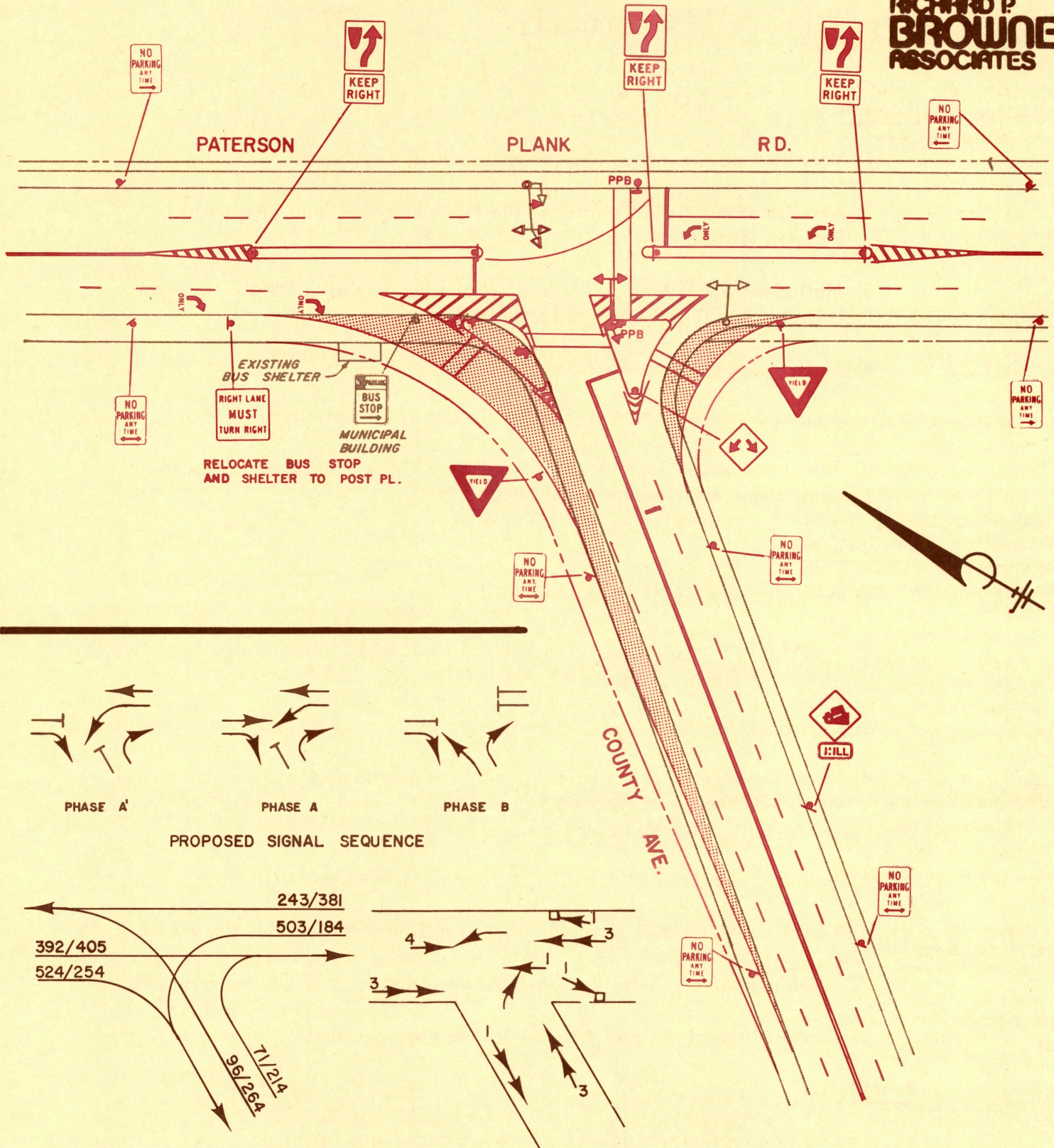
### Recommendations

- 1) Convert the fixed time signal into a semi-traffic actuated signal with two dial operation
- 2) Install channelizing islands at the intersection
- 3) Allow continuous right turns at the intersection
- 4) Install the necessary regulatory signs and pavement markings
- 5) Interconnect this signal with other signals on Paterson Plank Road
- 6) Relocate bus stop

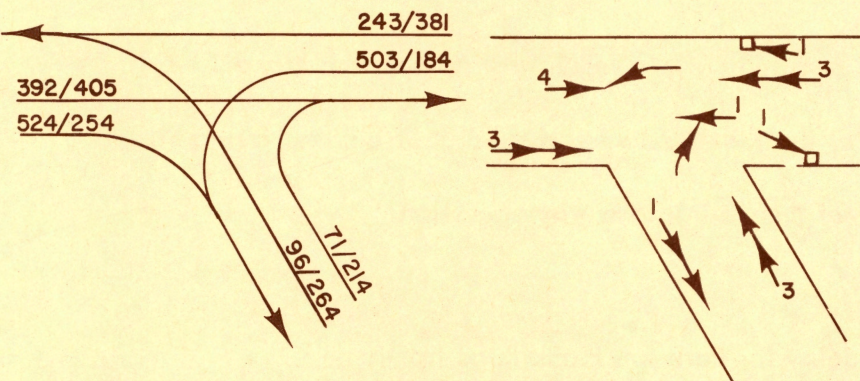
### Benefits

- 1) Increased intersection capacity
- 2) Improved traffic flow on County Avenue and Paterson Plank Road
- 3) Reduction of delay on County Avenue

**NOTE:** The proposed layout is subject to revision based on a detailed study by the New Jersey Department of Transportation.

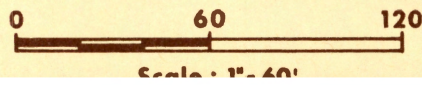


PROPOSED SIGNAL SEQUENCE



PEAK HOUR VOLUMES  
7:00 - 8:00 A.M./4:00-5:00 P.M.

ACCIDENT SUMMARY      3 YR. PERIOD  
1 - NOT SHOWN



Problems

- 1) Very high accident location, 51 accidents in three years
- 2) Absence of any traffic control at the Plaza between Front Street and Paterson Plank Road
- 3) Inefficient signal timing, "all red" phases and exclusive "Walk" interval accounts for 50 percent of the total cycle length
- 4) Nonconforming signal indications
- 5) Angle parking interferes and delays through traffic within the Plaza
- 6) Traffic patrolman necessary during peak traffic periods to control traffic at Front Street and Humboldt Street

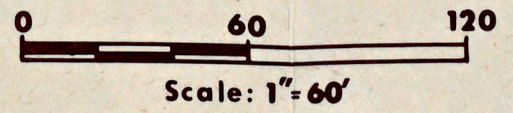
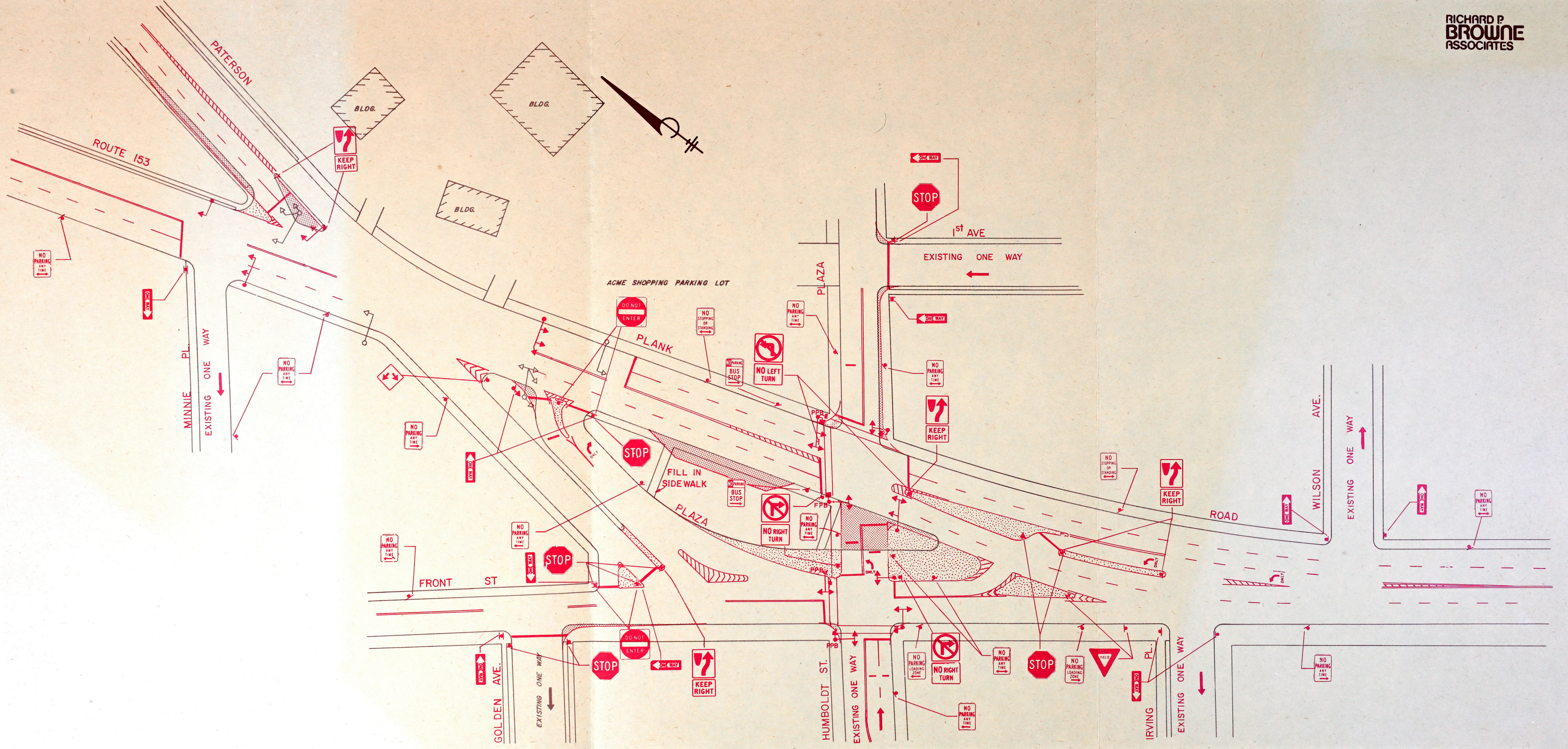
Recommendations

- 1) Prohibit angle parking at the Plaza
- 2) Install a left turn slot on Paterson Plank Road for vehicles turning into Front Street
- 3) Connect Plaza Center with Humboldt Street
- 4) Install a semi-traffic actuated signal at the intersection of Front Street and Humboldt Street - convert the signal at Route 152 and Paterson Plank Road to semi-traffic actuated operation
- 5) Install "Walk, Don't Walk" signal faces at all appropriate locations
- 6) Install channelization and appropriate regulatory signs at the Plaza
- 7) Provide loading zone at the Plaza between Humboldt Street and Irving Street
- 8) Convert Humboldt Street traffic into two way operation

Benefits

- 1) Less interruption and delay for Paterson Plank Road traffic
- 2) Improved traffic control in the Plaza area
- 3) Increased approach capacity
- 4) Elimination of the need for police control

NOTE: The proposed layout is subject to revision based on a detailed study by the New Jersey Department of Transportation.



**PROPOSED IMPROVEMENT S5**

Problems

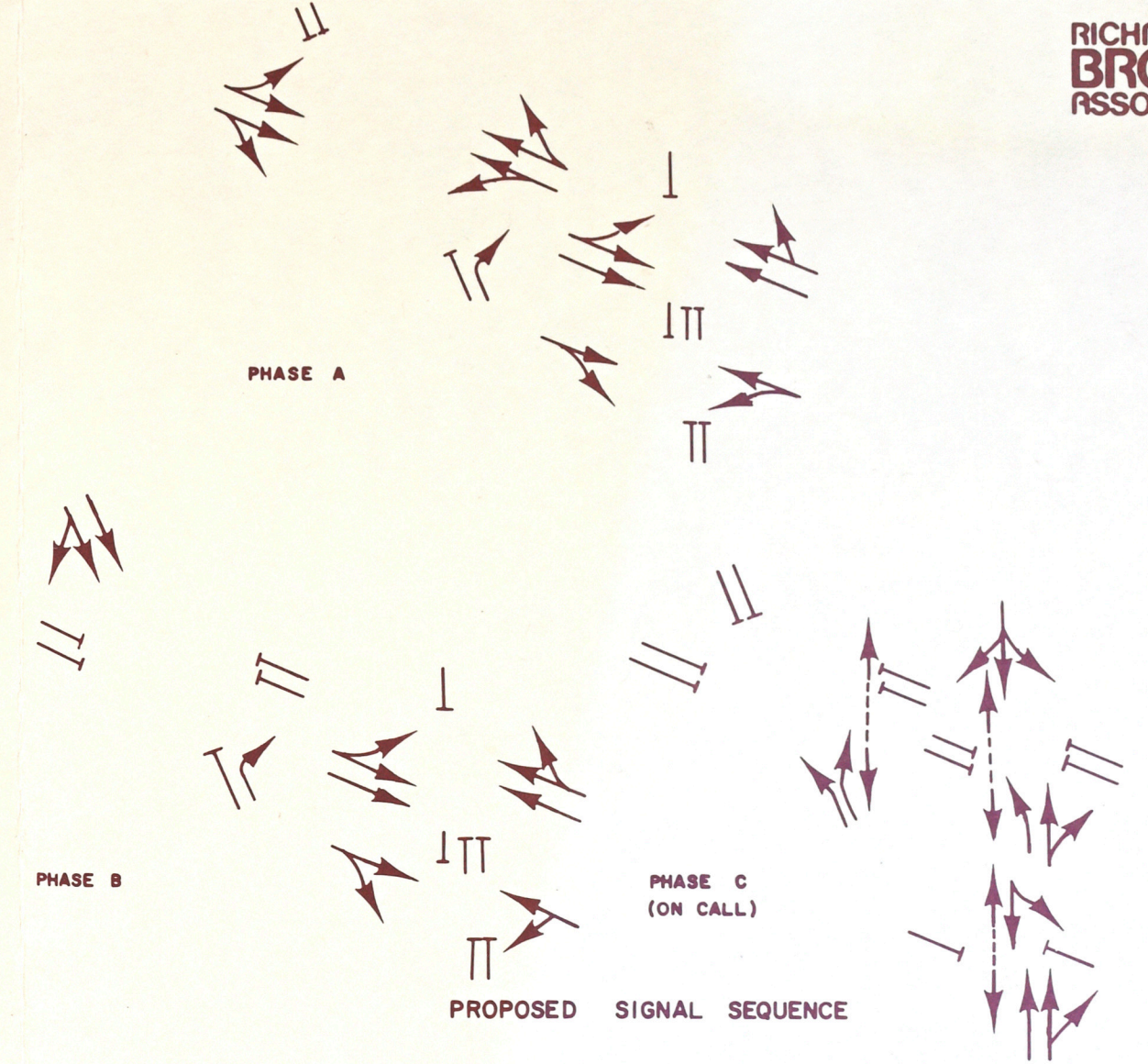
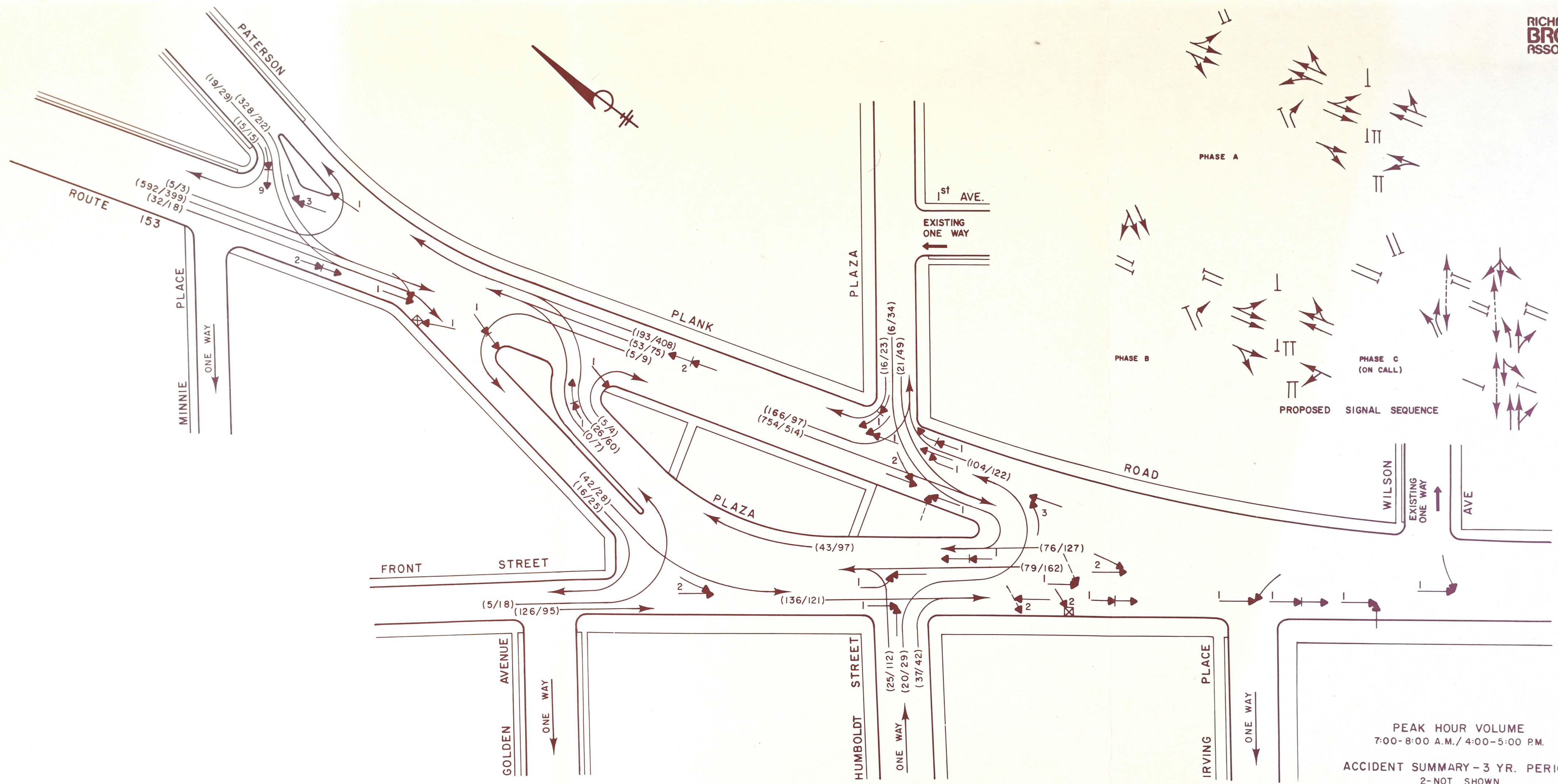
- 1) Heavy truck traffic on all intersection approaches
- 2) Inadequate road width on all approaches
- 3) Frequent and complete halt of traffic on New County Road and County Avenue due to the presence of a railroad crossing, 500 feet away from the intersection
- 4) Poor location of the "Stop" sign on New County Road results in motorists ignoring it

Recommendations

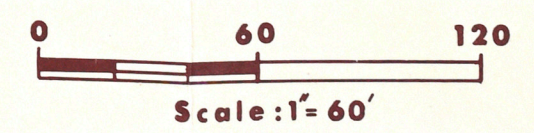
- 1) Widen County Avenue, New County Road and County Road
- 2) Install a fixed time traffic signal at the intersection
- 3) Prohibit parking on all approaches
- 4) Provide proper regulatory signs and pavement markings

Benefits

- 1) Improved intersection control
- 2) Improved traffic flow on New County Road
- 3) Reduction of delay on New County Road



PEAK HOUR VOLUME  
7:00-8:00 A.M./ 4:00-5:00 P.M.  
ACCIDENT SUMMARY - 3 YR. PERIOD  
2-NOT SHOWN



**PROPOSED IMPROVEMENT S5**

Problems

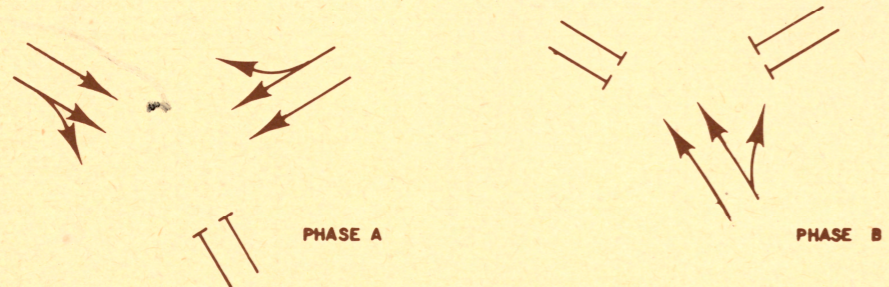
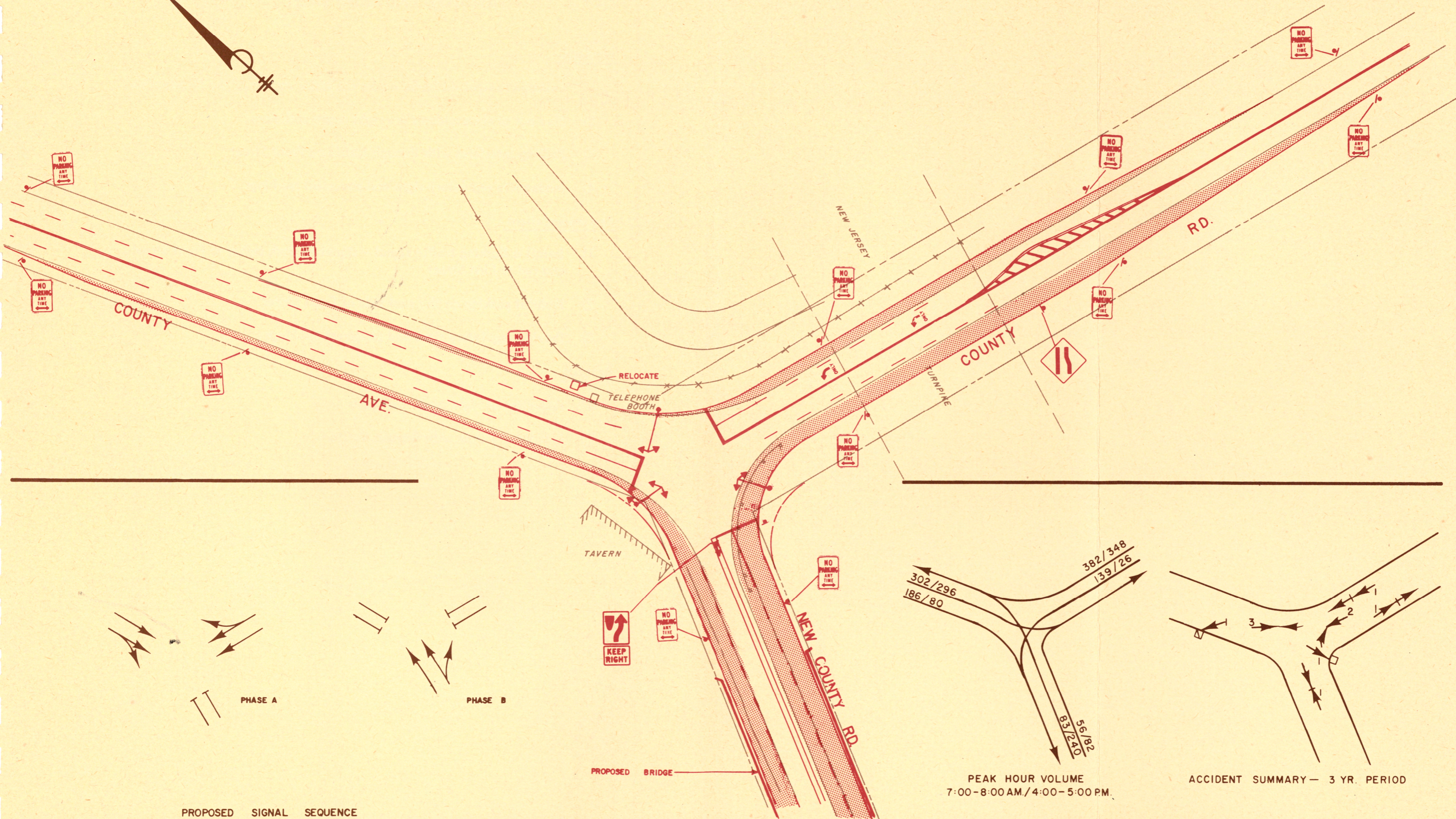
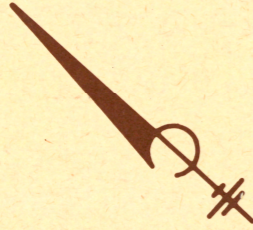
- 1) Inadequate sight distances across the south corners of the intersection
- 2) Five out of six accidents are right angle collisions
- 3) Parking interferes with through traffic on Front Street
- 4) Inadequate regulatory signs and pavement markings

Recommendations

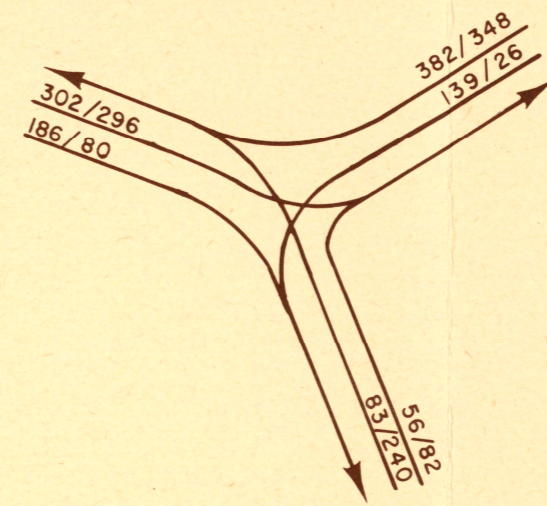
- 1) Install a flashing traffic signal - signal to flash amber to Front Street and red to First Street
- 2) Prohibit parking on the west side of Front Street
- 3) Provide regulatory signs and pavement markings

Benefits

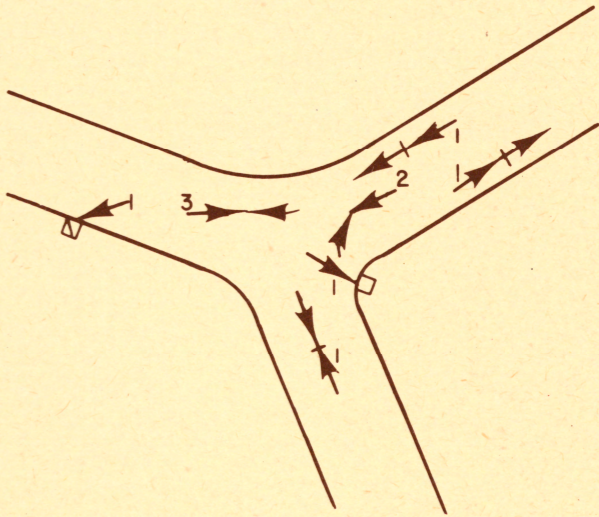
- 1) Reduction in right angle collisions
- 2) Less interference with through traffic



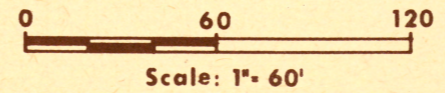
PROPOSED SIGNAL SEQUENCE

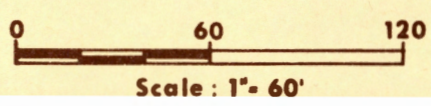
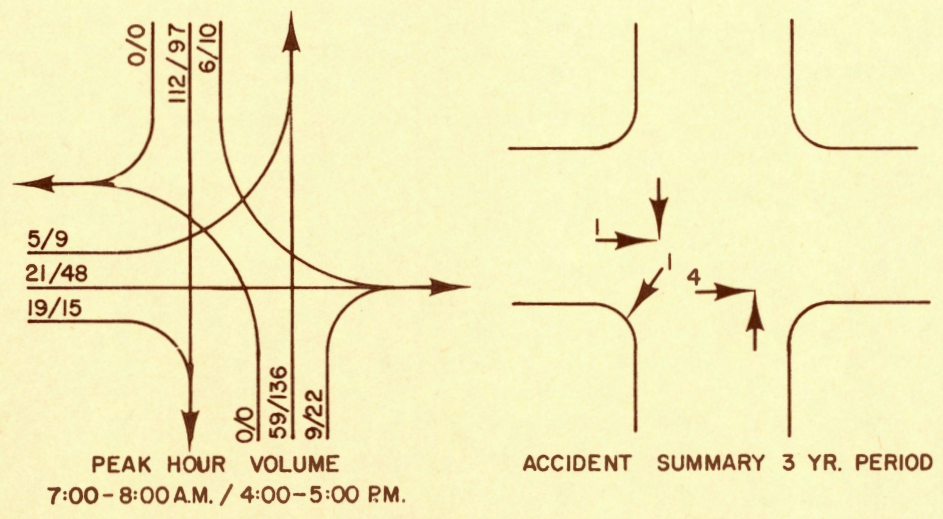
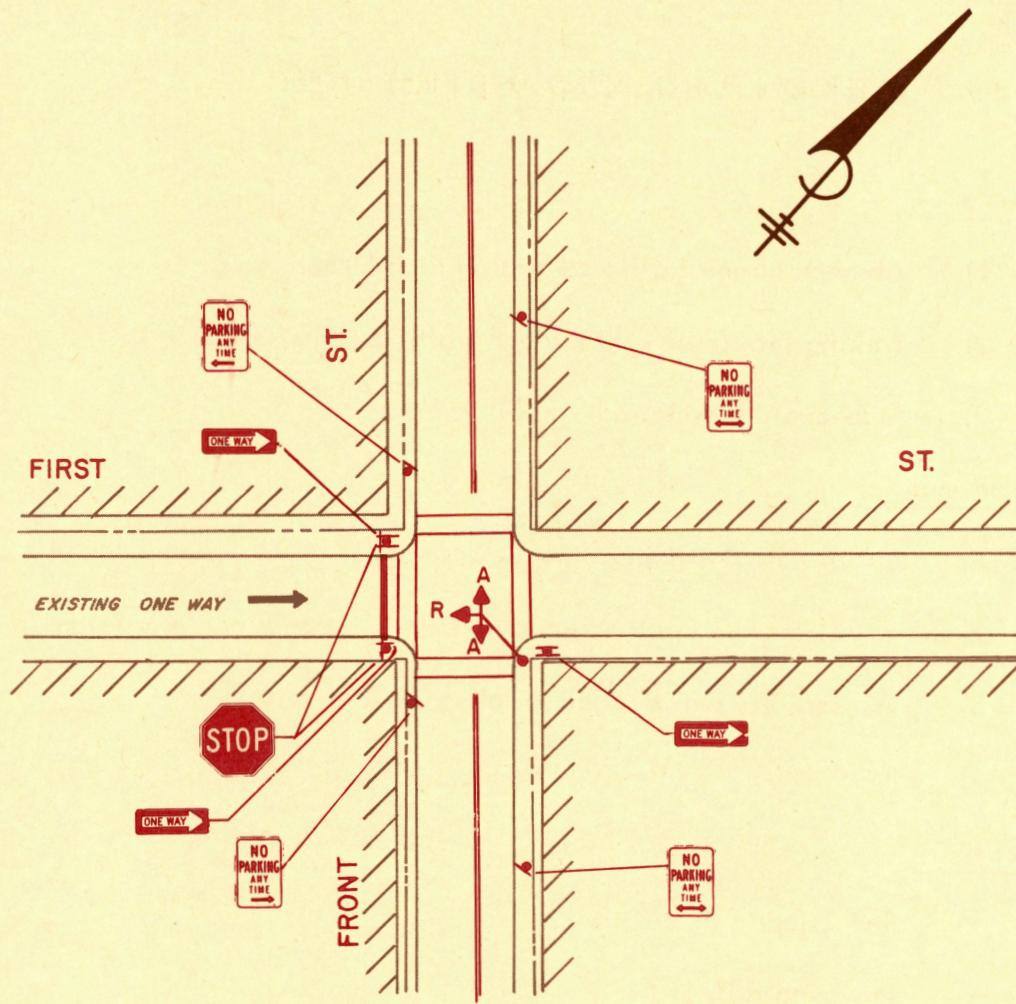


PEAK HOUR VOLUME  
7:00-8:00 AM / 4:00-5:00 PM



ACCIDENT SUMMARY - 3 YR. PERIOD





**PROPOSED IMPROVEMENT S7**

S - 8      PATERSON PLANK ROAD AND FIRST STREET

Problems

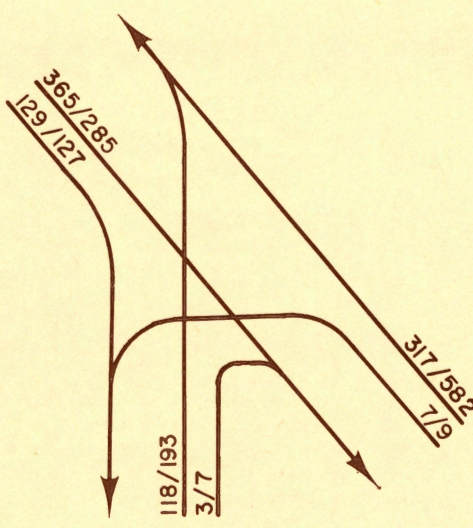
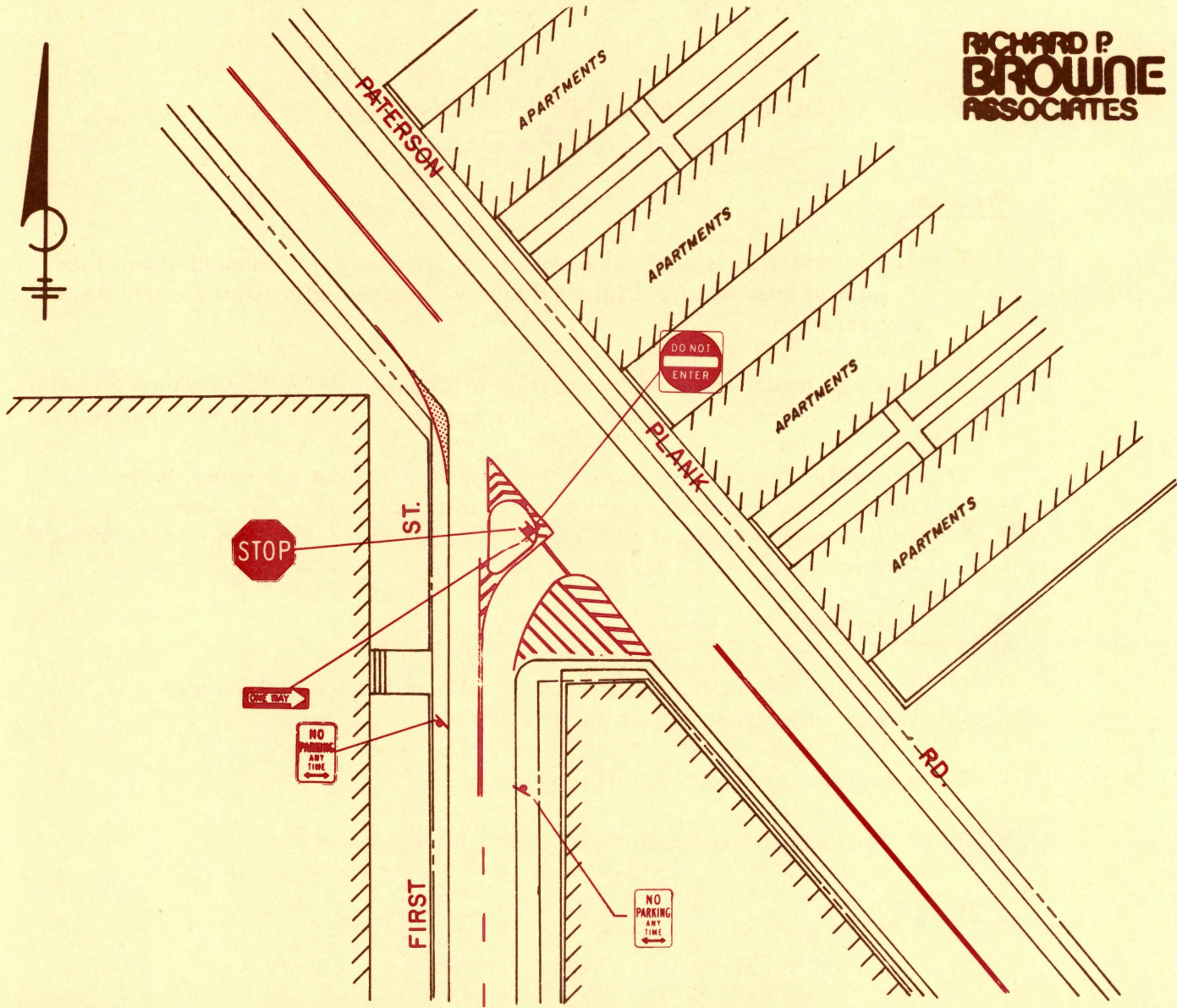
- 1)    Absence of any traffic control on First Street
- 2)    Parking interferes with through traffic on First Street
- 3)    Inadequate turning radii on all corners

Recommendations

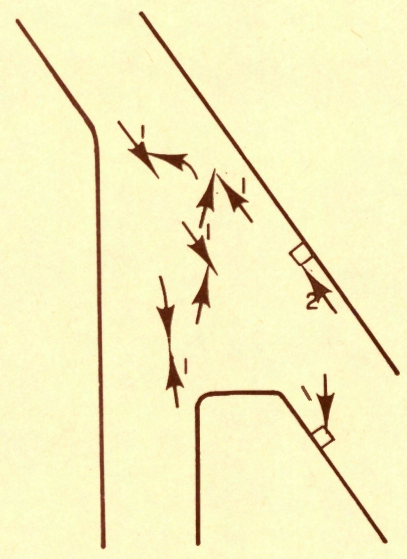
- 1)    Install "Stop" signs on First Street
- 2)    Install channelization, pavement markings and regulatory signs
- 3)    Increase the turning radii on all corners
- 4)    Prohibit parking on First Street

Benefits

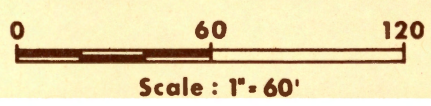
- 1)    Reduction in accidents
- 2)    Improved flow of traffic
- 3)    Better intersection control



PEAK HOUR VOLUME  
8:00-9:00 A.M. / 4:00-5:00 P.M.



ACCIDENT SUMMARY-3YR. PERIOD  
1 NOT SHOWN



**PROPOSED IMPROVEMENT S 8**

Problems

- 1) The intersection is a school crossing. A gap study was conducted and the number of gaps was insufficient to allow the children to cross County Avenue safely.
- 2) Average travel speed on that portion of County Avenue is more than 25 miles per hour. The spot speed at this location is in excess of 35 miles per hour.
- 3) Presently, the children cross County Avenue at Centre Avenue, where a school crossing guard is on duty. His interruption of County Avenue traffic seriously congests the nearby Paterson Plank Road and County Avenue intersection.

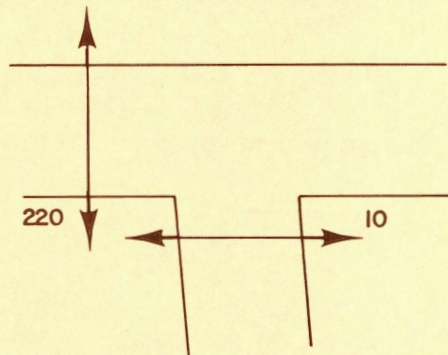
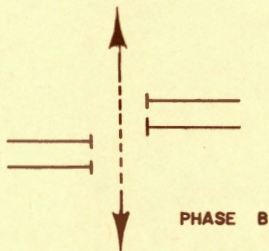
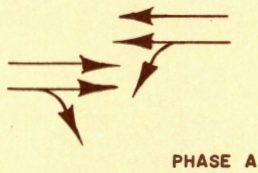
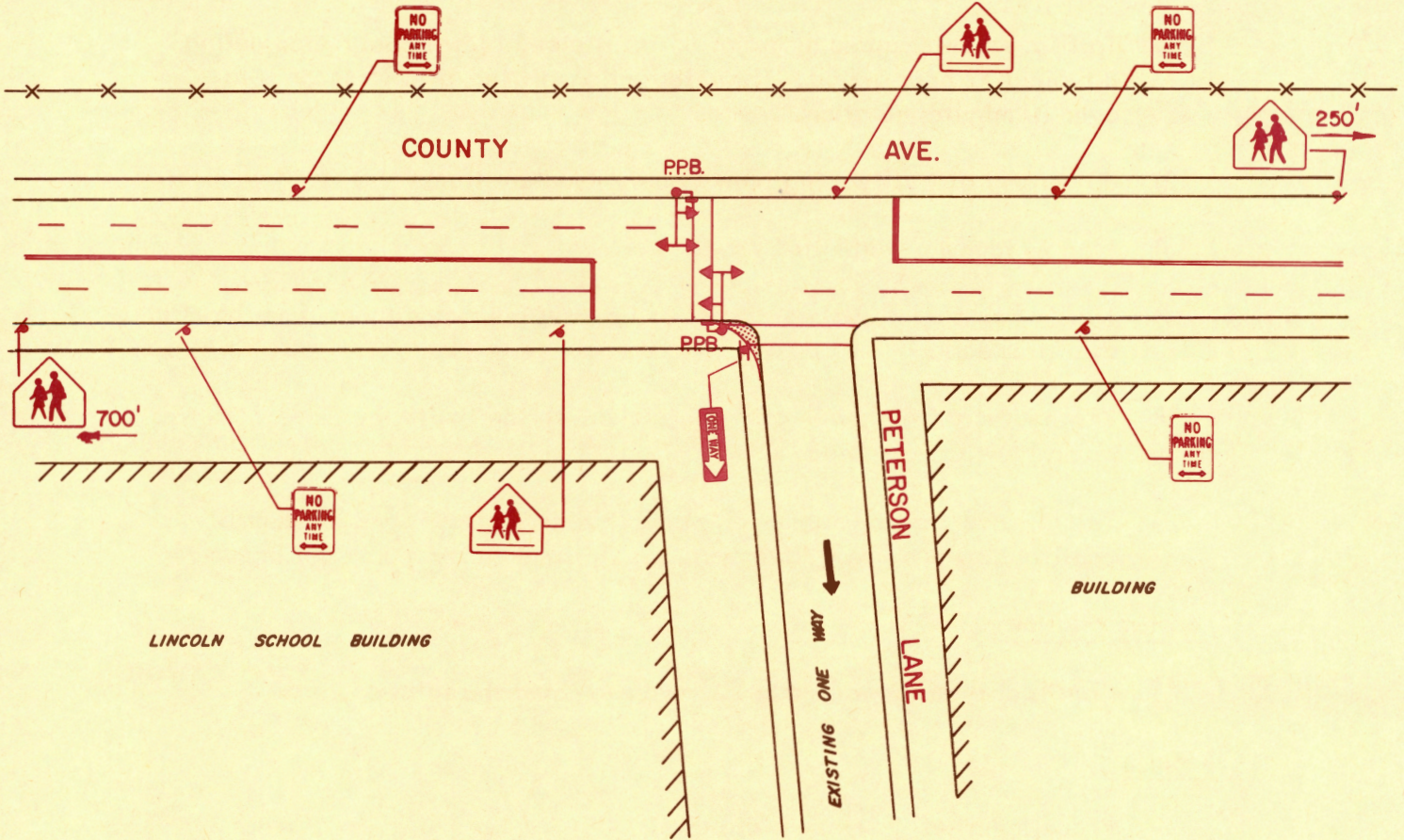
Recommendations

- 1) Install a semi-traffic actuated signal with pedestrian push buttons if the school crossing remains at this site.
- 2) Improve the turning radii at the south corner
- 3) Install appropriate regulatory and warning signs

Benefits

- 1) Improved traffic flow at Paterson Plank Road and County Avenue
- 2) Safer school crossing at County Avenue for schoolchildren

MEADOWVIEW HOSPITAL GROUNDS



PROPOSED SIGNAL SEQUENCE

PEDESTRIAN COUNT 7:30-8:30 A.M.



Scale : 1" = 60'

**PROPOSED IMPROVEMENT S 9**

## S - 10 NEW COUNTY ROAD BRIDGE OVER THE ERIE-LACKAWANNA RAILROAD

### Problems

- 1) Traffic was interrupted by trains 86 times along New County Road during a typical 12 hour period. The interruptions varied from 15 seconds to over 10 minutes duration.
- 2) 80 percent of traffic using New County Road are trucks
- 3) Narrow roadway width of 20 feet
- 4) Traffic backs up about  $\frac{1}{4}$  of a mile to County Avenue and sometimes blocks this intersection
- 5) Railroad yard freight operation stops and interferes with the flow of traffic along New County Road
- 6) The railroad crossing is manually operated and constant and dangerous conflict between truck drivers and the railroad crossing operator occurs.

### Recommendation

- 1) Construct a four lane bridge 500 feet long over the railroad yard

### Benefits

- 1) Reduction of vehicle operating costs
- 2) Reduction of delays for New County Road traffic
- 3) Elimination of conflict between trains and motor vehicles
- 4) Increased safety for both trucks and trains
- 5) More efficient train operation at the railroad yard
- 6) Increased roadway capacity

## S - 11. INTERCONNECTION OF PATERSON PLANK ROAD TRAFFIC SIGNALS

### Problems

- 1) The existing signals are not widely spaced
- 2) The existing signals operate independently of one another and traffic progression is non-existent

### Recommendations

- 1) Interconnection of all traffic signals, existing and proposed, along Paterson Plank Road
- 2) Installation of a master controller to supervise the local controller units

### Benefit

- 1) Improved traffic flow along Paterson Plank Road due to the co-ordinated operation of the traffic signals

Problems

- 1) Absence of "Stop" signs at the minor streets intersecting County Avenue
- 2) Nonconforming and inadequate signing at all streets intersecting Route 153
- 3) Absence of lane markings on Paterson Plank Road
- 4) Almost all of the "Stop" signs on the minor streets intersecting Paterson Plank Road, Centre Avenue and Front Street are of the non-reflecting type
- 5) Lack of reflecting street name signs

Recommendations

- 1) Install "Stop" signs at minor streets intersecting County Avenue
- 2) Install appropriate "Stop", "One-Way" and "Do Not Enter" signs on all the streets intersecting Route 153
- 3) Install reflectorized "Stop" signs on all minor streets intersecting Paterson Plank Road, Front Street and Centre Avenue
- 4) Install lane lines on Paterson Plank Road
- 5) Install reflectorized street names on all of the streets on study system

Benefits

- 1) Improved sign visibility and intersection control
- 2) Better organization of traffic flow on Paterson Plank Road

To improve traffic circulation in the central business district area it will be necessary to prohibit parking at or near many critical intersections and along some of the major streets. Prohibition of this parking will result in the loss of approximately 66 spaces in this downtown area. Sufficient vacant land is available to provide the space necessary for construction of offstreet parking facilities. It is recommended that TOPICS funds be utilized for the construction of these offstreet parking facilities.

## IX - FINANCIAL PROGRAM

The following proposed implementation schedule resulted from reviewing the priority indices previously computed and adjusting them to provide harmony where interdependence exists between the locations. Consideration has also been given to the necessity of obtaining local public support for this program since the municipality may be required to participate in the improvement costs. Some of the projects selected for early implementation are locations with which the local resident is familiar and about which he expresses much concern. By correcting early a few of the lower priority projects (based on a technical analysis) we impress upon the community the value of TOPICS as an action program and gain their valuable support for implementation of the other projects.

### PROPOSED IMPELEMENTATION SCHEDULE

TABLE VII

<u>Year</u>	<u>Improvement Location</u>	<u>Estimated Cost*</u>	
		<u>Present Worth</u>	<u>Adjusted Cost **</u>
1973	County Avenue and Secaucus Road ***	\$ 85,000	
	County Ave., County Rd., and New County Road ***	73,200	
	First Street and Paterson Plank Road ***	6,400	
	Bridge over Erie-Lackawanna Railroad Yard	5,000,000	
	Paterson Plank Road, Roosevelt Avenue and Post Place	25,100	
	<b>1973 TOTAL</b>	<b>\$5,189,700</b>	<b>\$5,189,700</b>
1974	N.J. Turnpike Ramp and Paterson Plank Rd.	\$ 25,900	
	County Avenue and Paterson Plank Road	42,900	
	The Plaza ****	56,000	
	Parking Facilities ****	66,000	\$ 221,100
	<b>1974 TOTAL</b>	<b>\$ 200,800</b>	<b>\$ 221,100</b>
1975	First Street and Front Street	\$ 5,000	
	County Avenue and Peterson Lane	17,500	
	Traffic Signal System	--	
	Signs and Pavement Markings	5,600	
	<b>1975 TOTAL</b>	<b>\$ 28,100</b>	<b>\$ 32,500</b>
	<b>3 YEAR TOTAL</b>	<b>\$5,418,600</b>	<b>\$5,443,300</b>

\* Exclusive of Right of Way acquisition

\*\* Cost adjusted for 5 percent rate of inflation per annum

\*\*\* Early implementation project

\*\*\*\* Joint Project

## X - SYSTEM MAINTENANCE AND EVALUATION

### Maintenance of the Arterial System

The maintenance of all traffic control devices on the State Highway System is a responsibility of the New Jersey Department of Transportation. The maintenance of all traffic control devices including traffic signals on the county road system is a responsibility of the Hudson County Road Department. The maintenance of traffic control devices on municipal streets is the responsibility of the Secaucus Street Department.

It is felt that each of these agencies has the capability to adequately maintain any and all TOPICS improvement projects on their respective streets. It may be necessary however, for the Secaucus Street Department to either have a private electrical contractor perform maintenance of the proposed flashing signal at the intersection of Front Street and First Street or arrange on a reimbursement basis to have the Hudson County Road Department perform this service.

Of the various TOPICS improvement projects, nine involve either the modernization of the existing traffic signal or the installation of a new traffic signal. One improvement is the construction of a bridge while two other improvements are mainly intersection channelization and pavement markings. Estimated annual maintenance and operating costs for these projects are assumed to be \$6,200. per year.

### Evaluation

In order to identify locations where traffic operational improvements are required, use was made of accident experience, average travel speeds on routes, congestion and delay at intersections, and the level of service provided. To measure the success of this program requires an in depth analysis of traffic conditions before and after implementation. This study provides the necessary data to evaluate a location as it now exists before the operational improvements have been implemented. Some additional speed and delay runs can be conducted to increase the reliability of our sample but other than this the necessary information has been inventoried.

After a reasonable period of time has elapsed, similar studies regarding accident experience, speed and delay runs and locations of congestion and delay can be conducted along selected routes where early implementation projects have been completed. Comparison of traffic conditions before and after improvement should be made to insure that the desired benefits are being achieved.

## STUDY PARTICIPANTS

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Lieutenant Traffic Bureau

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Supervising Engineer  
Chief  
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Highway Engineer  
Highway Engineer

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Traffic Engineer  
Traffic Engineer  
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Typist  
Chief Draftsman  
Draftsman  
Draftsman  
Draftsman  
Draftsman  
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Technician  
Technician