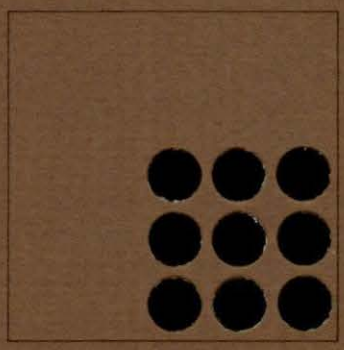
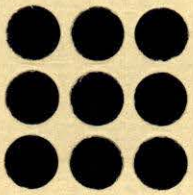


TOPICS
Township of Wayne
Passaic County, New Jersey

RICHARD P. BROWNE ASSOCIATES



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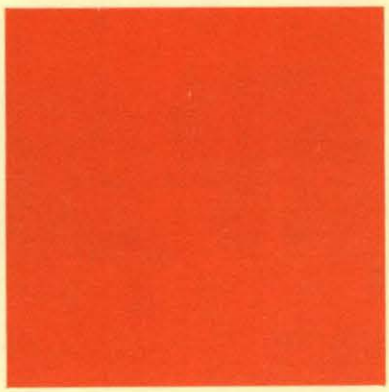

TOWNSHIP OF WAYNE

NEW JERSEY DEPARTMENT OF TRANSPORTATION

IN COOPERATION WITH

PASSAIC COUNTY

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

AUGUST, 1972

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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 sytem 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 sytem 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 detractors' 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 37½% 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 Township of Wayne is a rapidly-developing community of approximately 50,000 persons located within the largest metropolitan region in the United States. Because of its location, Wayne shares the problems, as well as the advantages, of being within the sphere of influence of larger cities such as Paterson, Newark and New York City. One major problem is that of providing adequate transportation facilities to maintain good communications within the Tri-State Metropolitan Region.

The map on PLATE I shows the location of the sphere of study within this region and the major highways which connect it to New York City and the surrounding areas. The two interstate highways which will pass through the county are Interstate 80, primarily an east-west route and Interstate 287, which traverses the county in a northeast-southwest direction. Even with the completion of Interstate 80, U.S. Route 46 shall continue to carry the bilk of the predominantly east-west traffic through the county.

Wayne has adequate, although somewhat congested, highway access leading in all directions. However, it has but one railroad station located in the southwest portion of the township at Boonton Road and Erie Avenue. This station is on the Greenwood Lake Branch of the Erie-Lackawanna Railroad which runs from Netcong in Morris County to Hoboken in Hudson County. There are eight trains eastbound during the morning peak hours (7:00 to 8:30 A.M.) and eight trains westbound during the evening peak hours (5:00 to 7:30 P.M.) on this branch of the railroad. Commuters wishing to go to New York City, Newark, or other northern New Jersey destinations by rail must make bothersome transfers, which enhances the economics and desirability of travelling by automobile.

Public bus service within the community is extremely limited. Several bus routes pass through the township along the major arteries, but there is virtually no internal bus circulation. Connections to most locations within the surrounding region are possible, but the infrequent service and inconvenient transfers required discourage most potential bus users.

Two major commercial airports, Newark and LaGuardia, are less than an hours drive by highway from Wayne. Although slightly farther, John F. Kennedy International Airport is still readily accessible. Two general aviation airports of significance within close proximity are the Caldwell-Wright Airport in adjacent Fairfield Township in Essex County and Teterboro Airport in Bergen County. The only ground access to all of these airports 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.

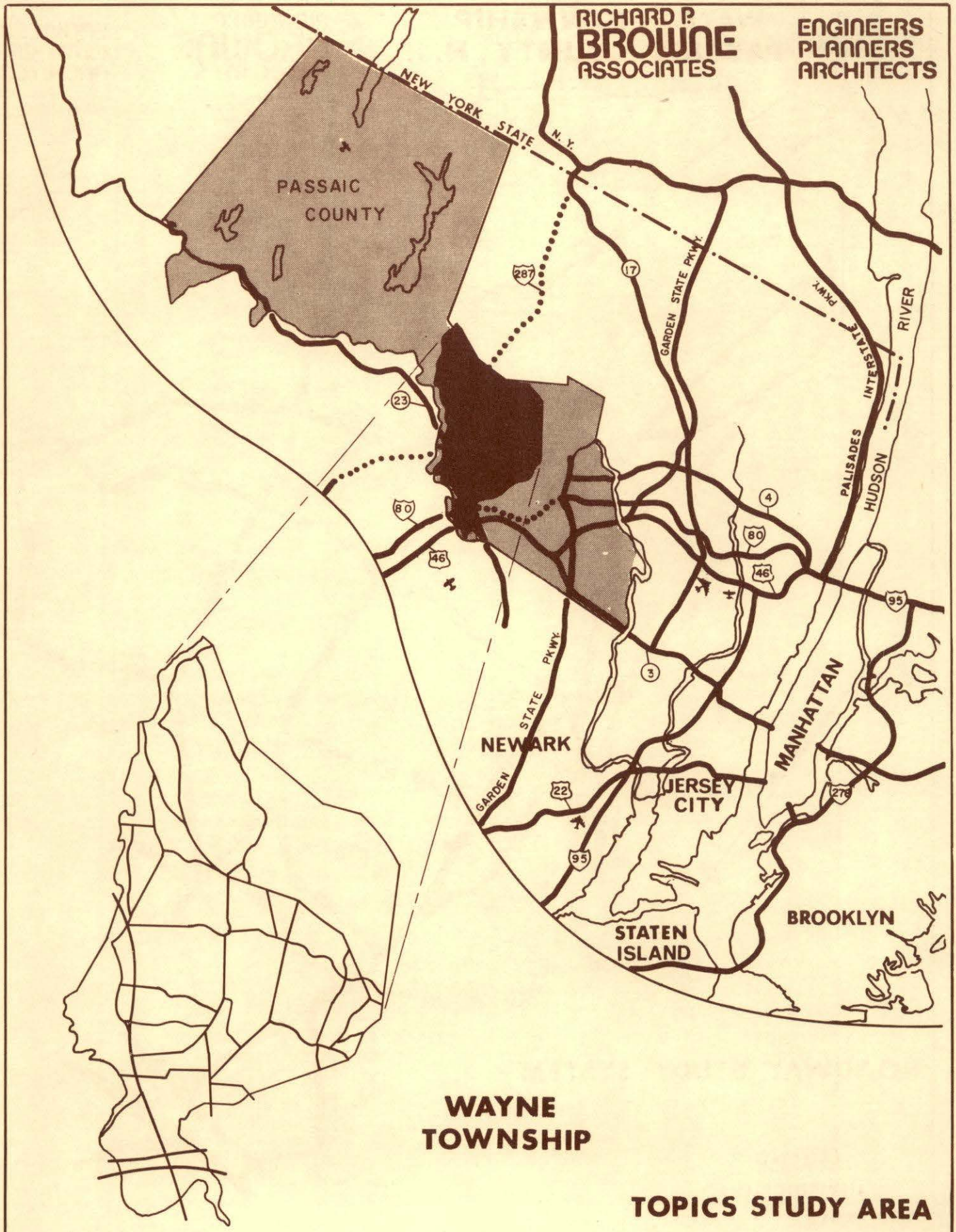
(3) The Federal-Aid Secondary Highway System consists of farm-to-market roads in rural areas and the major feeder routes into a city. Intra-urban arterial highways not on the above systems may also qualify for this designation. These roads usually receive matching federal funds on a 50%-50% basis for 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) The Passaic County Road network not only includes highways and streets presently on the state-aid system, but also some collector streets of less importance, most of which are included in the TOPICS study. The county maintains these roads and provides the local contribution for construction or reconstruction costs.

(7) 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.


RICHARD P. BROWNE ASSOCIATES
ENGINEERS
PLANNERS
ARCHITECTS
NEW YORK STATE
N. Y.
PASSAIC COUNTY
287
17
GARDEN STATE PKWY.
INTERSTATE PKWY.
PALISADES
HUDSON RIVER
23
80
46
4
95
3
NEWARK
GARDEN STATE PKWY.
MANHATTAN
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JERSEY CITY
278
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BROOKLYN
STATEN ISLAND
WAYNE TOWNSHIP
TOPICS STUDY AREA
PLATE I

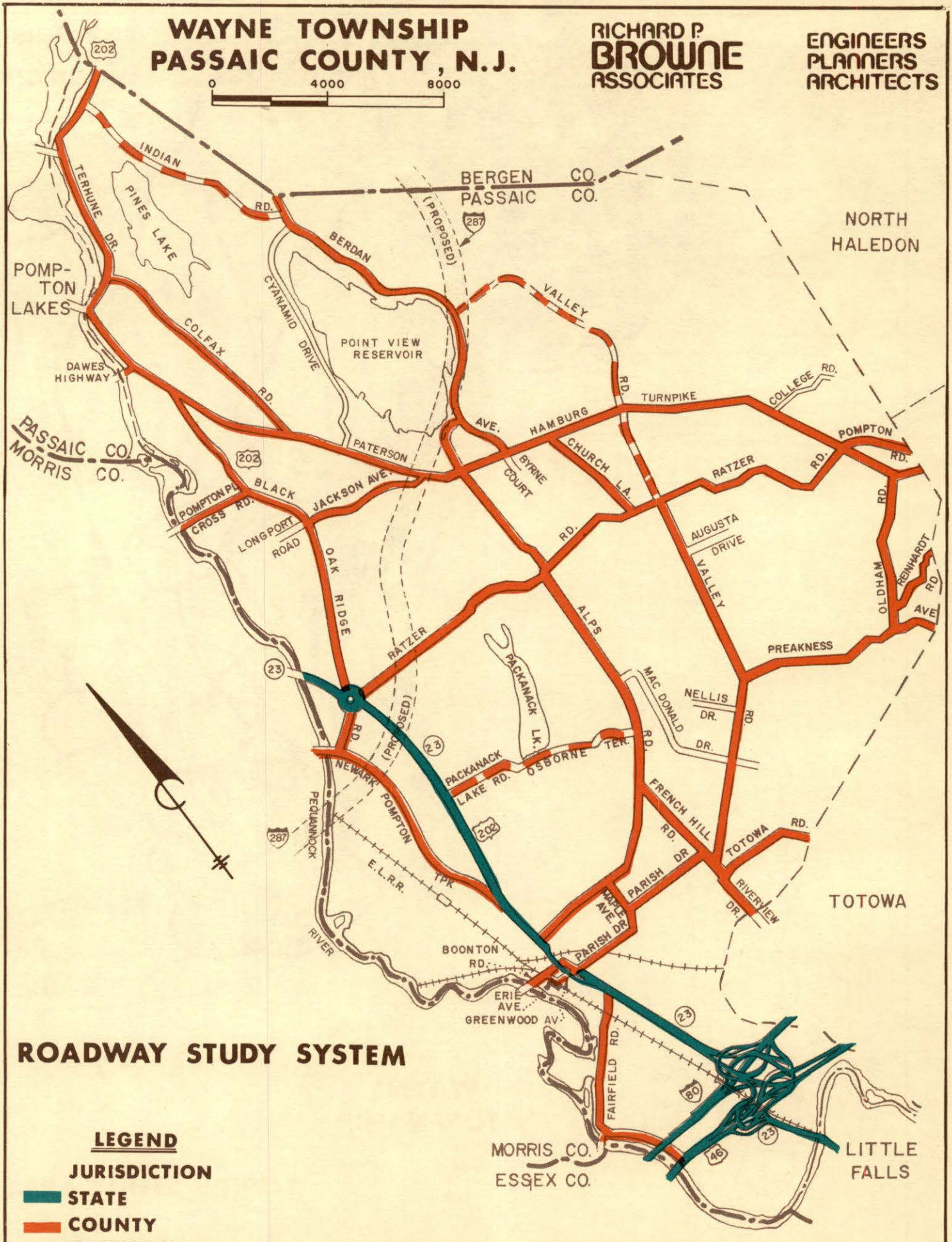

WAYNE TOWNSHIP
PASSAIC COUNTY, N.J.
0 4000 8000
RICHARD P. BROWNE ASSOCIATES
ENGINEERS PLANNERS ARCHITECTS
INDIAN RD.
TERHUNE DR.
PINES LAKE
BERGEN CO.
PASSAIC CO.
(PROPOSED)
287
NORTH HALEDON
POMP-TON LAKES
BERDAN
CYANAMID DRIVE
POINT VIEW RESERVOIR
VALLEY RD.
COLFAX RD.
DAWES HIGHWAY
TURNPIKE
COLLEGE RD.
POMPTON RD.
PASSAIC CO.
MORRIS CO.
202
PATERSON HAMBURG AVE.
CHURCH LA.
BYRNE COURT
RATZER RD.
POMPTON PL.
CROSS RD.
BLACK
JACKSON AVE.
LONGPORT ROAD
OAK RIDGE
AUGUSTA DRIVE
VALLEY RD.
OLDHAM RD.
REINHARDT AVE.
ALPS RD.
PREAKNESS
23
RATZER
PACKANACK LK.
MAC DONALD DR.
NELLIS DR.
NEWARK POMPTON TPK. (PROPOSED)
PACKANACK LAKE RD.
OSBORNE TER.
FRENCH HILL RD.
TOTOWA RD.
PEQUANNOCK
E.L.R.R.
PARISH DR.
MAPLE AVE.
RIVERVIEW DR.
TOTOWA
RIVER
BOONTON RD.
ERIE AVE.
GREENWOOD AV.
FAIRFIELD RD.
80
46
MORRIS CO.
ESSEX CO.
LITTLE FALLS
ROADWAY STUDY SYSTEM
LEGEND
JURISDICTION
STATE
COUNTY
MUNICIPAL

PLATE II

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 comparision. 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 is frequently not filed in a manner suitable for use by the traffic engineer or traffic safety officer. A detailed analysis of this information can be made quickly by placing the available statistics into a format which can be sorted by a computer program. Data on all accidents which occurred on the study system during the years 1967 through 1969 has been collected from records kept in the police files of the municipality. This information is then fed into a computer memory and stored for future sorting and recall. In this way the computer is capable of printing out summaries of collisions classified by location, severity, date, time of day, type, or road conditions.

The total number of reportable accidents occuring 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 collision 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 furthur 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.

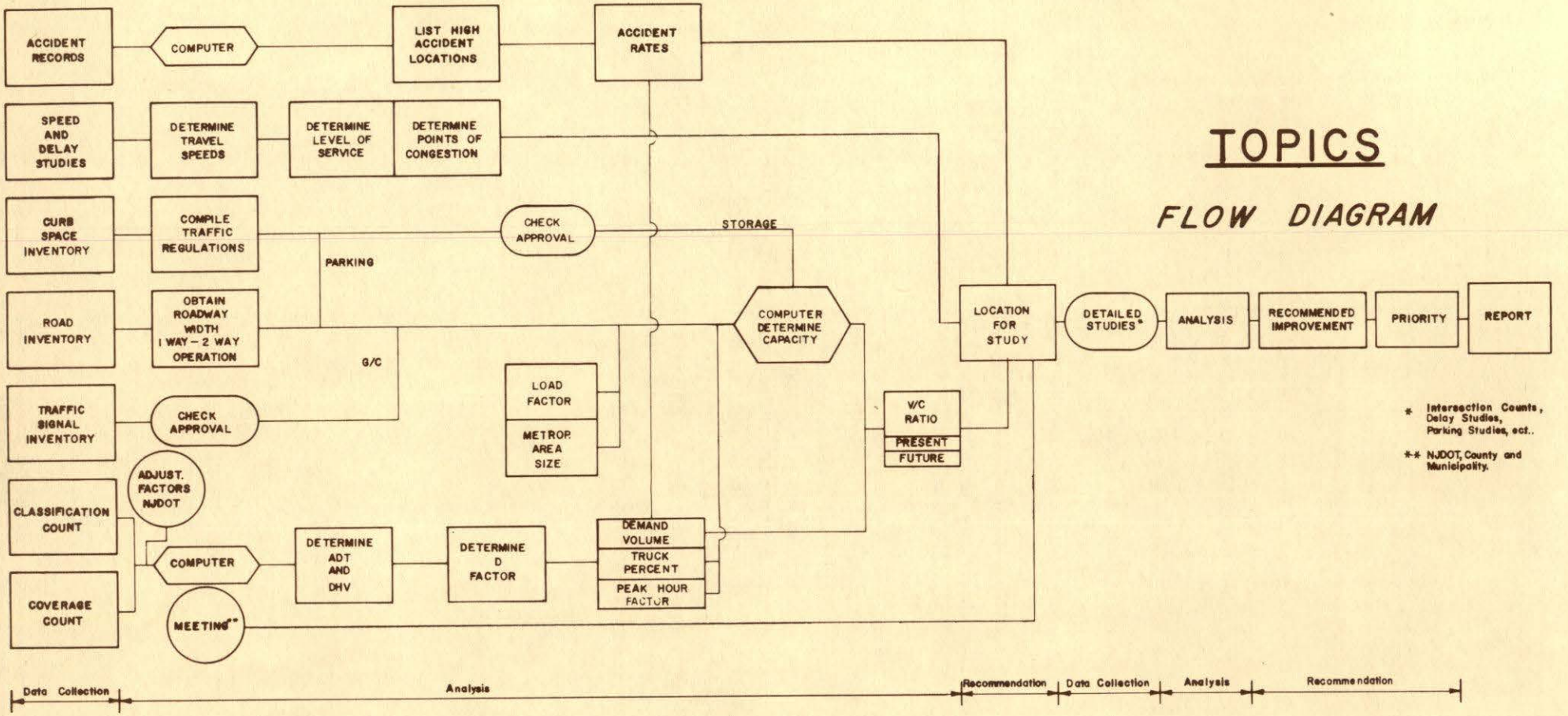
Local Participation

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 inadvertantly 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 or 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.

PLATE III

RICHARD P. BROWNE ASSOCIATES

ENGINEERS
PLANNERS
ARCHITECTS

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, records from the New Jersey Department of Transportation's permanent stations in Passaic County have been used to obtain these long range factors.

All coverage counts obtained for this study were taken for a 24-hour weekday period, since there is 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.

(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 includes one 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 unusually 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 Usage 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 Township of Wayne is shown on PLATE IV.

Traffic Regulations Inventory

A review was made of all local ordinances and regulations within the Township of Wayne 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 affect 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.

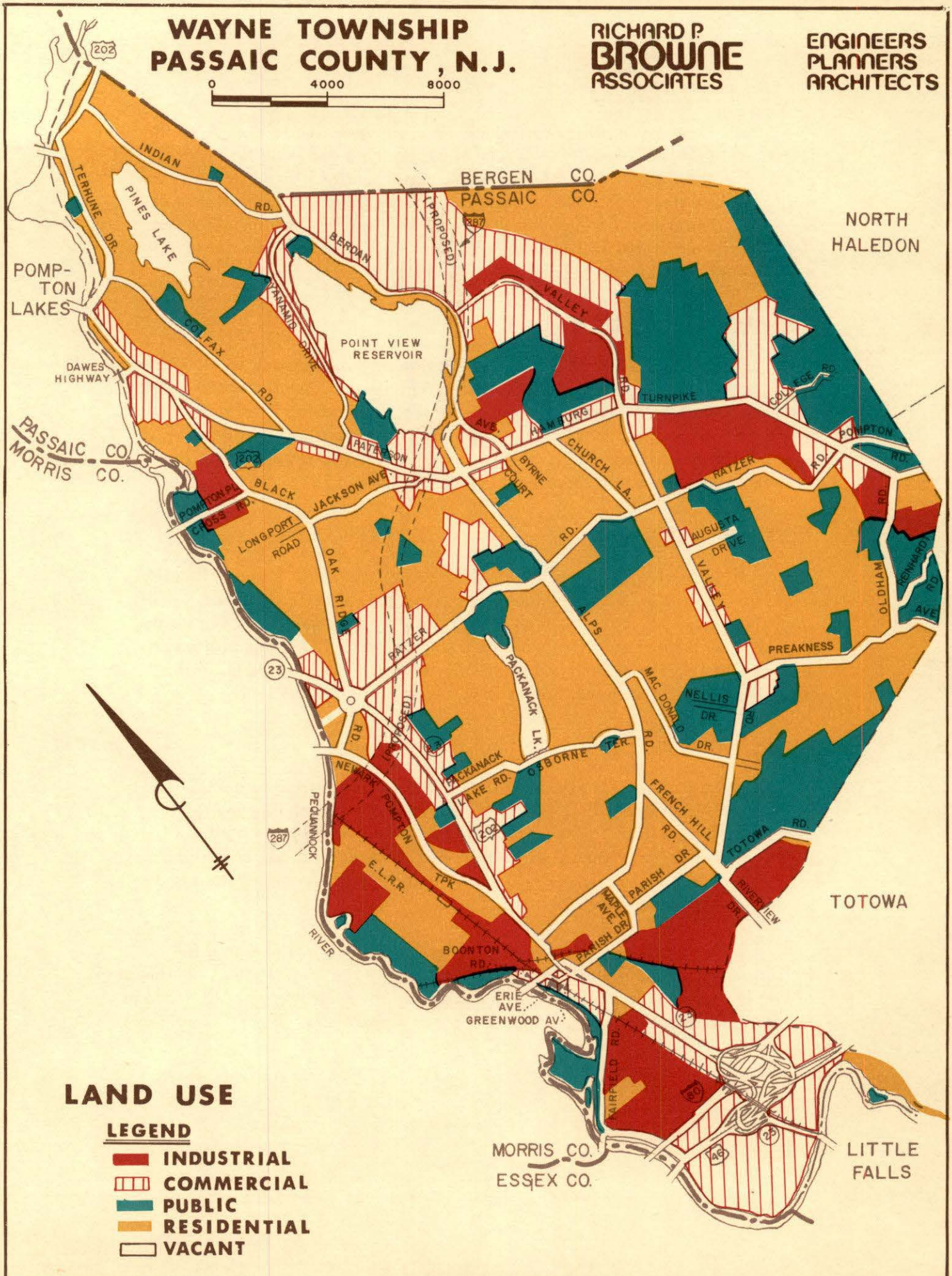
Intersection Survey

If no existing plan was available a survey was made for each location found to have a significant accident rate or traffic capacity deficiency. All significant physical features, such as curb lines, traffic markings, signals and signs, sidewalks and buildings were then located in the field and plotted on 20 scale plans. The majority of these intersections were considered in this study for improvement according to their recommendation priority.

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.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PASSAIC CO.
NORTH HALEDON
POMPTON LAKES
PASSAIC CO.
MORRIS CO.
TOTOWA
MORRIS CO.
ESSEX CO.
LITTLE FALLS
INDIAN RD.
TERHUNE DR.
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VALLEY
POINT VIEW RESERVOIR
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PANAMA DRIVE
PATERSON
TURNPIKE
COLLEGE RD.
POMPTON RD.
RATZER RD.
BLACK
JACKSON AVE.
POMPTON PL.
CROSS RD.
LONGPORT ROAD
OAK RIDGE
BYRNE COURT
CHURCH LA.
AUGUSTA DRIVE
VALLEY
OLDHAM
REINHARDT RD.
AVE.
PREAKNESS
ALPS
PACKANACK LK. RD.
MAC DONALD DR.
NELLIS DR.
OSBORNE TER.
PACKANACK LAKE RD.
NEWARK POMPTON TPK.
(PROPOSED)
PEQUANNOCK RIVER
E.L.R.R.
FRENCH HILL RD.
PARISH DR.
MAPLE AVE.
RIVERVIEW DR.
TOTOWA RD.
BOONTON RD.
ERIE AVE.
GREENWOOD AV.
FAIRFIELD RD.
LAND USE
LEGEND
INDUSTRIAL
COMMERCIAL
PUBLIC
RESIDENTIAL
VACANT

PLATE IV

V - SUMMARY OF TRAFFIC AND ROAD CONDITIONS

Only by evaluating and analyzing the existing traffic and road conditions can problem areas be determined and selection made of the type improvements necessary to minimize the accident rate and maximize the smooth flow of traffic.

Travel Speeds

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

For a suburban township like Wayne, average travel speeds over 30 miles per hour can generally be considered satisfactory. N.J. Route 23, from the Little Falls line to Boonton Road, is a very heavily used four lane artery which is frequently so congested that drivers average less than 20 miles per hour while travelling approximately one and one half miles. The only alternative north-south route in the lower portion of Wayne is Riverview Drive, another over-saturated street, which averages just over 20 miles per hour.

Portions of the Paterson-Hamburg Turnpike are also substandard in respect to travel speeds, averaging less than 25 miles per hour. Delays are common at the traffic signals at Terhune Drive, Black Oak Ridge Road, Cyanamid Drive, and Alps Road. These signals and interference from the shopping centers between Alps Road and Church Lane, are primarily responsible for the low travel speeds. Church Lane and Parish Drive, which carry a high percentage of through traffic although running through residential neighborhoods, also have travel speeds averaging under 25 miles per hour.

Those arterial streets with speeds averaging in the 25-30 mile per hour range include Valley Road, Alps Road, Preakness Avenue, Jackson Avenue, Boonton Road and Fairfield Road. Other roads which are principally residential collector streets and also average under 30 miles per hour are Packanack Lake Road, Osborne Terrace, Indian Road and Oldham Road.

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 area. Since each method has its merits, decisions regarding

improvement priorities should consider the number of collisions as well as the accident rate. Link accident rates reflect the frequency of accidents between major intersections, and are computed by determining the number of accidents per million vehicle miles. These link accident rates are discussed furthur in Chapter VIII, "Traffic Problem Locations". 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 II show the number of accidents at all intersections in the study network which experienced an average of four or more accidents per year.

Those intersections experiencing high numbers of accidents, combined with high accident rates, are almost all located along N.J. Route 23 and the Paterson-Hamburg Turnpike. Other intersections with above average accident recurrance are Black Oak Ridge Road and Jackson Avenue, Ratzer Road and Valley Road, Valley Road and MacDonald Drive, and Valley Road and French Hill Road. These all experienced accident rates in excess of 7.5 per ten million vehicle exposures.

Traffic Volumes

A good overview of the current problem areas in the traffic system can be obtained by analyzing travel speeds and delays and 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 analyzed and present and projected land usage patterns are studied.

(1) 1970 Traffic Volume

From data collected during the calendar year 1970, the present number of vehicles and various patterns of their travel characteristics on the streets can be determined. Present traffic volumes within the Township of Wayne are illustrated on PLATE VII.

The bulk of the north-south traffic is carried through the Township of Wayne on N.J. Route 23 where daily volumes range from 30,000 to over 40,000 vehicles. Riverview Drive, attempting to absorb much of the overflow of N.J. Route 23, carries daily volumes of more than 20,000 vehicles. To a lesser extent Valley Road, on which approximately 15,000-20,000 vehicles travel daily, and Black Oak Ridge Road and Alps Road with volumes of 12,000 vehicles per day, carry most of the remaining north-south traffic.

U.S. Route 46 is the major east-west highway through the Township of Wayne and carries a volume of over 110,000 vehicles per day east of N.J. Route 23. Most of the remaining east-west traffic is carried on Paterson-Hamburg Turnpike, where volumes range up to 25,000 vehicles per day. Parish Drive and Ratzer Road also serve the township as east-west arterials with daily volumes of 8,000 to 12,000 vehicles.

Volumes for peak periods of traffic flow are 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. Present peak-hour levels of service at improvement locations are illustrated on PLATE VIII. Ideally, "C" or "D" is the most desired level of service since this is approaching 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 increasing 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 anticipate newly developing problem areas and to check the adequacy of all proposed improvements. PLATE IX shows the projected volumes for 1975 and 1980. TABLE I shows these projected volumes along with the pavement and right-of-way widths recommended to accommodate these flows.

Pavement and Right-of-Way

Existing pavement width, type, and condition have a very strong influence on capacities and safety. The adequacy of the pavement was evaluated for present and predicted future volumes and pavement markings were also analyzed to assure the best utilization of the pavement area available with maximum safety. When roadway improvements are being constructed, adequate right-of-way widths should be obtained to allow for future widening.

As an urban area becomes increasingly developed, land values rise rapidly and the acquisition of right-of-way becomes extremely difficult. See PLATE X and TABLE I for existing pavement and right-of-way widths.

Traffic Control System

The planning, design and maintenance of a traffic control system (signs and signals, parking and speed regulations, pavement markings, etc.) is called traffic operations. These operational aspects of a street or 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 and reevaluated to see if it is truly responsive to traffic demands. A well designed traffic signal normally eliminates or reduces the number of accidents involving right angle collisions, left turn movements and pedestrians as well as improving traffic flow. However, a poorly designed installation can actually increase the number of same direction accidents at an intersection. If such accidents are to be prevented, there must be adequate visibility of the signal heads to provide sufficient driver reaction, the clearance intervals must be adequately timed to allow drivers to stop safely, and bulbs must be replaced frequently so that the signal lenses are properly illuminated and not confusing to drivers.

An installation may be well laid out with modern equipment and design standards, but not be working efficiently due to improper timing nor 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 XI and listed on TABLE III.

(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. An evaluation should be made to see if they are performing the function for which they are intended. Regulatory signs must be strictly enforced or motorists soon lose respect for them and eventually disregard them.

(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 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 prohibitions during peak traffic hours will greatly increase the street's capacity for moving traffic. For these reasons, parking regulations and practices were inventoried and analyzed to determine their effect on capacity and safety. This analysis also considered whether or not the posted regulations had been approved by the State of New Jersey.

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 severly 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 XII.

TOWNSHIP OF WAYNE

TRAFFIC VOLUMES AND PAVEMENT AND RIGHT-OF-WAY WIDTHS TABLE I

STREET NAME	FROM	TO	AVERAGE WEEKDAY TRAFFIC VOLUMES ACTUAL 1970	ESTIMATED 1975	ESTIMATED 1980	PAVEMENT WIDTH-PARKING EXIST.	DES.	R.O.W. WIDTH EXIST.	DES.
U.S. Route 46	Totowa Line	N.J. Route 23	112,800	92,650 *	108,670 *				
U.S. Route 46	N.J. Route 23	Fairfield Line	22,250	30,460 *	35,730 *				
N.J. Route 23	Little Falls Line	I-80 Interchange	20,600	23,300	26,350				
N.J. Route 23	I-80 Interchange	Boonton Rd.(Rt.202)	41,200	48,340	56,730				
N.J. Route 23	Boonton Rd.(Rt.202)	Ratzer Road Circle	31,800	37,310	43,780				
Black Oak Ridge Road	Ratzer Road Circle	Jackson Avenue	11,450	13,440	15,770	28-P	50-N	50	66
Black Oak Ridge Road	Jackson Avenue	Pompton Plains Cr Rd	12,900	15,140	18,550	40-P	50-N	50	66
Black Oak Ridge Road	Pompton Plains Cr Rd	Hamburg Turnpike	11,500	13,520	15,860	23-N	50-N	50	66
Hamburg Turnpike	Terhune Drive	Dawes Highway	21,900	25,700	30,150	40-N	72-N	66	120
Hamburg Turnpike	Dawes Highway	Black Oak Ridge	22,900	26,870	31,530	40-N	72-N	66	120
Hamburg Turnpike	Black Oak Ridge Rd	Colfax Road	13,500	15,810	18,550	40-N	72-N	66	120
Hamburg Turnpike	Colfax Road	Jackson Avenue	18,500	21,300	24,980	40-N	72-N	66	120
Hamburg Turnpike	Jackson Avenue	Church Lane	24,600	27,200	31,960	40-N	72-N	66	120
Hamburg Turnpike	Church Lane	Valley Road	21,080	21,330	25,030	40-N	72-N	66	120
Hamburg Turnpike	Valley Road	Ratzer Road	17,700	20,800	24,400	40-N	72-N	66	120
Hamburg Turnpike	Ratzer Road	Oldham Road	12,000	14,060	16,490	27-N	50-N	66	80
Central Avenue	Oldham Road	Haledon Line	13,500	15,840	18,590	27-N	50-N	40	80
Pompton Road	Hamburg Turnpike	Haledon Line	17,000	19,920	22,380	29-N	50-N	50	80
Terhune Drive	Hamburg Turnpike	Lakeside Avenue	12,000	14,080	16,520	34-P	50-N	41	80
Riverview Drive	Totowa Line	Totowa Road	23,000	27,000	31,670	30-N	72-N	50	120
Terhune Drive	Lakeside Avenue	Oakland Line	11,300	13,260	15,560	34-P	50-N	41	80

* Volume Projections based on diversions to Route I-80

Continued on following page

TOWNSHIP OF WAYNE

TRAFFIC VOLUMES AND PAVEMENT AND RIGHT-OF-WAY WIDTHS TABLE I (Continued)

STREET NAME	FROM	TO	AVERAGE WEEKDAY TRAFFIC VOLUMES ACTUAL 1970	ESTIMATED 1975	ESTIMATED 1980	PAVEMENT WIDTH-PARKING EXIST	DES.	R.O.W. WIDTH EXIST.	DES.
French Hill Road	Totowa Road	Valley Road	26,600	31,150	36,560	45-N	72-N	60	120
French Hill Road	Valley Road	Parish Drive	17,000	19,980	23,450	45-N	72-N	60	120
French Hill Road	Parish Drive	Alps Road	8,700	10,220	12,000	32-N	50-N	50	80
Valley Road	French Hill Road	McDonald Drive	19,700	23,100	27,100	30-N	72-N	40	120
Valley Road	McDonald Drive	Preakness Avenue	21,400	25,090	29,440	30-N	72-N	60	120
Valley Road	Preakness Avenue	Ratzer Road	17,000	19,900	23,340	40-N	72-N	60	120
Valley Road	Ratzer Road	Hamburg Tpk	8,800	10,340	12,130	40-N	50-N	80	80
Valley Road	Hamburg Tpk	Berdan Avenue	2,600	4,930 **	5,780 **	60-N	50-P	80	80
Alps Road	Maple Avenue	French Hill Road	4,840	5,680	6,660	30-N	50-N	50	80
Alps Road	French Hill Road	Ratzer Road	10,930	12,830	15,050	30-N	50-N	50	80
Alps Road	Ratzer Road	Hamburg Tpk	12,300	14,430	16,940	30-N	50-N	41	80
Ratzer Road	N.J. 23 Circle	Alps Road	12,200	14,330	16,810	24-N	50-N	41	80
Ratzer Road	Alps Road	Church Lane	8,000	9,560	11,220	21-N	50-P	41	80
Ratzer Road	Church Lane	Hinchman's Avenue	12,200	14,270	16,740	40-N	50-N	45	80
Ratzer Road	Hinchman's Ave.	Hamburg Tpk	8,900	10,470	12,280	26-N	50-P	41	80
Berdan Avenue	Indian Road	Valley Road Ext.	9,340	10,960	12,860	40-N	50-P	60	80
Berdan Avenue	Valley Road Exit	Hamburg Tpk.	7,150	7,560	8,870	40-N	50-P	70	80
Jackson Avenue	Black Oak Ridge Rd	Hamburg Tpk.	7,200	8,410	9,870	28-N	50-P	50	80
Preakness Avenue	Valley Road	Oldham Road	7,150	8,390	9,840	30-N	50-P	40	80
Boonton Rd.(U.S. 202)	Parish Drive	Lincoln Park Line	14,800	17,330	20,340	30-N	50-N	50	66

** Includes affect of Route 287

Continued on following page

TOWNSHIP OF WAYNE

TRAFFIC VOLUMES AND PAVEMENT AND RIGHT-OF-WAY WIDTHS TABLE I (Continued)

STREET NAME	FROM	TO	AVERAGE WEEKDAY TRAFFIC VOLUMES ACTUAL 1970	ESTIMATED 1975	ESTIMATED 1980	PAVEMENT WIDTH-PARKING EXIST.	DES.	R.O.W. WIDTH EXIST.	DES.
Fairfield Road	N.J. Route 23	Two Bridges	7,200	8,430	9,900	21-N	50-P	40	60
Totowa Road	Riverview Drive	Totowa Line	7,700	9,070	10,640	22-N	50-P	50	66
Newark-Pompton Tpk.	N.J. Route 23	Pequannock Line	7,200	8,400	9,860	30-N	50-P	66	66
Pompton Plains Cr.Rd.	Black Oak Ridge Rd.	Pequannock Line	7,000	8,230	9,650	22-N	50-P	40	66
Parish Drive	Boonton Road	Maple Avenue	9,800	11,460	13,450	36-N	50-N	50	66
Parish Drive	Maple Avenue	French Hill Road	8,800	10,330	12,120	24-N	50-N	50	66
Maple Avenue	Parish Drive	Alps Road	3,600	4,180	4,900	30-P	50-P	50	66
Alps Road	N.J. Route 23	Maple Avenue	2,200	2,350	2,750	30-N	50-P	50	66
Fairfield Road	Two Bridges	U.S. Route 46	2,800	3,250	3,800	21-N	50-P	40	66
Black Oak Ridge Road	Newark-Pompton Tpk	Ratzer Road Circle	5,200	6,100	7,150	25-N	50-P	50	66
Packanack Lake Road	N.J. Route 23	West Lake Drive	4,700	5,470	6,420	30-P	50-P	50	66
Osborne Terrace	West Lake Drive	Alps Road	4,700	5,470	6,420	30-P	50-P	50	66
Church Lane	Hamburg Tpk	Ratzer Road	4,700	5,550	6,510	24-N	50-P	50	66
Oldham Road	Preakness Avenue	Hamburg Tpk.	2,900	3,400	4,000	21-N	50-P	41	66
Colfax Road	Terhune Drive	Hamburg Tpk.	3,300	3,830	4,500	24-N	50-P	50	66
Indian Road	Terhune Drive	Berdan Ave.	2,000	3,610	4,240	28-P	50-P	50	66
Reinhardt Road	Oldham Road	Haledon Line	1,200	1,440	1,680	30-P	40-P	40	50
Dawes Highway	Hamburg Tpk.	Pompton Lakes Line	3,300	3,830	4,500	29-P	50-P	40	66

EXIST. - EXISTING
DES. - DESIRABLE
N - NO PARKING PERMITTED
P - PARKING PERMITTED
R.O.W. - RIGHT-OF-WAY

WAYNE TOWNSHIP
PASSAIC COUNTY, N.J.

0 4000 8000

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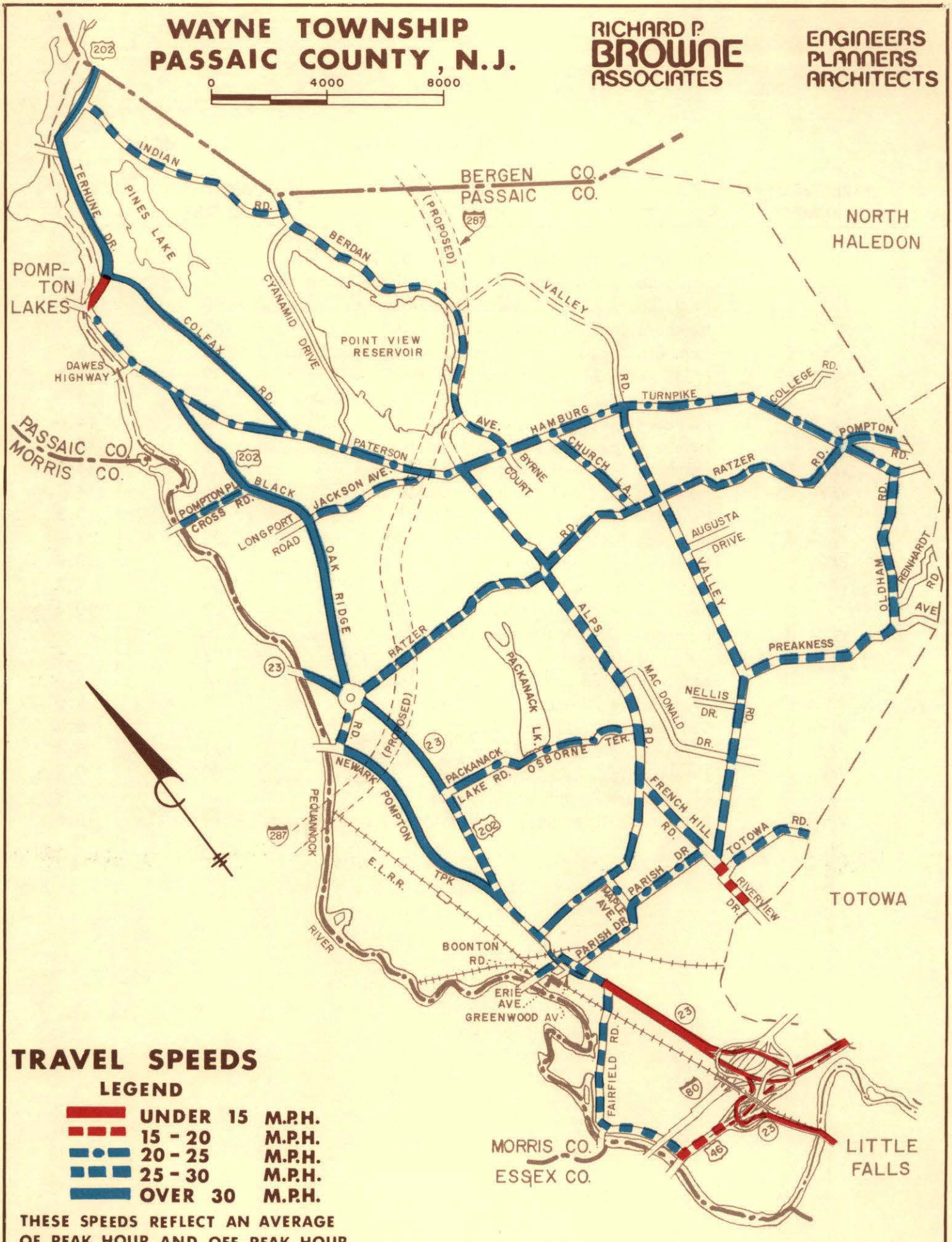

TRAVEL SPEEDS

LEGEND

UNDER 15	M.P.H.
15 - 20	M.P.H.
20 - 25	M.P.H.
25 - 30	M.P.H.
OVER 30	M.P.H.

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

PLATE V

ACCIDENT LOCATIONS

TABLE II

IMPROVEMENT NUMBER	LOCATION	ACCIDENT NUMBER *	ACCIDENT RATE **
	Ratzer Rd. and Black Oak Ridge Rd. Circle	225	44.5
	N.J. Route 23, Boonton Rd., Parish Dr. Area	155	20.6
	N.J. Route 23 and Newark Pompton Tpk.	90	20.5
WY- 7	Hamburg Tpk. and Alps Road	67	18.7
WY- 2	Hamburg Tpk. and Pompton Rd.-Ratzer Road	50	16.0
WY- 12	N.J. Route 23 and Packanack Lake Road	49	12.6
WY- 5	N.J. Route 23 and Fairfield Rd.-Van Dyne Ave.	45	20.6
WY- 1	Hamburg Tpk. and Terhune Drive	44	14.0
	Hamburg Tpk. and Jackson Avenue	43	15.6
WY- 16	Hamburg Tpk. and Dawes Highway	39	14.9
WY- 15	Hamburg Tpk. and Black Oak Ridge Road	36	14.1
	Valley Road and MacDonald Drive	33	10.3
WY- 4	Hamburg Tpk. and Valley Road	32	12.0
WY- 8	Hamburg Tpk. and Church Lane	30	10.7
WY- 9	Hamburg Tpk. and Berdan Avenue	30	9.7
	N.J. Route 23 and DeVisser Lane	28	10.8
WY- 3	Riverview Dr., Valley Rd., Totowa Rd., French Hill Road	28	7.6
	N.J. Route 23 and Alps Road	24	5.6
	N.J. Route 23 and Burgess Place	23	5.0
WY- 11	Valley Road and Ratzer Road	22	8.7
WY- 17	Ratzer Road and Alps Road	21	8.4
WY- 24	Hamburg Tpk. and Colfax Road	20	10.3
	N.J. Route 23 and Lewis Street	20	4.3
WY- 18	Black Oak Ridge Rd., Jackson Ave., Longport Rd.	19	10.6

* Per three years (1967-1969)

** Per ten million vehicles

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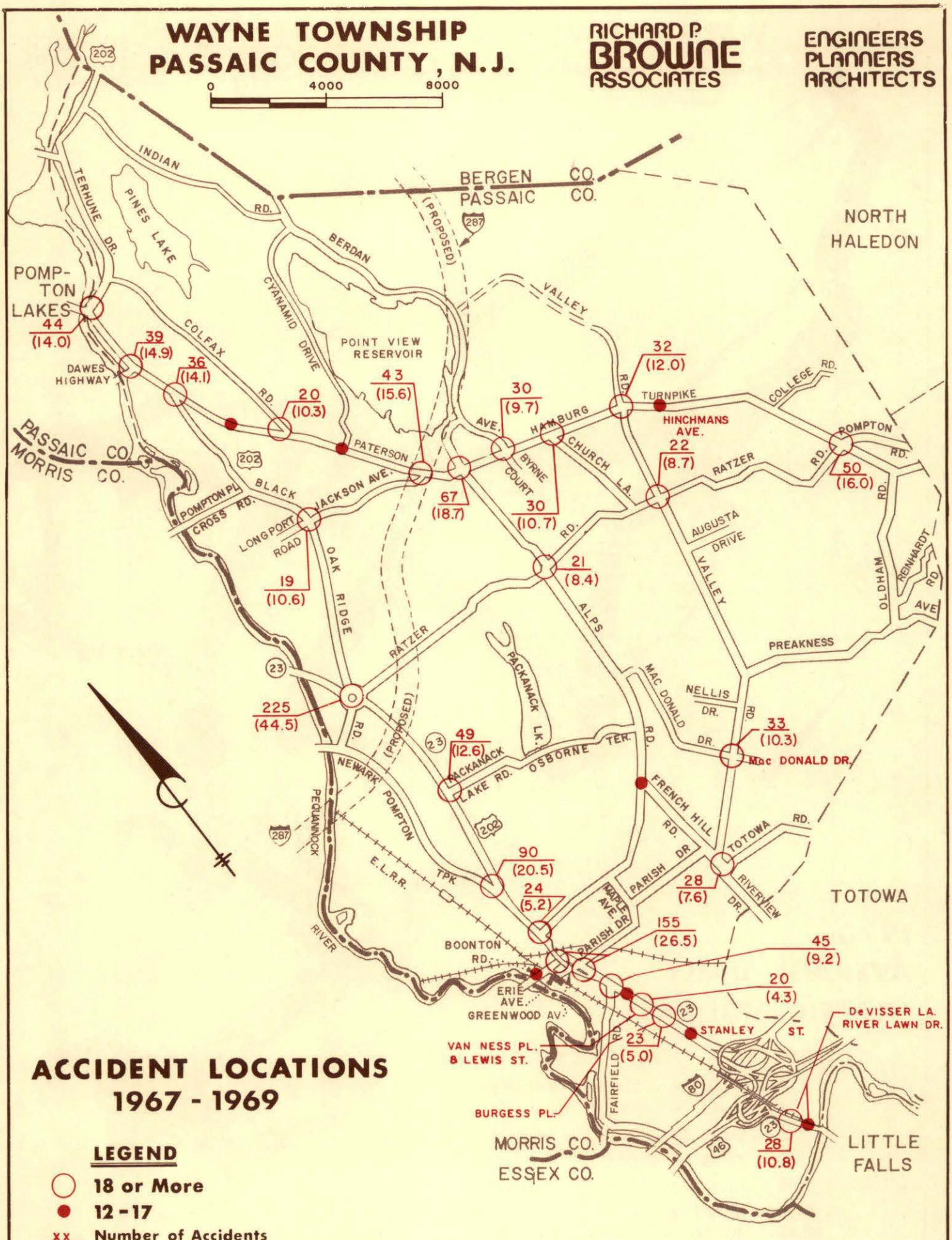

ACCIDENT LOCATIONS
1967 - 1969

LEGEND

- ○ 18 or More
- ● 12 - 17
- xx Number of Accidents
- (xxx) Accident Rate per 10 Million Vehicles

PLATE VI

WAYNE TOWNSHIP
PASSAIC COUNTY, N.J.

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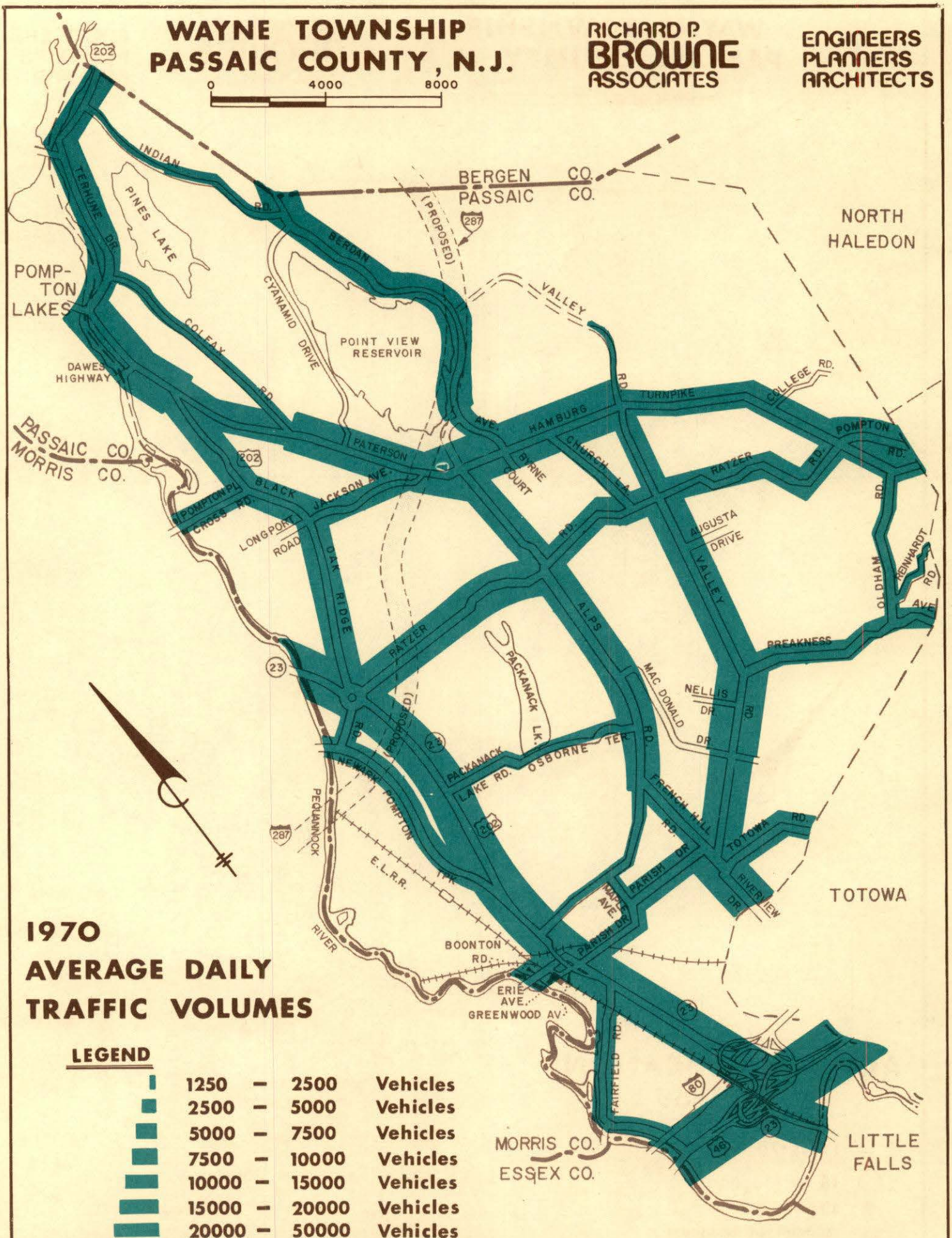

1970 AVERAGE DAILY TRAFFIC VOLUMES

LEGEND

1250	–	2500	Vehicles
2500	–	5000	Vehicles
5000	–	7500	Vehicles
7500	–	10000	Vehicles
10000	–	15000	Vehicles
15000	–	20000	Vehicles
20000	–	50000	Vehicles
OVER		50000	Vehicles

PLATE VII

WAYNE TOWNSHIP
PASSAIC COUNTY, N.J.

0 4000 8000

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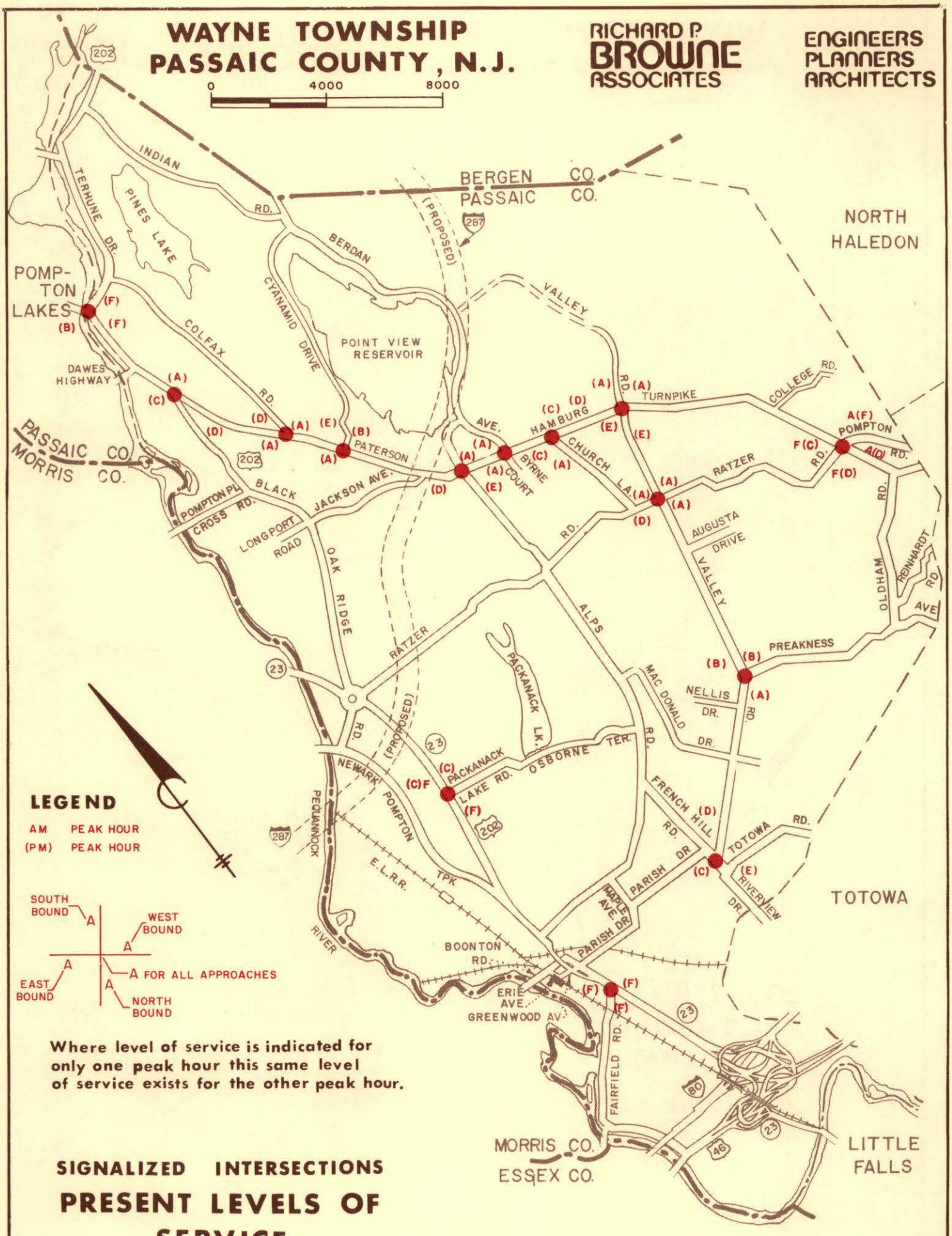


LEGEND

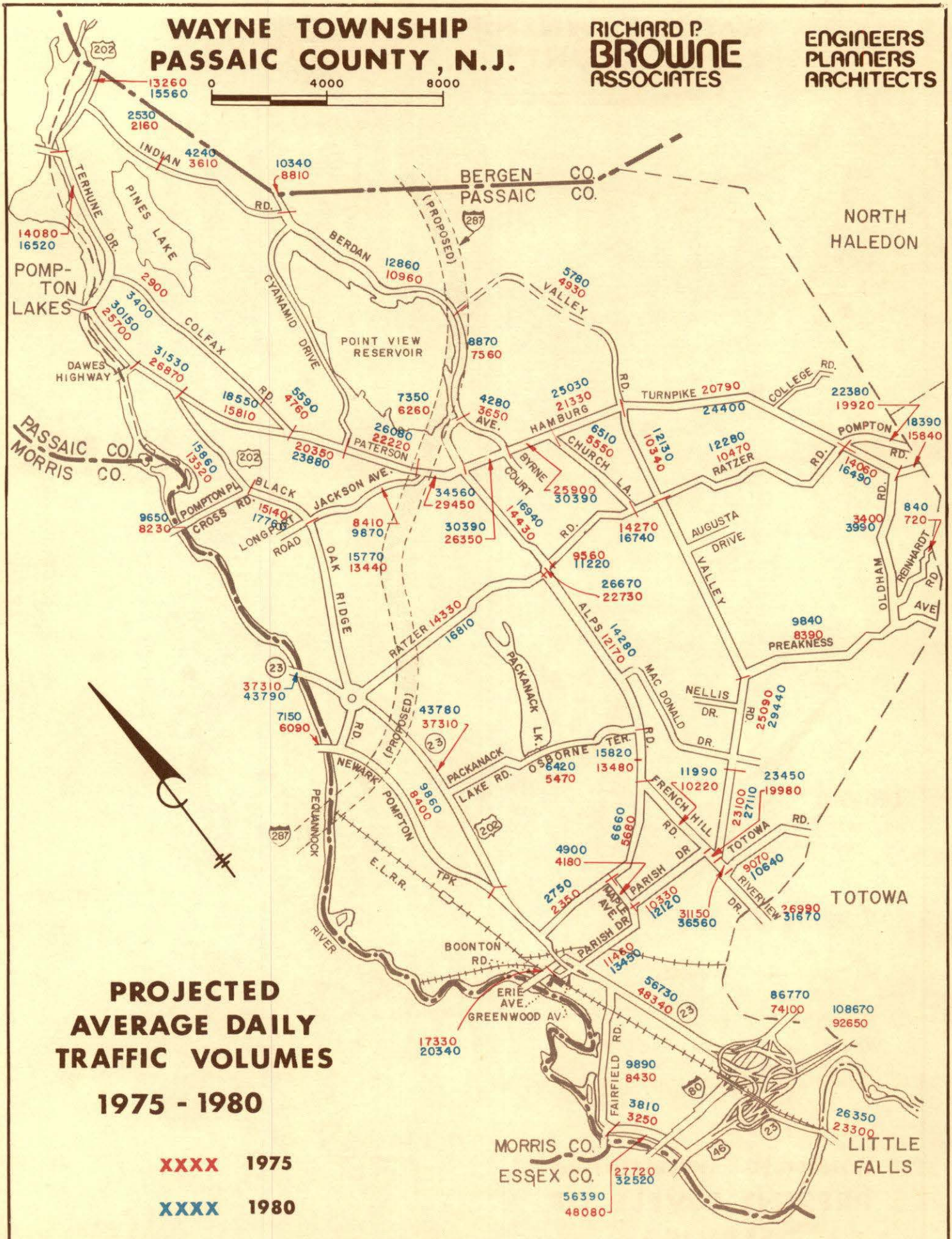
AM PEAK HOUR
(PM) PEAK HOUR

SOUTH BOUND A
WEST BOUND A
EAST BOUND A
NORTH BOUND A
A FOR ALL APPROACHES

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

SIGNALIZED INTERSECTIONS
PRESENT LEVELS OF SERVICE

PLATE VIII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RICHARD P. BROWNE ASSOCIATES
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ARCHITECTS
0
4000
8000
PROJECTED
AVERAGE DAILY
TRAFFIC VOLUMES
1975 - 1980
XXXX 1975
XXXX 1980
BERGEN CO.
PASSAIC CO.
PASSAIC CO.
MORRIS CO.
MORRIS CO.
ESSEX CO.
NORTH HALEDON
POMPTON LAKES
TOTOWA
LITTLE FALLS
PINES LAKE
POINT VIEW RESERVOIR
INDIAN RD.
BERDAN
(PROPOSED)
TERHUNE DR.
CYANAMID DRIVE
COLFAX
DAWES HIGHWAY
PATERSON
HAMBURG
VALLEY
TURNPIKE
COLLEGE RD.
POMPTON
RATZER
CHURCH
BYRNE
COURT
LA.
RD.
AUGUSTA
DRIVE
VALLEY
OLDHAM
REINHARDT
RD
AVE
PREAKNESS
JACKSON AVE.
BLACK
CROSS RD.
POMPTON PL.
LONG HILL
ROAD
OAK RIDGE
RATZER
ALPS
MAC DONALD
NELLIS
DR.
PACKANACK
LK.
PACKANACK
LAKE RD.
OSBORNE TER.
NEWARK POMPTON
TPK
E.L.R.R.
PEQUANNOCK
RIVER
FRENCH HILL
TOTOWA
PARISH DR
MAPLE AVE
RIVERVIEW DR.
BOONTON RD.
ERIE AVE.
GREENWOOD AV.
FAIRFIELD RD.
13260
15560
2530
2160
4240
3610
10340
8810
14080
16520
2900
3400
30150
25700
31530
26870
18550
15810
5590
4760
7350
6260
4280
3650
8870
7560
5780
4930
25030
21330
26080
22220
20350
23880
6510
5550
12130
10340
12280
10470
22380
19920
24400
18390
15840
14060
16490
840
720
3400
3990
15860
13520
34560
29450
30390
26350
16940
14430
25900
30390
14270
16740
9650
8230
15140
17760
8410
9870
15770
13440
9560
11220
26670
22730
14330
16810
14280
12170
9840
8390
37310
43790
7150
6090
43780
37310
25090
29440
15820
13480
6420
5470
11990
10220
23450
19980
23100
27110
9860
8400
6660
5680
4900
4180
2750
2350
9070
10640
10330
12120
31150
36560
26990
31670
11450
13450
56730
48340
86770
74100
108670
92650
17330
20340
9890
8430
3810
3250
26350
23300
27720
32520
56390
48080

PLATE IX

WAYNE TOWNSHIP
PASSAIC COUNTY, N.J.

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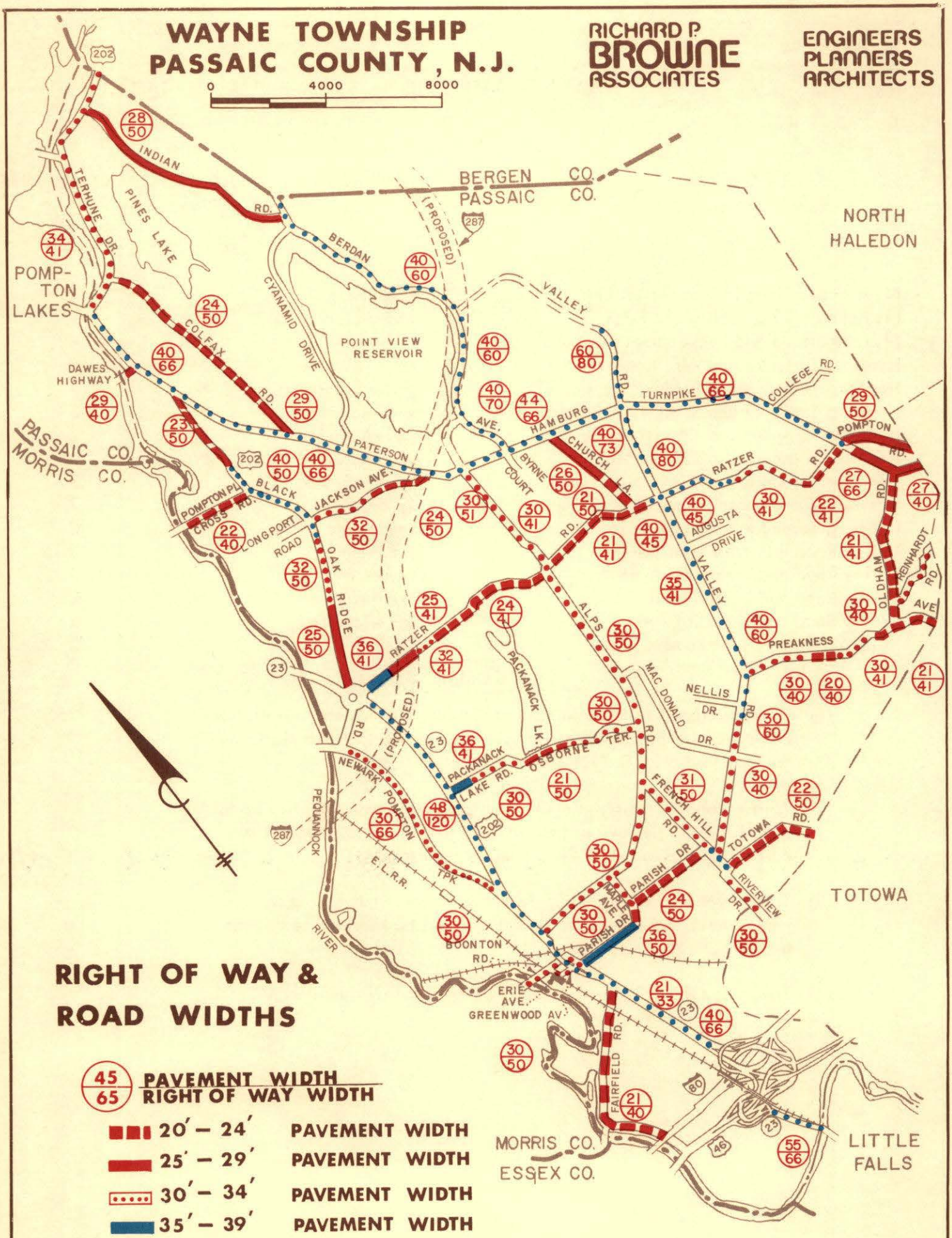
PLANNERS
ARCHITECTS



RIGHT OF WAY & ROAD WIDTHS

45/65 PAVEMENT WIDTH / RIGHT OF WAY WIDTH

- 20′ – 24′ PAVEMENT WIDTH
- 25′ – 29′ PAVEMENT WIDTH
- 30′ – 34′ PAVEMENT WIDTH
- 35′ – 39′ PAVEMENT WIDTH
- 40′ & Over PAVEMENT WIDTH

EXISTING TRAFFIC SIGNALS

TABLE III

LOCATION	OPERATION	N.J.D.O.T. APPROVED	COMMENTS
N.J. Route 23 and Willowbrook Entrance	Fixed-Time	Yes	4
N.J. Route 23 and Fairfield Road	Semi-Actuated	Yes	-
N.J. Route 23 and Packanack Lake Road	Semi-Actuated	Yes	-
Hamburg Turnpike and Alps Road	Semi-Actuated	No	2
Hamburg Turnpike and Berdan Avenue	Semi-Actuated	No	2
Hamburg Turnpike and Black Oak Ridge Road	Semi-Actuated	No	2
Hamburg Turnpike and Church Lane	Semi-Actuated	No	2
Hamburg Turnpike and Colfax Road	Semi-Actuated	No	1
Hamburg Turnpike and Cyanamid Drive	Semi-Actuated	No	3
Hamburg Turnpike and Pompton Road-Ratzer Road	Fixed-Time	No	2
Hamburg Turnpike and Terhune Drive	Fixed-Time	No	2
Valley Road and French Hill Road	Fixed-Time	No	2
Valley Road and Preakness Avenue	Fixed-Time	No	2
Valley Road and Ratzer Road	Fixed-Time	No	2
Valley Road and Hamburg Turnpike	Semi-Actuated	No	2
Alps Road and Ratzer Road	Flasher	Yes	2

COMMENTS

(1) Traffic volumes satisfy minimum vehicular warrants and installation conforms with accepted standards. Recommend that this signal be approved by N.J.D.O.T.

(2) Traffic volumes satisfy minimum vehicular warrants. Traffic signal installation to be revised to conform with accepted standards as part of recommended TOPICS improvement project.

(3) Traffic volumes satisfy minimum vehicular warrants during the four peak hours. Recommended that this signal be retained as a semi-traffic actuated installation.

(4) Temporary traffic signals to continue on fixed time operation until Route 23 is improved.

WAYNE TOWNSHIP
PASSAIC COUNTY, N.J.

0 4000 8000

RICHARD P. BROWNE ASSOCIATES

ENGINEERS
PLANNERS
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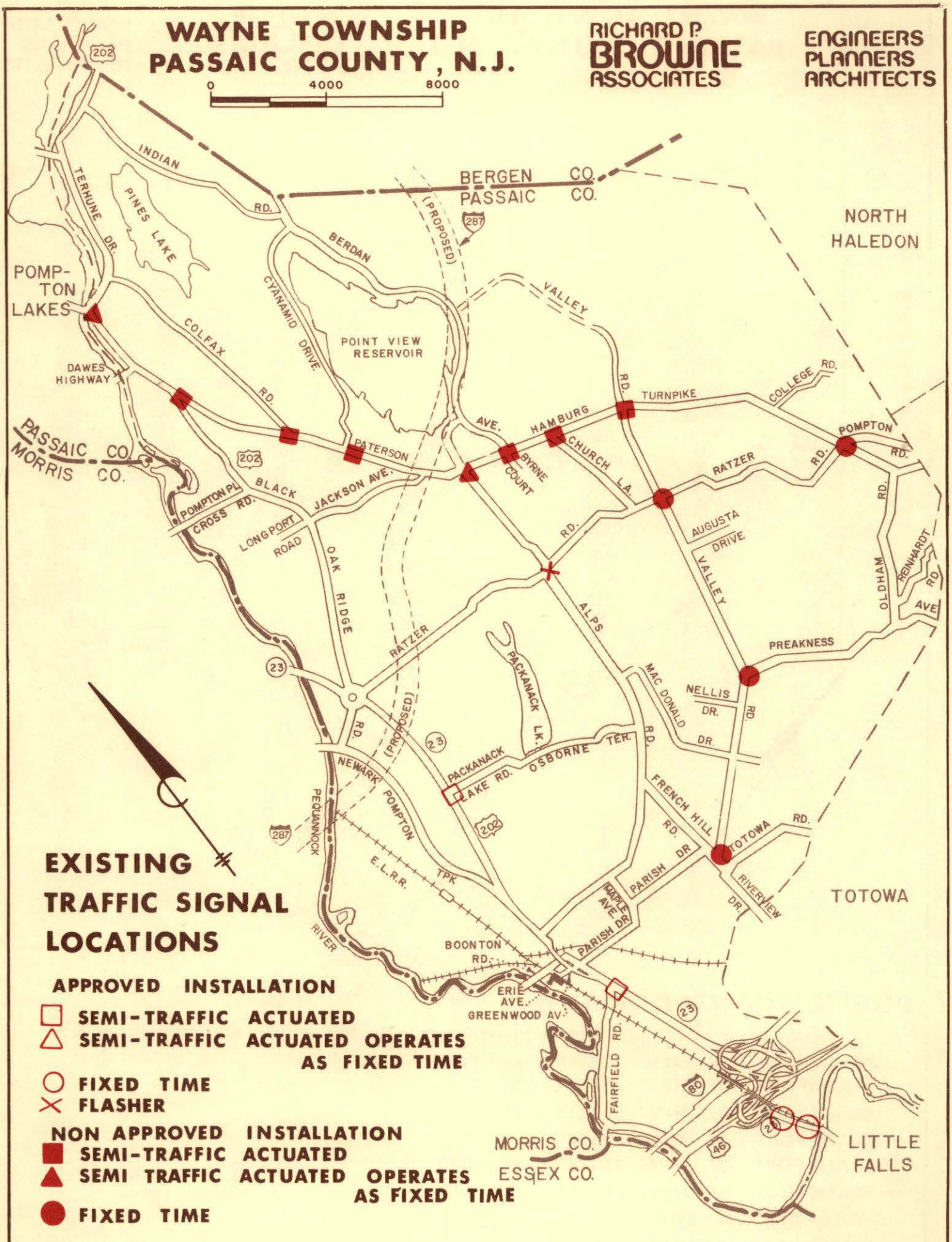


EXISTING TRAFFIC SIGNAL LOCATIONS

APPROVED INSTALLATION

- □ SEMI-TRAFFIC ACTUATED
- △ SEMI-TRAFFIC ACTUATED OPERATES AS FIXED TIME
- ○ FIXED TIME
- × FLASHER

NON APPROVED INSTALLATION

- ■ SEMI-TRAFFIC ACTUATED
- ▲ SEMI TRAFFIC ACTUATED OPERATES AS FIXED TIME
- ● FIXED TIME

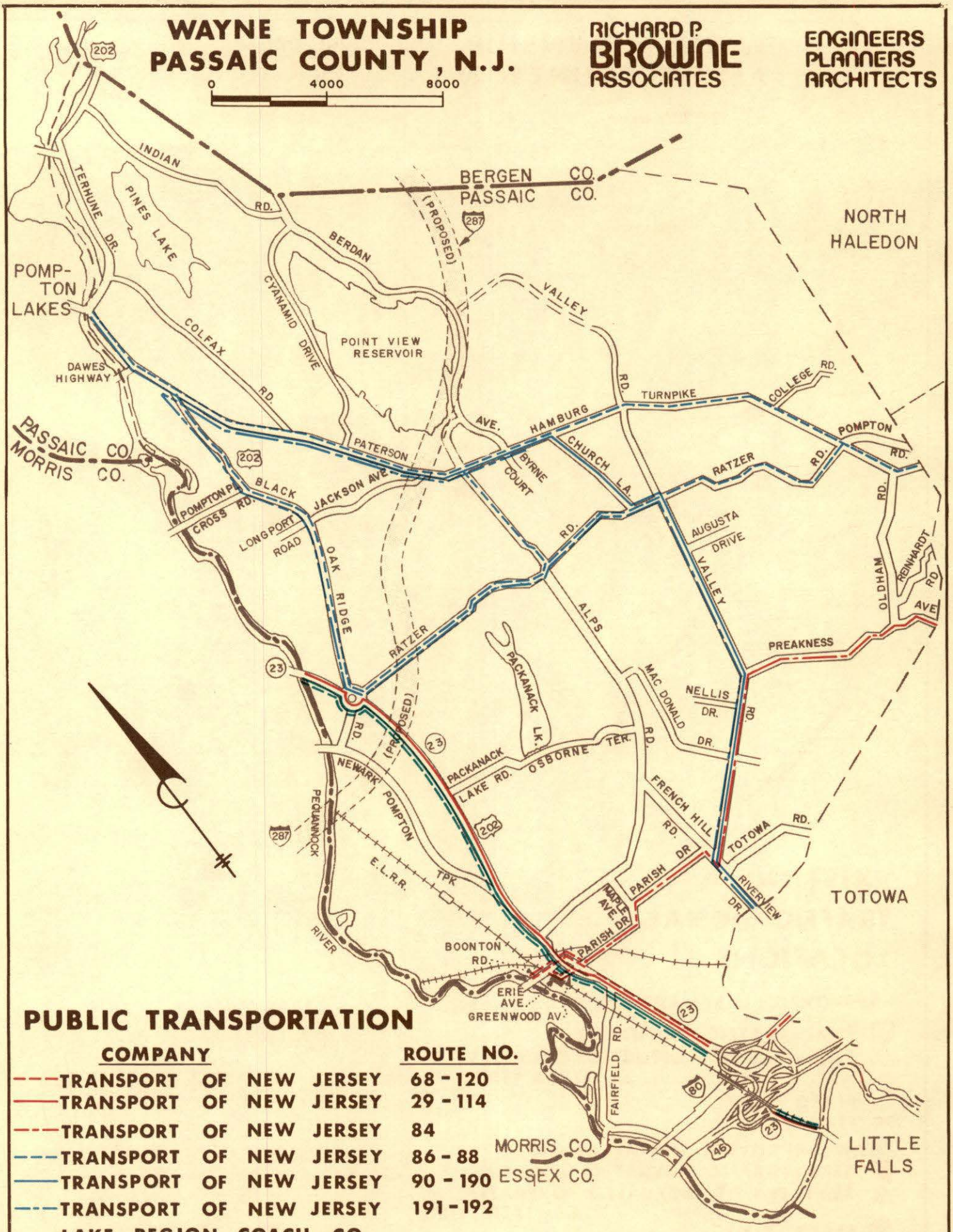
PLATE XI

WAYNE TOWNSHIP
PASSAIC COUNTY, N.J.

0 4000 8000

RICHARD P. BROWNE ASSOCIATES

ENGINEERS
PLANNERS
ARCHITECTS



PUBLIC TRANSPORTATION

COMPANY	ROUTE NO.
TRANSPORT OF NEW JERSEY	68 - 120
TRANSPORT OF NEW JERSEY	29 - 114
TRANSPORT OF NEW JERSEY	84
TRANSPORT OF NEW JERSEY	86 - 88
TRANSPORT OF NEW JERSEY	90 - 190
TRANSPORT OF NEW JERSEY	191 - 192
LAKE REGION COACH CO.	
NORTHEAST COACH LINES	

PLATE XII

VI - PROBLEM LOCATIONS

The Township of Wayne is principally a residential community, with commercial and industrial concentrations scattered along the major highways which traverse the township. These arterial highways carry substantial volumes of through traffic with origins and destinations outside the township, as well as numerous residents who patronize the facilities located along these routes.

One major commercial concentration occupies that portion of the township south of Interstate Route 80. This area includes the Willowbrook Shopping Mall as well as the businesses lining U.S. Route 46. The Willowbrook entrance from N.J. Route 23 created severe congestion and very high accident rates prior to the pavement widening and signalization installed in November 1970. Although unnecessary delays are still encountered at times along this section of N.J. Route 23 (from U.S. Route 46 to Main Street), the turning movements to and from Willowbrook are positively controlled, resulting in less driver frustration and reduced accidents.

The U.S. Route 46, N.J. Route 23, Interstate Route 80 interchange complex is a major source of congestion and accounts for a large number of accidents within the township. The opening of Interstate 80 east of Route 23 in the near future will relieve traffic loads on some of the ramps which were never designed to carry heavy volumes of through traffic.

Continuing north along N.J. Route 23 one encounters an area of "strip" development where severe congestion and low travel speeds (under 20 mph) are common during the peak hours. This section, which extends from the Interstate 80 interchange as far as Boonton Road (U.S. Route 202) has a high accident rate (4.2 per million vehicle miles) due to the numerous businesses fronting on Route 23 and the interferences caused by vehicles entering and leaving the main traffic stream.

This four-lane, undivided, uncontrolled access highway is totally inadequate for present traffic volumes in excess of 40,000 vehicles per day. The major intersecting street, Fairfield Road, accounts for a large percentage of the delays and a sizable number of accidents.

Further north on Route 23, between Boonton Road and Ratzer Road, traffic volumes drop to about 32,000 vehicles per day on a four-lane, divided highway with fewer ingress and egress points and no left turns permitted. Accident rates (2.6 per million vehicle miles) are substantially lower than the average south of Boonton Road, and travel speeds increase to acceptable levels (30-35 mph) as delays are reduced both in frequency and duration. Packanack Lake and Glen Eagle shopping centers are located just north of Packanack Lake Road on opposite sides of Route 23, but do not create serious problems affecting capacity or safety on Route 23. However, some delay occurs both on Route 23 and on the side road during morning peak hour periods at this intersection.

The traffic circle joining Route 23 to Ratzer Road and Black Oak Ridge Road is a major source of congestion and collisions. This small circle is far outdated, and cannot adequately cope with present traffic volumes. The New Jersey Department of Transportation has already undertaken the redesign at this interchange, and construction is expected in the near future.

Black Oak Ridge Road is a two-lane highway whose traffic volumes are rapidly approaching its capacity. It traverses a primarily residential area and connects N.J. Route 23 with the Paterson-Hamburg Turnpike. Travel speeds of about 30-35 miles per hour are satisfactory, but the accident rate (3.3 per million vehicle miles) and the volume/capacity ratio (0.8) are barely tolerable. If traffic volumes increase substantially above the present 12,000 vehicles per day, accidents, delays and congestion will greatly increase. The Jackson Avenue intersection, with its high left turn movements, is a hazardous location with a high accident rate.

Another highway which has dense "strip" development along much of its length is the Paterson-Hamburg Turnpike. From Terhune Drive to Black Oak Ridge Road, average daily traffic volumes exceed 22,000 vehicles on this four-lane, undivided highway. Frontage is about 50 percent occupied, with the main commercial concentrations near the intersections. Travel speeds average about 25 mph and the accident rate is 3.9 per million vehicle miles. These figures indicate that the level of service is already unsatisfactory, and further increases in traffic volumes and roadside development will erode the quality of travel.

From Black Oak Ridge Road to Jackson Avenue, much of the land abutting Hamburg Turnpike is still undeveloped, traffic volumes are lower (13,500 to 18,500), and the accident rate drops to about 2.7 per million vehicle miles. Travel speeds increase significantly to the 30-35 mph range.

Along the Hamburg Turnpike from Jackson Avenue to Church Lane, land usage is dense. A partial interchange with Interstate Route 287 is contemplated along this section of the Hamburg Turnpike near Jackson Avenue. Volumes once again increase to 25,000 vehicles per day and the accident rate increases to 4.2 per million vehicle miles, while travel speeds slow to about 25 mph. The traffic signal at Alps Road frequently interrupts Paterson-Hamburg Turnpike traffic, as cross traffic is heavy and requires a substantial portion of the total cycle time. The Preakness, Berdan, and T-Bowl Shopping Centers, located along this section, generate large vehicular turning movements which reduce capacity and decrease safety.

From Church Lane to Hinchman's Avenue, land occupancy is still fairly dense, with a large apartment complex near Valley Road and the Wayne Mall Shopping Center between Valley Road and Hinchman's Avenue. The fixed time signal at Valley Road is another cause of frequent delay to Paterson-Hamburg Turnpike traffic. With traffic volumes of about 18,000 to 21,000 vehicles per day, the accident rate on this short link is an unsatisfactory 4.7 per million vehicle miles.

Beyond Hinchman's Avenue, land usage along the Hamburg Turnpike is more sparse, with industrial buildings set back from the highway along spur roads. This development is of the "industrial park" type, far superior to the "strip" development found in some other areas of the township. Here volumes fall below 18,000 vehicles per day, average travel speeds increase to over 35 mph and the accident rate decreases to about 2.1 per million vehicle miles. A small commercial complex exists in the vicinity of the Ratzer Road-Pompton Road intersection with Paterson-Hamburg Turnpike. The signal at this location is the only significant cause of delay on Hamburg Turnpike from Hinchman's Lane to the Haledon Line.

Valley Road-Riverview Drive is probably the second most important north-south artery in the Township of Wayne. The Valley Road extension, which is presently under construction from Paterson-Hamburg Turnpike to Berdan Avenue, will be four-lanes wide when completed and should easily carry the traffic volumes projected for the next decade. From Hamburg Turnpike to Ratzer Road, the present four lane width provides good service for existing volumes of about 9,000 vehicle per day.

For approximately three quarters of a mile south of Ratzer Road, Valley Road is only three lanes wide, but daily traffic volumes increase to about 17,000 vehicles per day. The pavement width again widens to four lanes until slightly beyond Preakness Avenue, where it once more narrows to three ten-foot lanes. The section from MacDonald Drive to French Hill Road carries 21,400 vehicles per day at speeds averaging 25-30 miles per hour. The accident rate is an acceptable 2.1 per million vehicle miles. The three-lane segments of Valley Road between Ratzer Road and French Hill Road are now operating on the border line between level of service "C" and "D". Future traffic volumes will drop the quality of travel below acceptable standards.

Riverview Drive, south of Totowa Road to U.S. Route 46, is a totally inadequate two-lane highway. With traffic volumes exceeding 23,000 vehicles per day, average travel speeds are often under 20 miles per hour. Passaic County plans to widen this road to four lanes, and construction is anticipated in the near future.

A final north-south route of major significance is French Hill Road-Alps Road-Berdan Avenue. French Hill Road from Parish Drive to Alps Road was reconstructed during 1970 and now has a 32 foot wide pavement. With traffic volumes of about 9,000 vehicles per day, this should be adequate for short term needs. Alps Road north of its junction with French Hill Road as far as Ratzer Road, carries volumes of about 10,000 to 12,000 vehicles per day. Average travel speeds are about 30 miles per hour through this residential neighborhood, with an accident rate of 2.8 per million vehicle miles.

From Ratzer Road to the Paterson-Hamburg Turnpike, Alps Road traffic increases slightly to 12,500 vehicles daily and the accident rate rises to about 3.5 per million vehicle miles. Further traffic loadings on this segment of Alps Road will result in unsatisfactory levels of service. The completion of the Alps Road extension (presently under construction) to Berdan Avenue is likely to produce a moderate increase in the volume of traffic using this corridor.

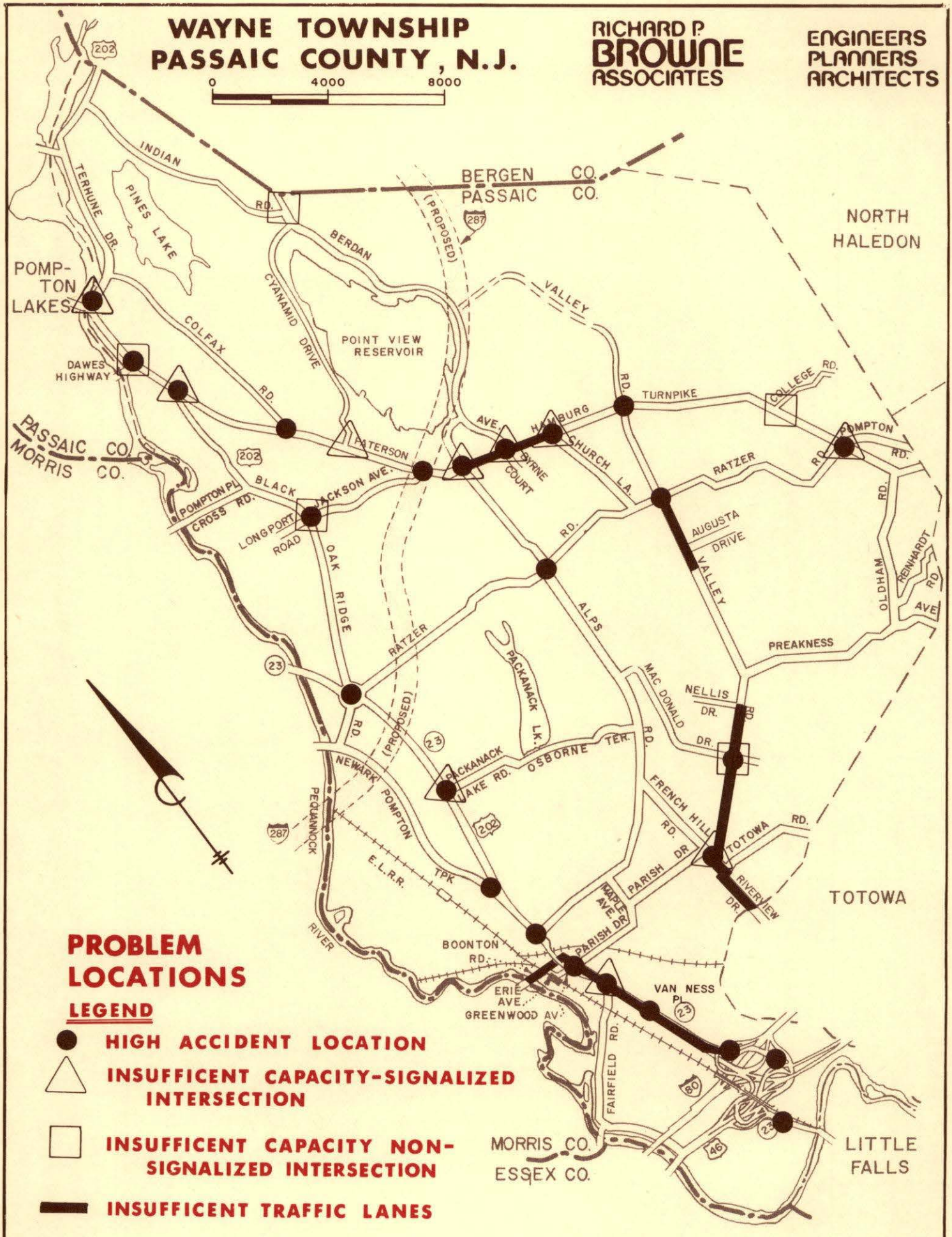
Berdan Avenue is a recently widened four-lane highway with daily volumes of about 9,000 vehicles. Near Valley Road a future interchange is contemplated with Interstate Route 287. The only significant delays encountered on Berdan Avenue are at Cyanamid Drive, when the plant is closing for the day, and at the traffic signal at Paterson-Hamburg Turnpike. Indian Road, which intersects Berdan Avenue on a curve near the crest of a hill is a dangerous intersection because of restricted sight distances combined with the relatively high speeds of Berdan Avenue traffic.

Terhune Drive, with traffic volumes of about 12,000 vehicles per day and an unusually high truck percentage (15 percent), is presently providing satisfactory service. With few intersecting streets, it has more of the characteristics of a rural rather than an urban road. However, once again, a relatively small increase in traffic volumes could begin to cause operational difficulties.

Ratzer Road, which traverses Wayne from west to east through a residential area, is a narrow, winding road through hilly terrain. Traffic volumes range from 8,000 to 12,000 vehicles per day, creating overloaded conditions at times. Plans are being developed to widen this road from Oakwood Drive to Valley Road. Reconstruction and widening of the section from Valley Road to Hamburg Turnpike is desirable in the near future. The only intersections on Ratzer Road creating problems are those with the major north-south roads, such as Alps Road and Valley Road.

Another heavily travelled east-west road is Boonton Road. Boonton Road, from Erie Avenue to Parish Drive, carries nearly 15,000 vehicles per day. This 30 foot wide street is operating at level of service "D" at this time. This road serves the dual function of carrying local traffic across N.J. Route 23, as well as serving as the U.S. Route 202 - N.J. Route 23 interchange ramps. Also, the Mountain View Railroad station is located just south of Boonton Road, adding to the congestion of the narrow streets west of Route 23 during the critical peak hours.

Parish Drive is the only east-west connector for the lower third of the township. This street is only 24 feet wide for most of its length and carries 9,000 to 10,000 vehicles per day. Travel speeds average in the 20-25 miles per hour range because of the railroad overpass, sharp turns at Day Avenue and Maple Avenue, and the residential character of the neighborhood to the east of Maple Avenue. This street experiences an unsatisfactory accident rate because of steep grades and poor alignment. PLATE XIII shows problem areas in the township.


WAYNE TOWNSHIP
PASSAIC COUNTY, N.J.
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RICHARD P. BROWNE ASSOCIATES
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PLANNERS
ARCHITECTS
PROBLEM LOCATIONS
LEGEND
HIGH ACCIDENT LOCATION
INSUFFICENT CAPACITY-SIGNALIZED INTERSECTION
INSUFFICENT CAPACITY NON-SIGNALIZED INTERSECTION
INSUFFICENT TRAFFIC LANES
POMPTON LAKES
NORTH HALEDON
TOTOWA
LITTLE FALLS
BERGEN CO.
PASSAIC CO.
MORRIS CO.
ESSEX CO.
INDIAN RD.
TERHUNE DR.
PINES LAKE
BERDAN
(PROPOSED)
VALLEY
CYANAMID DRIVE
POINT VIEW RESERVOIR
COLFAX RD.
DAWES HIGHWAY
PATERSON
HAMBURG TURNPIKE
COLLEGE RD.
COMPTON RD.
BYRNE COURT
CHURCH LA.
RATZER
AUGUSTA DRIVE
VALLEY
OLDHAM
REINHARDT RD.
AVE
PREAKNESS
POMPTON PL.
CROSS RD.
BLACK
JACKSON AVE.
LONGPORT ROAD
OAK RIDGE
ALPS
PACKANACK LK.
MAC DONALD
NELLIS DR.
NEWARK POMPTON TPK
PEQUANNOCK
E.L.R.R.
RIVER
PACKANACK LAKE RD.
OSBORNE TER.
FRENCH HILL RD.
PARISH DR.
MAPLE AVE.
RIVERVIEW DR.
TOTOWA RD.
BOONTON RD.
ERIE AVE.
GREENWOOD AV.
VAN NESS PL
FAIRFIELD RD.

PLATE XIII

VII - 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, Federal-Aid Secondary 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.

The proposed extensions of Alps Road and Valley Road from Hamburg Turnpike to Berdan Avenue have been included in the proposed Type II System for Wayne Township to provide route continuity. With the exception of these two proposed extensions, the streets included in the proposed Type II grid, as shown in PLATE XIV and listed in TABLE IV, are so classified in the "Passaic Highway Improvement Program 1970-1975", a six-year road improvement program covering the years 1970 through 1975. All roads proposed for the Type II System are currently state highways or county roads on the New Jersey State-Aid System. These roadways form a logical, integrated network of the arterial roads within the Township of Wayne and connect it to the neighboring communities.

TOWNSHIP OF WAYNE

PROPOSED FEDERAL-AID SYSTEMS — TABLE IV

ROUTE NUMBER	STREET NAME	FROM	TO	LENGTH MILES	FEDERAL-AID SYSTEM PRESENT	FEDERAL-AID SYSTEM PROPOSED
		INTERSTATE				
Route 80	Bergen-Passaic Exp.	Totowa Line	Fairfield Line	1.13	Interstate	Interstate
Route 287		Morris County Line	Bergen County Line	4.20 *	Interstate	Interstate
		FEDERAL-AID PRIMARY TYPE I				
N.J. 23 (FA 3)	N.J. 23	Route U.S. 46	Pequennock Line	4.38	Primary	Primary
U.S. 46 (FA 1)	U.S. 46	Fairfield Line	Totowa Line	1.36	Primary	Primary
		TOTAL FEDERAL-AID PRIMARY TYPE I		5.74		
		FEDERAL-AID SECONDARY				
Co. 123 (FAS 260)	Pompton Plains Cr Rd	County Line	Black Oak Ridge Road	0.53	Secondary	Secondary
U.S. 202 (FAS 215)	Black Oak Ridge Rd.	N.J. Route 23	Pat.-Ham. Tpk	2.60	Secondary	Secondary
U.S. 202 (FAS 215)	Terhune Drive	Pat.-Ham. Tpk	County Line	1.80	Secondary	Secondary
		TOTAL FEDERAL-AID SECONDARY		4.93		

* Estimated based on proposed location

TOWNSHIP OF WAYNE

PROPOSED FEDERAL-AID SYSTEMS — TABLE IV (Continued)

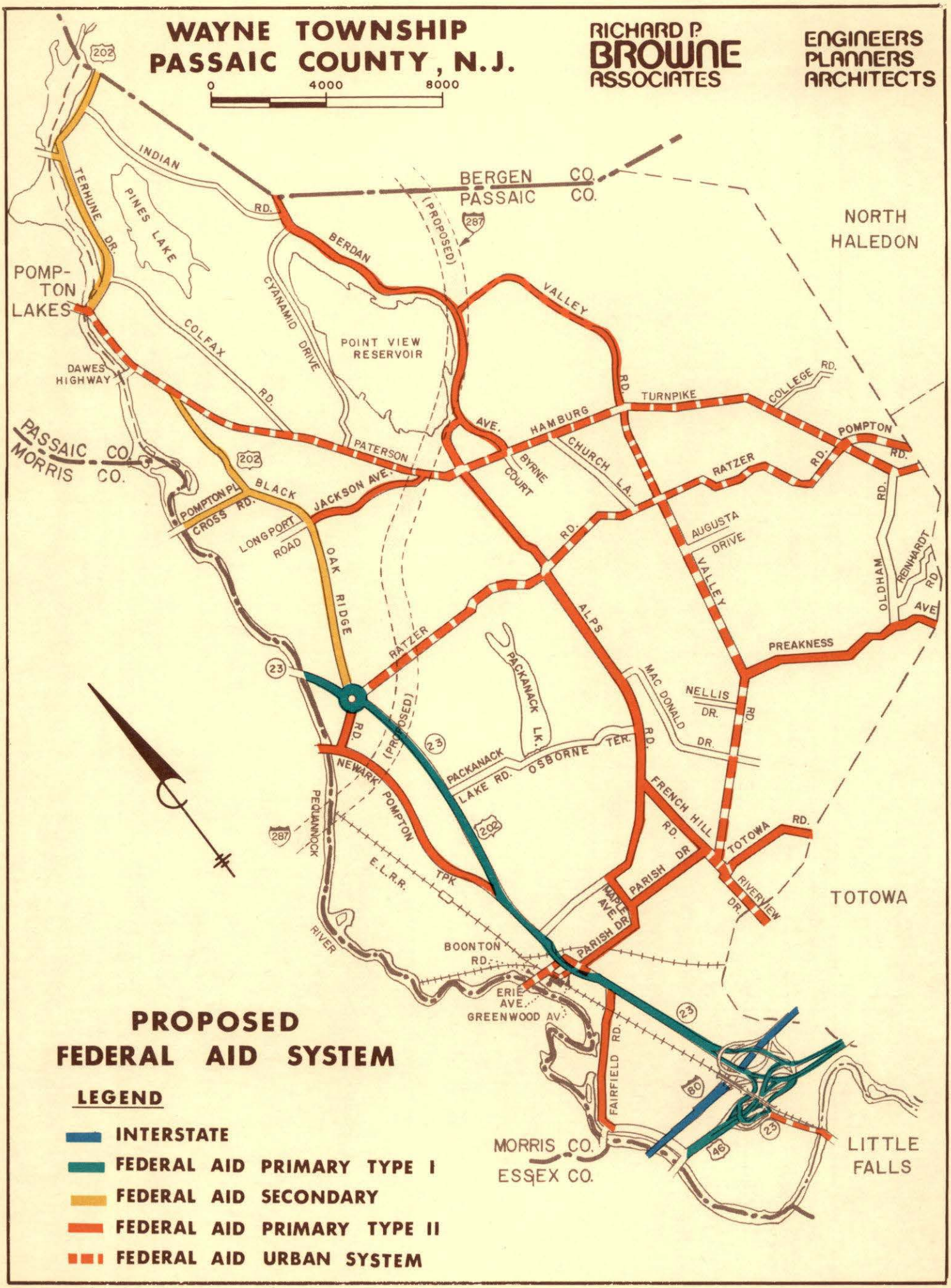
ROUTE NUMBER	STREET NAME	FROM	TO	LENGTH MILES	FEDERAL-AID SYSTEM PRESENT	FEDERAL-AID SYSTEM PROPOSED
		FEDERAL-AID URBAN				
N.J. 23	N.J. 23	Little Falls Line	Route U.S. 46	0.48	Urban	Urban
Co. 23	Pat.-Ham. Turnpike	Pompton Lakes Line	Terhune Drive	0.05	Urban	Urban
U.S. 202 Co. 23	Pat.-Ham. Turnpike	Black Oak Ridge Road	Terhune Drive	0.75	Urban	Urban
Co. 23	Pat.-Ham. Turnpike	Black Oak Ridge Road	Oldham Road	5.19	Urban	Urban
Co. 2	Central Avenue	Oldham Road	Haledon Line	0.21	Urban	Urban
Co. 130	Ratzer Road	Pat.-Ham. Turnpike	N.J. Route 23	4.00	Urban	Urban
Co. 18	Pompton Road	Pat.-Ham. Turnpike	Haledon Line	0.49	Urban	Urban
U.S. 202 Co. 117	Boonton Road	County Line	N.J. Route 23	0.46	Urban	Urban
Co. 115	Riverview Drive	Totowa Road	Totowa Line	0.30	Urban	Urban
Co. 128	Valley Road	French Hill Road	Ratzer Road	2.59	Urban	Urban
Co. 133	French Hill Road	Totowa Road	Valley Road	0.06	Urban	Urban
Co. 122	Erie Avenue	Boonton Road	Greenwood Avenue	0.10	Urban	Urban
Co. 122	Greenwood Avenue	Erie Avenue	Sherman Avenue	0.14	Urban	Urban
	Sherman Avenue	Boonton Road	Greenwood Avenue	0.10	Urban	Urban
	Valley Road	Ratzer Road	Pat.-Ham. Tpk	0.70	Urban	Urban
		TOTAL FEDERAL-AID URBAN		15.62		

TOWNSHIP OF WAYNE

PROPOSED FEDERAL-AID SYSTEMS

TABLE IV (Continued)

ROUTE NUMBER	STREET NAME	FROM	TO	LENGTH MILES	FEDERAL-AID SYSTEM PRESENT	FEDERAL-AID SYSTEM PROPOSED
			FEDERAL-AID PRIMARY TYPE II			
County 76	Preakness Avenue	Totowa Line	Valley Road	1.75	None	Type II
County 116	Totowa Road	Totowa Line	Riverview Drive	0.72	None	Type II
County 123	Jackson Avenue	Pat.-Ham. Turnpike	Black Oak Ridge Rd	0.83	None	Type II
County 124	Maple Avenue	Alps Road	Parish Drive	0.25	None	Type II
County 125	Parish Drive	French Hill Road	Boonton Road	1.12	None	Type II
	Valley Road	Pat.-Ham. Turnpike	Berdan Avenue	1.75	None	Type II
County 129	Alps Road	Maple Avenue	Pat.-Ham. Tpk.	3.18	None	Type II
	Alps Road	Pat.-Ham. Tpk	Berdan Avenue	0.50	None	Type II
County 133	French Hill Road	Valley Road	Alps Road	0.84	None	Type II
County 136	Fairfield Road	N.J. Route 23	Twin Bridges Road	1.02	None	Type II
County 160	Newark-Pompton Tpk.	N.J. Route 23	County Line	1.65	None	Type II
County 118	Berdan Avenue	Pat.-Ham. Tpk	County Line	2.34	None	Type II
County 119	Black Oak Ridge Rd.	N.J. Route 23	Newark-Pompton T.	0.30	None	Type II
			TOTAL PROPOSED FEDERAL-AID PRIMARY TYPE II	16.25		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TERHUNE DR.
PINES LAKE
BERGEN CO.
PASSAIC CO.
(PROPOSED) 287
NORTH HALEDON
BERDAN
VALLEY RD.
POMP-TON LAKES
CYANAMID DRIVE
POINT VIEW RESERVOIR
COLFAX RD.
DAWES HIGHWAY
TURNPIKE
COLLEGE RD.
POMPTON RD.
PASSAIC CO.
MORRIS CO.
202
PATERSON AVE.
HAMBURG
BYRNE COURT
CHURCH LA.
RATZER RD.
POMPTON PL.
CROSS RD.
BLACK JACKSON AVE.
LONGPORT ROAD
OAK RIDGE
AUGUSTA DRIVE
VALLEY RD.
OLDHAM RD.
REINHARDT AVE.
ALPS RD.
PREAKNESS
23
RATZER
PACKANACK LK.
MAC DONALD DR.
NELLIS DR.
(PROPOSED) RT.
NEWARK POMPTON TPK.
PACKANACK LAKE RD.
OSBORNE TER.
FRENCH HILL RD.
PEQUANNOCK
E.L.R.R.
287
202
TOTOWA RD.
PARISH DR.
MAPLE AVE.
RIVERVIEW DR.
TOTOWA
RIVER
BOONTON RD.
ERIE AVE.
GREENWOOD AV.
FAIRFIELD RD.
80
46
MORRIS CO.
ESSEX CO.
LITTLE FALLS
PROPOSED
FEDERAL AID SYSTEM
LEGEND
INTERSTATE
FEDERAL AID PRIMARY TYPE I
FEDERAL AID SECONDARY
FEDERAL AID PRIMARY TYPE II
FEDERAL AID URBAN SYSTEM

PLATE XIV

VIII - TRAFFIC IMPROVEMENT PROGRAM

The primary aim of this study is to develop a coordinated, county-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

Analysis of collected traffic volume data indicates that traffic flow is directional on most of the major arterial streets within the township. During the morning peak traffic period which usually occurs in the 7-9 A.M. interval, traffic flow is predominantly southerly or easterly in direction. In the evening during the 4-6 P.M. peak period, this pattern reverses and the flow is largely northerly or westerly in direction. Usually during these peak periods, traffic flow in the primary direction accounts for 60 to 65 percent of the total two-way volume and sometimes is as high as 75 percent. Even though Interstate Route 80 is now opened to traffic, the diversion of traffic to it will only provide temporary relief to the existing traffic congestion on Route U.S. 46. However, it is not anticipated that Interstate Route 287 will be completed within the next few years nor is it expected that completion of this route will reduce travel on most major parallel arterial roads appreciably.

The township does not have any central business district area. Except for the Mountain View section near the railroad station, most commercial development occurs along the major routes such as N.J. Route 23, the Paterson-Hamburg Turnpike and parts of Valley Road. Offstreet lots provide the bulk of parking facilities for these commercial establishments.

N.J. Route 23 north from Interstate Route 80 to Boonton Road is presently a very narrow four-lane undivided roadway. This highway is totally inadequate for the volumes and speed of traffic it carries. Major reconstruction of the route is necessary and will be considered in conjunction with the urban redevelopment contemplated for this area.

General Recommendations

Traffic Signals

Traffic signals should be responsive to traffic demand and coordinated to provide progression along the major arterial routes and 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. Semi-traffic-actuated signals will only interrupt the major traffic movement with a red light when actual demand exists on the minor street. At isolated locations and at shopping centers where traffic demand fluctuates throughout the day and evening, fully-traffic-actuated controllers can be employed to minimize vehicular delay on all approaches.

PLATE XV indicates the proposed future traffic signal network within the Township of Wayne. Installation of five new semi-traffic-actuated signals at critical intersections throughout the Township is proposed. Ultimately, it is proposed that the two fixed time signals at the Willowbrook Shopping Center be converted to fully-traffic-actuated operation. Other semi-traffic-actuated signals presently operating on fixed time should revert to the actuated mode of operation. Interconnection should also be installed (as indicated on PLATE XV) to maintain good progression along the major arterial routes such as Paterson-Hamburg Turnpike and Valley Road.

Traffic Control System

Traffic flow on those major arterial routes having numerous traffic signal installations exhibit heavy directional distribution during peak traffic periods. Usually the heavier flow occurs southbound and eastbound during the morning peak periods and reverses direction during the evening peak hour. A traffic signal system should be installed to take advantage of this directional flow to provide adequate progression in the heavier direction. Some random variation does also exist throughout the day particularly along the Paterson-Hamburg Turnpike in the vicinity of the shopping centers near Berdan Avenue. Almost all of the signals along the Turnpike are of the semi-traffic-actuated type and it is proposed that all of the signals, existing or proposed, along Valley Road be of this same type. The system must be capable of retaining this type operation and supervise coordination among the signals.

The system would consist of five components - a master controller, system interconnection, telemetry equipment at the master and local controllers, coordinating equipment at the local controllers and sampling detectors. The master controller should have the capability of sampling inbound and outbound volume levels and supervise a choice of background cycles based on these levels. Three background cycle lengths with three offset settings for each cycle length should be provided. System interconnection could be provided through leased telephone line with the necessary telemetry equipment to transmit information between the master controller and the local controllers and sampling detectors. Since the local controllers are of the semi-traffic-actuated type it will be necessary to have coordinating units at each location. These should have the capability of providing three cycle length selections, three offset settings for each cycle length and for the controllers at Paterson-Hamburg Turnpike intersections with Alps Road, Berdan Avenue, the shopping center between these two roads, and Cyanamid Drive, the added capability of two selectable side street maximum extension intervals. Sampling detectors on the Paterson-Hamburg Turnpike south of Dawes Highway and near Valley Road and on Valley Road near Preakness Avenue will supply volume information to be evaluated by the master controller.

Traffic Signs and Markings

Almost all of the traffic signs posted along routes within the Township conform to the standards described in the Manual on Uniform Traffic Control Devices. It was noticed that there are a few non-standard KEEP RIGHT signs and that a non-standard STOP HERE ON LINE sign exists on the Paterson-Hamburg Turnpike near Squad Place. It is recommended that these signs be changed to conform to standards. Most other signs in the Township are in good condition, however, a few worn signs should be replaced.

At many of the intersections improvement locations, lane-use restrictions exist or have been recommended. To properly forewarn motorists of this lane-usage and therefore maintain lane-use discipline, it is recommended that overhead lane control signs be installed. These lane control signs are intended to complement the painted arrow markings and will function when markings are difficult to distinguish because of wear or weather conditions.

Proper pavement markings are also essential to good traffic operations. Our reconnaissance of the study network was conducted during the winter months when pavement markings are usually at their worst. It was noticed that lane lines and stop lines are worn and that painted channelization does not exist in advance of many traffic islands. However, good use has been made of pavement edge lines along roads lacking curbing.

Curb Parking Control

Along major arterial routes such as the Paterson-Hamburg Turnpike and Valley Road, parking is prohibited and posted signs to this effect have been installed. Most of other major routes are two-lane highways of insufficient width to allow parking to be practiced without seriously interfering with the free flow of traffic. However, no signs to this effect are presently posted. Fortunately, for the most part these streets are located through residential areas and observations did not indicate even a few vehicles parking along these routes.

Traffic Regulations

All existing traffic regulations except those pertaining to signal installations, have been approved by the State of New Jersey. Before any new regulation is posted, approval is first sought from the State so that the regulation is proper and enforceable.

None of the traffic signal locations (except for those located on state highways) have been approved by the New Jersey Department of Transportation. It is anticipated that this approval will be obtained in conjunction with all proposed changes recommended under TOPICS implementation. At those locations where traffic signal installations are not to be modified under this program, the existing installations conform to design and practice as recommended in the Manual on Uniform Traffic Control Devices and Title 39 of the revised New Jersey Statues. Approval should be sought for these locations.

Public Transportation

The only station of the Erie-Lackawanna Railroad Company located within Wayne is the Mountain View station located near Boonton Road. A total of fourteen trains (seven eastbound and seven westbound) of the sixteen passenger runs on this track stop at this station. Service is concentrated during the morning commutting period from about 6:50 to 8:30 A.M. and in the evening from 5:19 to 7:40 P.M. Adequate, free, off-street parking is provided for the patrons of this railroad in the recently repaved parking lot. About ten percent of the patrons are of the "Kiss and Ride" type. Usually these passengers are dropped off and picked up on Erie Avenue and their vehicles do not interfere with traffic operations on this street.

Because the station is located so close to Boonton Road it is necessary to close off the Boonton Road grade crossing while the train is stopped at the station and passengers are being discharged. This closes off Boonton Road and complicates traffic movements at the intersection of Boonton Road and Greenwood Avenue after the trains leave the station. Traffic backs up on Boonton Road across this intersection and under N.J. Route 23. Left turning traffic on Greenwood Avenue then experiences considerable difficulty in entering Boonton Road. However, this period of congestion is only of 5 - 10 minutes duration.

There is no adequate station shelter at this railroad stop. Approximately 20 trains (including freight) cross Boonton Road daily. Sufficient interruption of Boonton Road traffic does not occur to merit a grade-separated structure, nor does the accident experience suggest this necessity. If all passenger trains were required to stop further south of the present location it might be possible to allow the grade crossing to remain open while trains are in the station. This practice

would minimize the interruption to Boonton Road traffic and generally improve traffic operations at Greenwood Avenue after the trains departed the station. Further analysis of this suggestion is required to see if this practice would adversely affect traffic safety at this crossing during those periods when freight trains cross Boonton Road.

Accident Records

In order to maintain good traffic safety records, it is necessary to identify locations where accident frequency is increasing. An accident location file which is constantly updated is therefore required. 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.

Other Improvements

The intersection of N.J. Route 23, Black Oak Ridge Road (U.S. Route 202) and Ratzer Road is presently a rotary interchange. For a three year period there was a total of 225 accidents at this location. The ratary is very small and has totally insufficient weaving distances for the various traffic streams which must cross each other at this location. Because of the high traffic volumes, the multi-leg approaches and the closeness of these approaches, it is impossible to provide any meaningful improvement unless a grade separated interchange is provided. This location is presently under design by a consultant for the New Jersey Department of Transportation.

Detailed Recommendations

It was determined that most of the delay and congestion associated with a route usually occurred at signalized intersections. This situation also prevailed for those locations experiencing high accident numbers.

After consultation with local officials familiar with traffic safety and operation; after carefully considering accident experience throughout the township 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 twenty-six locations require improvement under the TOPICS program. These locations are shown in PLATE XVI and are listed in TABLE V. A brief discussion

to summarize location problems, specific recommendations and benefits has been presented for all locations. Detailed improvement drawings have been prepared for twenty of these locations. Included within these drawings are existing or proposed signal phasing for all signal locations, morning or evening peak hour traffic volumes and a simplified accident collision diagram for the three year period 1967 through 1969. Collision diagrams were not prepared for those locations exhibiting less than eighteen accidents for this three year period.

Priority Ratings for Improvement Locations

The development of a rational methodology by which all locations under study may be evaluated on an equal basis and rated according to deficiencies in capacity and safety is one of the basic objectives of the TOPICS study.

For the purpose of calculating priority ratings, intersections may be classified as either signalized or nonsignalized. Nonsignalized intersections include both those with stop-sign yield-sign control, as well as those with continuous flashers. Signalized intersections primarily have pretimed signals with regular cycle times, but for actuated signals having variable cycle lengths, the average green time may be used in calculations.

The two parameters considered in developing the priority ratings are travel delays and accidents. Delay information was confined to weekday morning and afternoon peak hours. Since accidents have to be expressed in terms directly comparable with delays, it was necessary to compute the monetary value for delay time and each accident. These quantities were derived in accordance with the recommendations in "Accident Facts", published by the National Safety Council and "Road User Benefit Analysis for Highway Improvements" published by the American Association of State Highway Officials. Once vehicle delays and accidents have been reduced to a common unit for comparison, it is possible to determine the relative need for improvement.

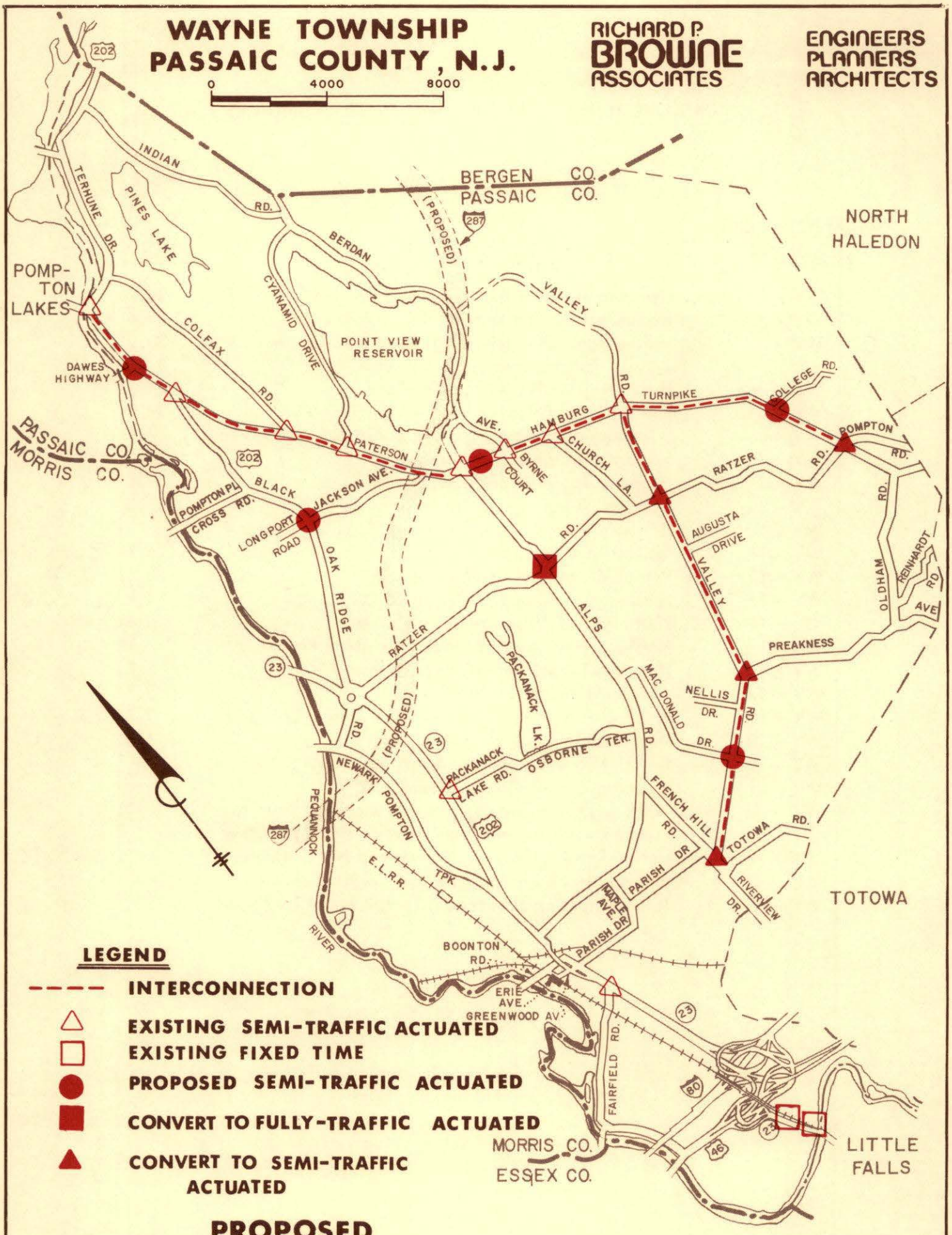
By applying this method of computing priority indices to the Township of Wayne, the intersection improvement priorities shown on TABLE V were developed.

WAYNE TOWNSHIP
PASSAIC COUNTY, N.J.

0 4000 8000

RICHARD P. BROWNE ASSOCIATES

ENGINEERS
PLANNERS
ARCHITECTS



LEGEND

- INTERCONNECTION
- △ EXISTING SEMI-TRAFFIC ACTUATED
- □ EXISTING FIXED TIME
- ● PROPOSED SEMI-TRAFFIC ACTUATED
- ■ CONVERT TO FULLY-TRAFFIC ACTUATED
- ▲ CONVERT TO SEMI-TRAFFIC ACTUATED

PROPOSED
TRAFFIC SIGNAL NETWORK

PLATE XV

IMPROVEMENT LOCATIONS AND PRIORITY INDICES

TABLE V

IMPROVEMENT NUMBER	LOCATION	INDEX
WY - 1	Hamburg Turnpike and Terhune Drive	36.8
WY - 2	Hamburg Tpk. and Pompton Rd. - Ratzer Road	33.4
WY - 3	Valley Road and French Hill Road - Riverview Drive - Totowa Road	30.2
WY - 4	Hamburg Turnpike and Valley Road	28.5
WY - 5	Route 23 and Fairfield Road - Van Dyne Avenue	27.0
WY - 6	Widening of Hamburg Tpk. from Alps Rd. to Church La.	9.6
WY - 7	Hamburg Turnpike and Alps Road	24.3
WY - 8	Hamburg Turnpike and Church Lane	9.1
WY - 9	Hamburg Turnpike and Berdan Avenue	8.3
WY - 10	Hamburg Turnpike and Preakness Shopping Center Ent.	
WY - 11	Valley Road and Ratzer Road	16.1
WY - 12	Route 23 and Packanack Lake Road	15.5
WY - 13	Hamburg Turnpike and Cyanamid Drive	14.1
WY - 14	Route 23 and Willowbrook Entrances	5.4
WY - 15	Hamburg Turnpike and Black Oak Ridge Road	9.1
WY - 16	Hamburg Turnpike and Dawes Highway	4.3
WY - 17	Alps Road and Ratzer Road	3.7
WY - 18	Black Oak Ridge Rd. and Jackson Ave. - Longport Rd.	2.7
WY - 19	Alps Road and French Hill Road	1.8
WY - 20	French Hill Road and Parish Drive	
WY - 21	Hamburg Turnpike and College Road	
WY - 22	Widening of Valley Road from French Hill Road to Preakness Avenue and from Augusta Drive to Ratzer Rd.	
WY - 23	Valley Road, Preakness Avenue and Nellis Drive	
WY - 24	Paterson Hamburg Turnpike and Colfax Avenue	
WY - 25	Interconnection of Hamburg Turnpike - Valley Road Signals	

WAYNE TOWNSHIP
PASSAIC COUNTY, N.J.

0 4000 8000

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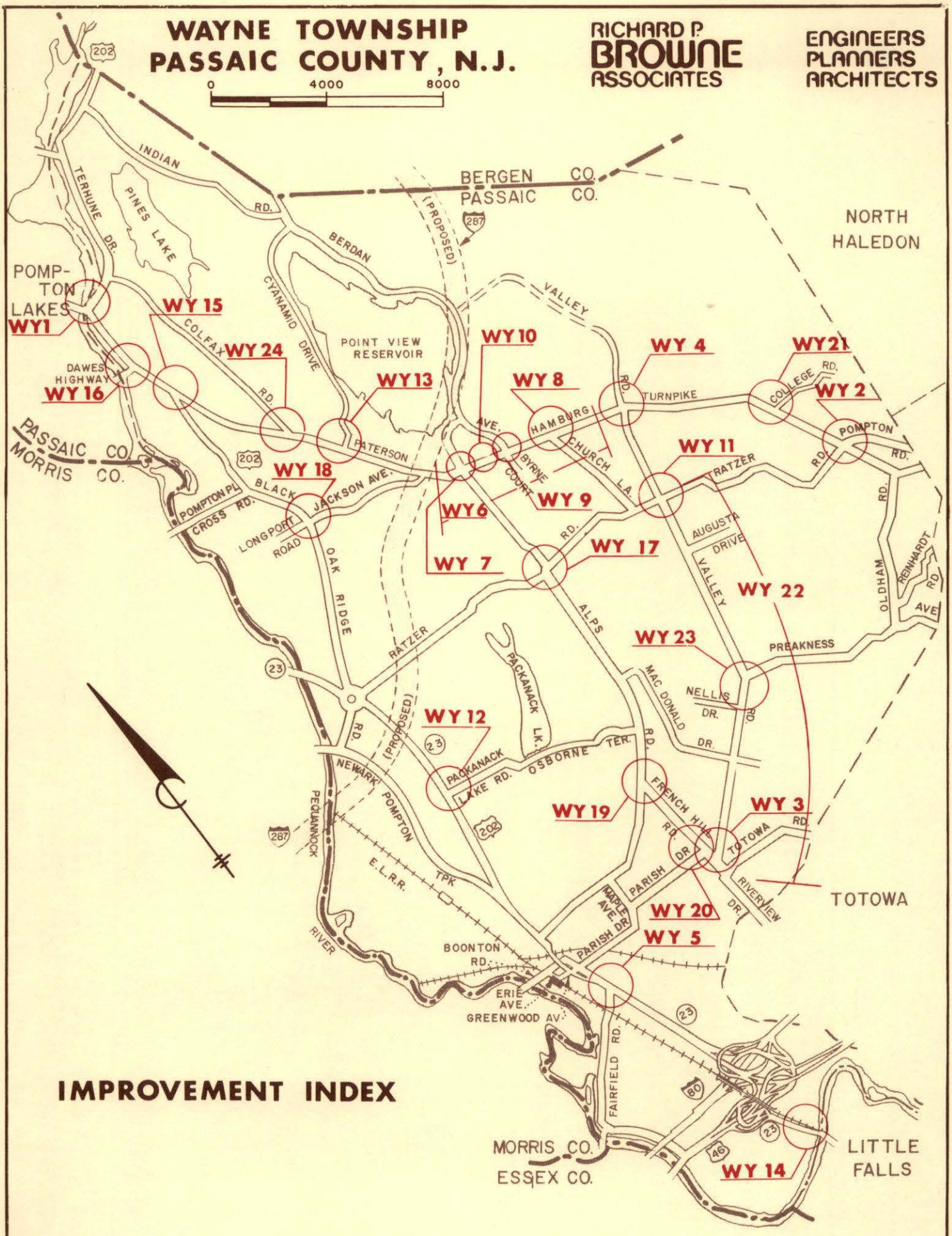


IMPROVEMENT INDEX

PLATE XVI

IX - SUMMARY OF REPORT

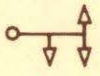
The TOPICS program was created to ease the traffic congestion within our populated areas by evaluating problem locations which can be corrected through a series of minor improvements. The aim is to increase capacity and safety, not on the super highways, but on the roads one travels every day to and from work, school, or shopping. These corrections can be made relatively soon 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.

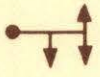
First, speed and delay studies were made to ascertain the roadway links with unsatisfactorily low speeds. Second, accident records were studied to locate the areas having unusually severe collision rates. Thirdly, traffic volumes were counted and evaluated, to determine where roadway conditions were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

This method of analysis identified 25 locations in the Township of Wayne which need corrective action. Priorities were formulated by considering both delay and accident experience. 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.

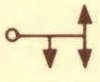
LEGEND FOR IMPROVEMENTS



EXISTING SIGNAL HEAD



PROPOSED SIGNAL HEAD



EXISTING STANCHION, PROPOSED SIGNAL HEAD

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

ROADWAY WIDENING

PEDESTRIAN HEAD

RIGHT OF WAY

BUILDING LINES

SIGN POSTS

GUARD RAIL

SIGNAL DETECTORS

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

WY - 1 PATERSON-HAMBURG TURNPIKE & TERHUNE DRIVE

Problems

(1) Insufficient capacity, resulting in frequent delays, on all approaches

(2) High left turn volumes from northerly approach into Terhune Drive during peak hours interferes with through traffic movement

(3) High accident location - 44 in three years, including eight right angle or left turn types, and one pedestrian type

(4) Narrow approach widths on Hamburg Turnpike have resulted in at least five same direction, sideswipe accidents

Recommendations

(1) Widen Terhune Drive approach to two lanes, thereby reducing green signal time required for this phase

(2) Widen southeasterly approach on Hamburg Turnpike to provide exclusive right turn lane

(3) Widen northwesterly approach on Hamburg Turnpike to three lanes

(4) Install overhead lane control signs on northwesterly approach

(5) Revise existing signal and interconnect with other Paterson-Hamburg Turnpike signals. Return operation to semi-traffic actuation.

(6) Install channelizing islands on Terhune Drive

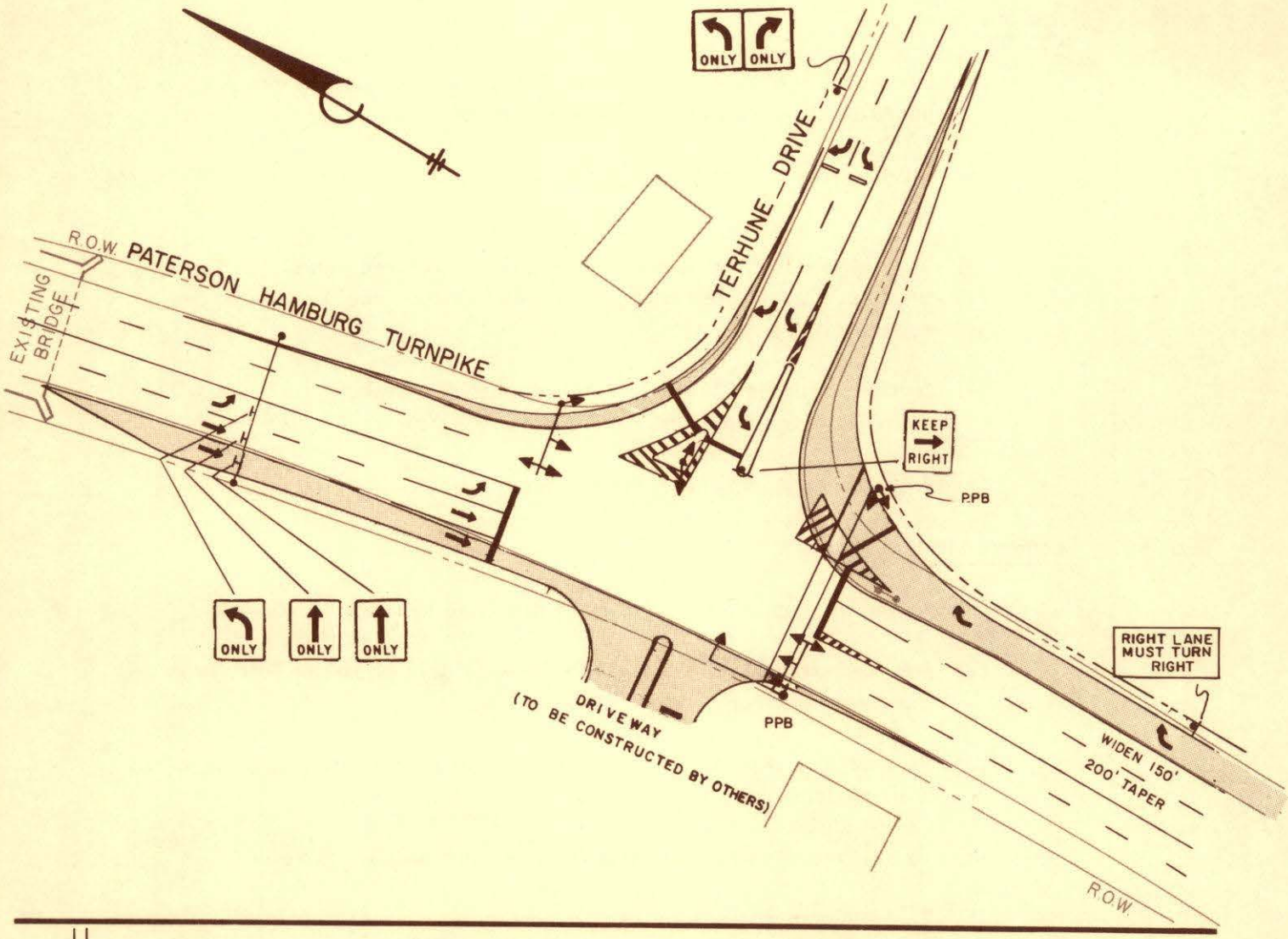
Benefits

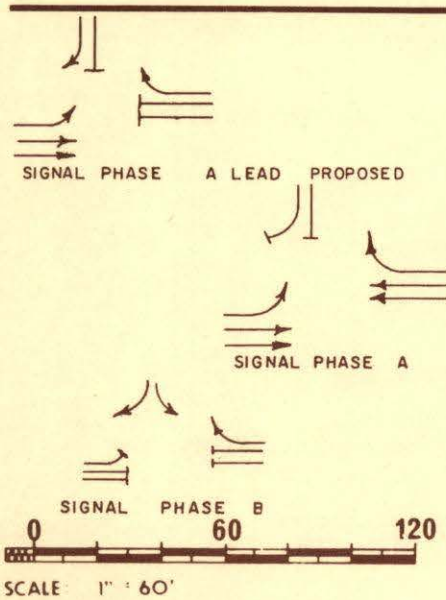
(1) Increased capacity on all approaches

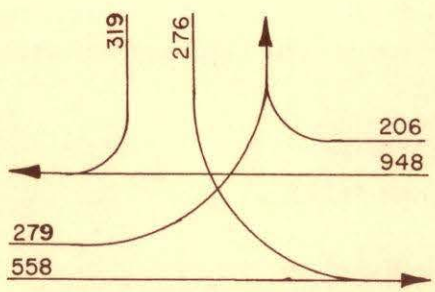
(2) Reduction of right angle, left turn, and sideswipe accidents

(3) Reduced delays and congestion on all approaches

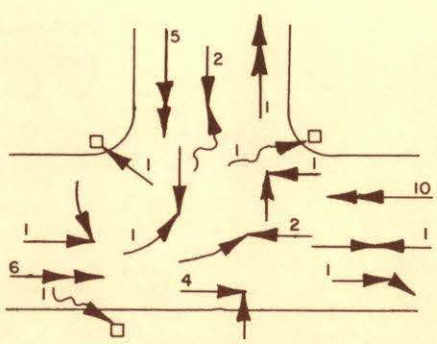
(4) Improved visibility of signal heads







PEAK HOUR VOLUME 4:30 – 5:30 P.M.



ACCIDENT SUMMARY 3 YR PERIOD

PROPOSED IMPROVEMENT WY 1

WY - 2 PATERSON-HAMBURG TURNPIKE & RATZER ROAD-POMPTON ROAD

Problems

(1) Exceedingly high volume of left turns, over 500 during morning peak hour from Hamburg Turnpike onto Pompton Road

(2) Insufficient capacity on all approaches during peak hours result in delay and congestion

(3) Very high accident number (50 accidents in three years), including fourteen right angle accidents, seven left turn accidents, and one pedestrian type

(4) Narrow (nineteen feet wide) approaches on Hamburg Turnpike with no visible lane markings

(5) Turning movements receive no priority

Recommendations

(1) Widen all approaches by at least one lane to increase capacity

(2) Provide exclusive lanes and lead green signal phase for left turns from Hamburg Turnpike to Pompton Road

(3) Provide free right turn lane from Pompton Road to Hamburg Turnpike, with channelization

(4) Install overhead lane control signs on Hamburg Turnpike

(5) Revise signal to conform to revised Manual on Uniform Traffic Control Devices and convert to semi-traffic actuated operation

(6) Installation of an all red sequence because of new intersection width and installation of a fire preemption sequence

Benefits

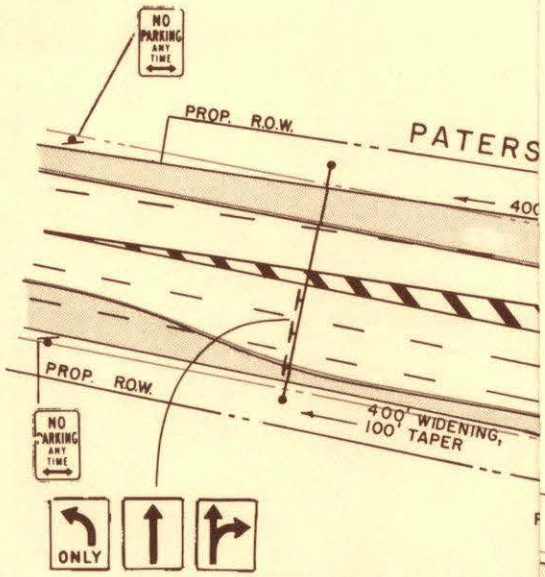
(1) Increased capacity on all approaches

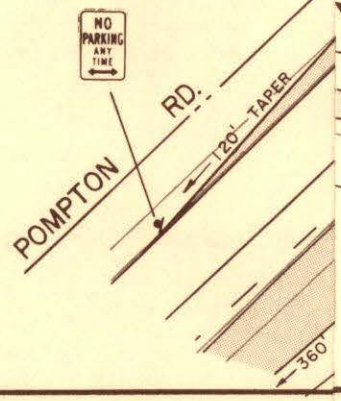
(2) Reduction in delay and congestion on all approaches

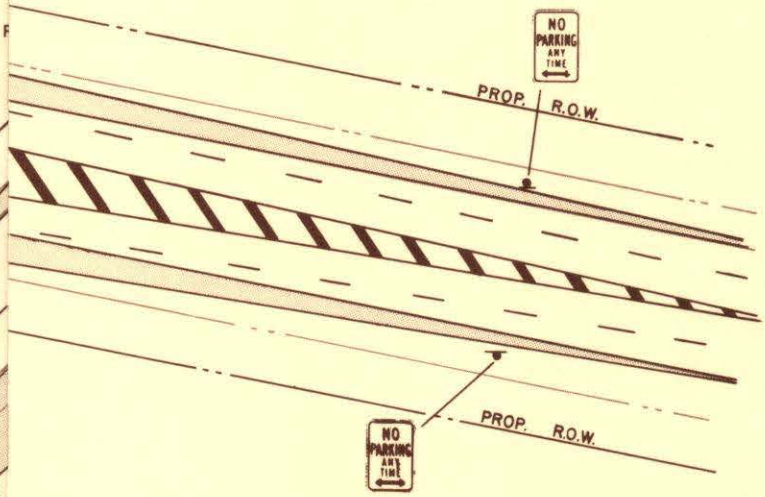
(3) Improved lane discipline should decrease same direction accidents

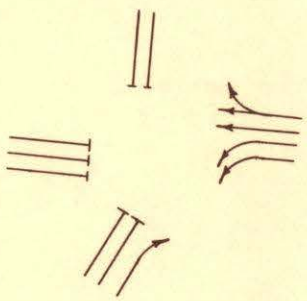
(4) Improved signal operation should reduce left turn accidents

(5) Improved visibility of signal heads

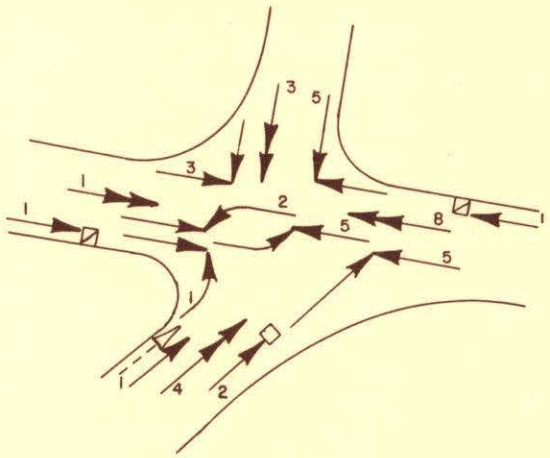








PROPOSED SIGNAL PHASE "A"



ACCIDENT SUMMARY, 3 YR. PERIOD

0 60 120

SCALE: 1" = 60'

ROPOSED IMPROVEMENT WY 2

WY - 3 VALLEY ROAD & FRENCH HILL ROAD - RIVERVIEW DRIVE & TOTOWA ROAD

Problems

(1) Insufficient capacity on all approaches

(2) Extremely long delays on Riverview Drive approach because of existing traffic signal at Valley Road and French Hill Road

(3) Sharp curve on Riverview Drive south of intersection restricts visibility and maneuverability

(4) High accident location - 28 in three years

Recommendations

(1) Widen Riverview Drive (not to be done under TOPICS program), Valley Road and French Hill Road approaches

(2) Improve Totowa Road intersection by installing channelization and a fixed-time traffic signal

(3) Install new channelization on Valley Road

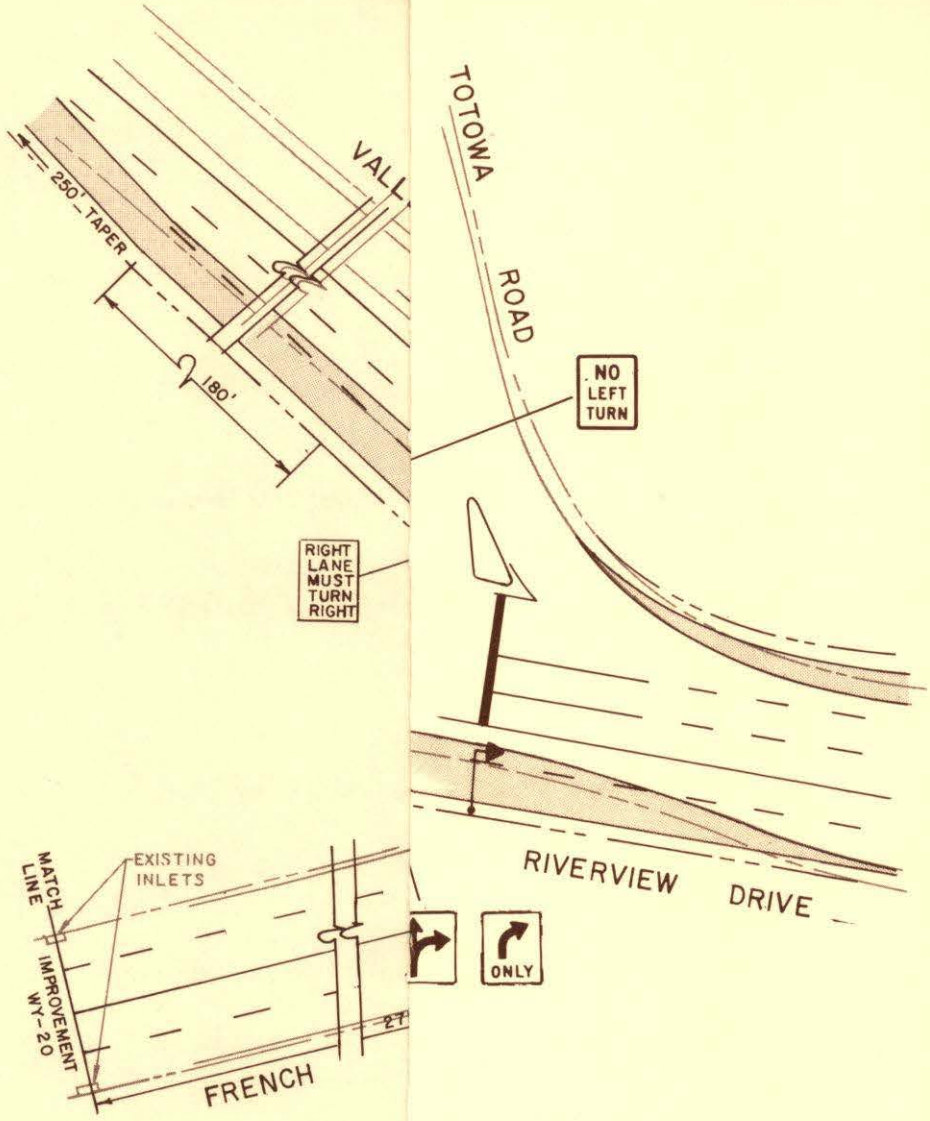
(4) Revise existing signal at Valley Road and coordinate with new signal at Totowa Road

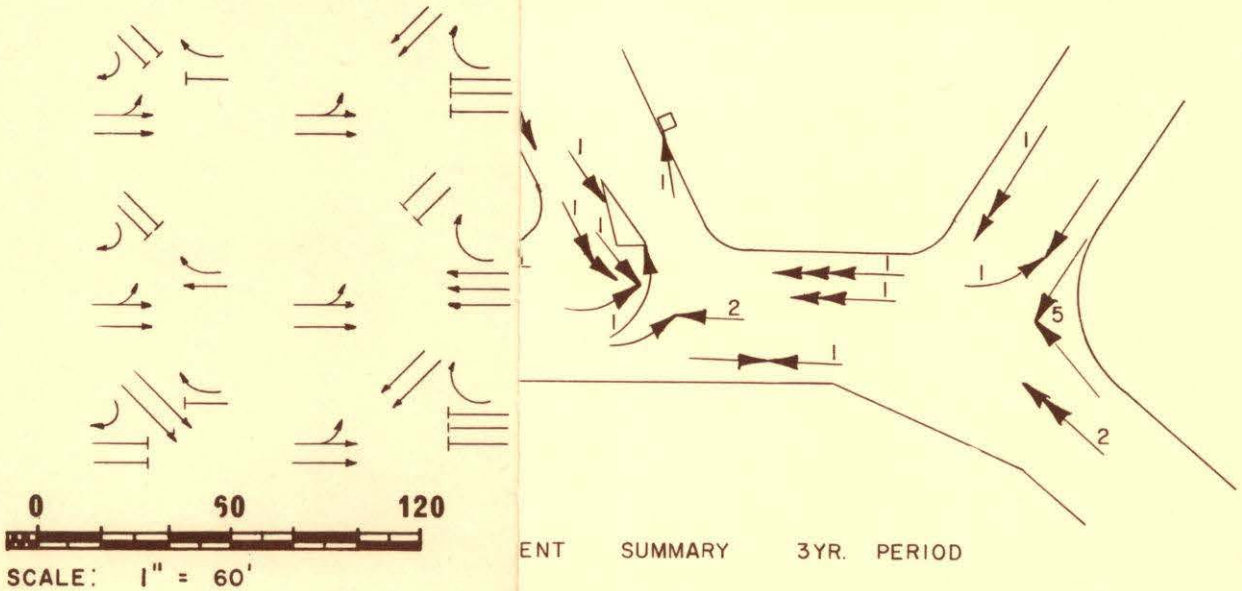
Benefits

(1) Large reductions in delays should occur on Riverview Drive and Totowa Road

(2) Reduction of right angle accidents at Totowa Road and Riverview Drive

(3) Increased intersection capacity





ENT SUMMARY 3YR. PERIOD

ROPOSED IMPROVEMENT WY 3

WY - 4 PATERSON-HAMBURG TURNPIKE & VALLEY ROAD

Problems

(1) High accident location - 32 accidents in three years, eight involving vehicles turning left

(2) Insufficient capacity on both Hamburg Turnpike and Valley Road southerly approaches

(3) Wayne Mall Shopping Center entrance-exit about 100 feet east of intersection complicates traffic movements

(4) Increased traffic on Valley Road upon completion of Route 287 in this area

Recommendations

(1) Widening of the Paterson-Hamburg Turnpike and Valley Road approaches

(2) Installation of channelizing islands

(3) Revision of the existing traffic signal installation to include separate left turn phases

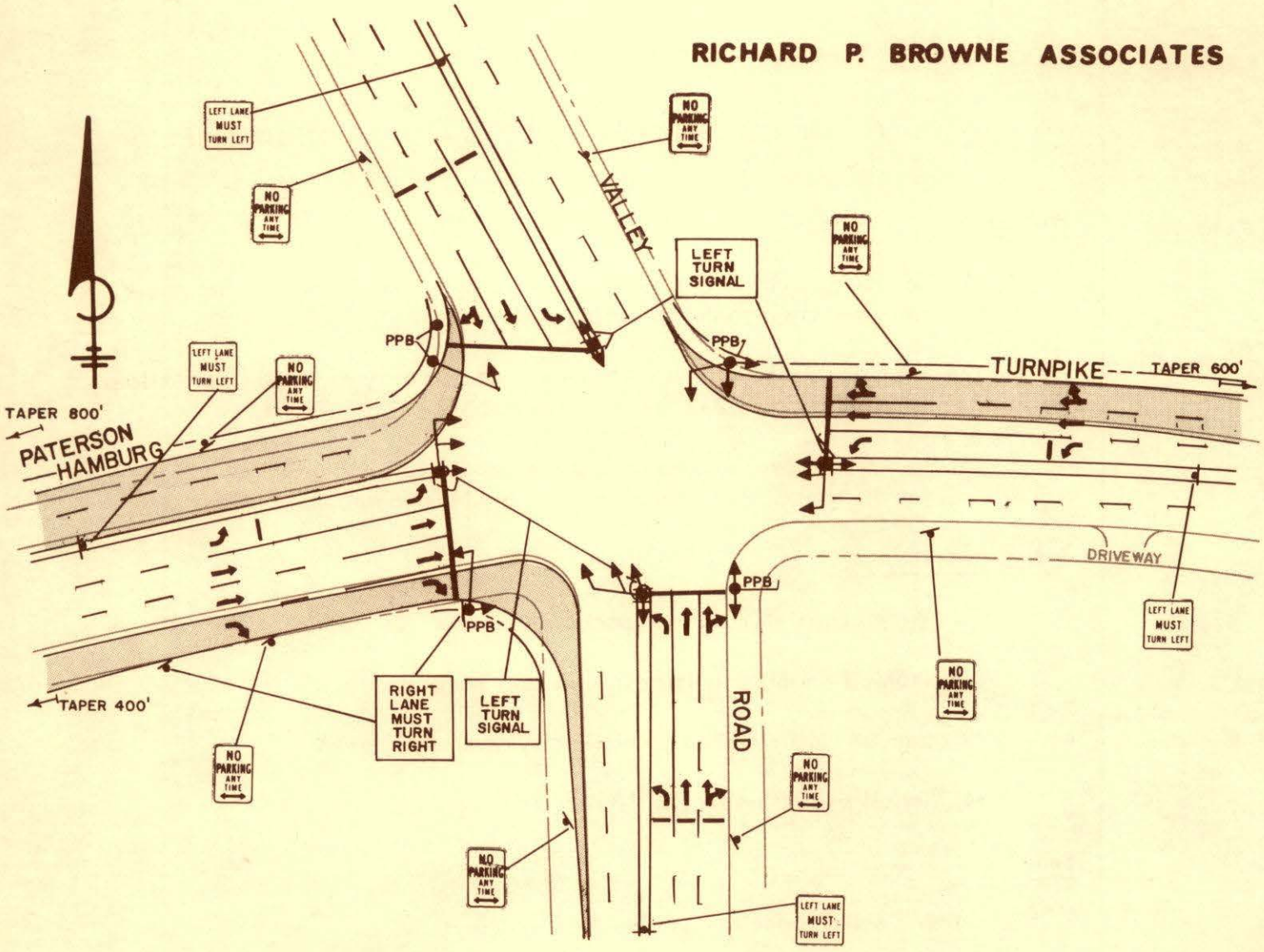
(4) Installation of pedestrian and left turn vehicle detectors

Benefits

(1) Reduction in left turn accidents

(2) Increased capacity on all approaches

(3) Control of egress and ingress from shopping center



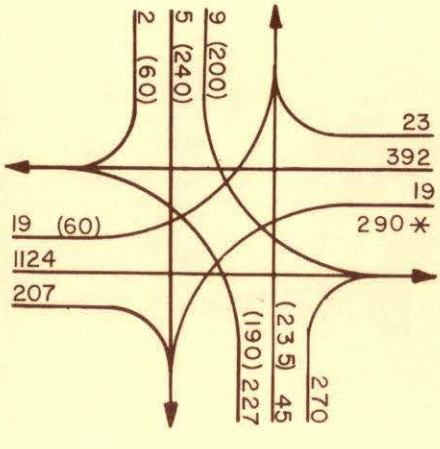
PROPOSED SIGNAL PHASE A'

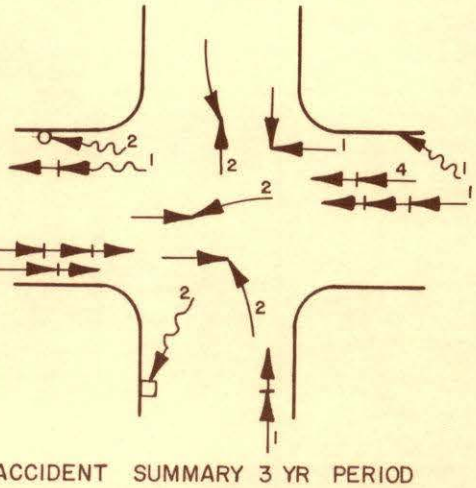
( ) FUTURE P.M. PEAK HOUR VOLUME WHEN RT. 287 IS COMPLETED.

PROPOSED SIGNAL PHASE A

PROPOSED SIGNAL PHASE B'

PROPOSED SIGNAL PHASE B





0 60 120

SCALE: 1" = 60'

PEAK HOUR VOLUME 7:30–8:30 A.M.
*PEAK HOUR VOLUME 4:30–5:30 P.M.

ACCIDENT SUMMARY 3 YR PERIOD

PROPOSED IMPROVEMENT WY 4

WY - 5 N.J. ROUTE 23 & FAIRFIELD ROAD - VAN DYNE AVENUE

Problems

(1) Insufficient capacity on Fairfield Road and Route 23 approaches result in extremely high delays during peak hours

(2) High accident location - 45 in three years mostly of the same direction type along Route 23

(3) Left turns from Route 23 southerly approach to Fairfield Road, though few in number, hinder movement of northbound through traffic

Recommendations

(1) Widen Fairfield Road approach to two lanes

(2) Prohibit northbound Route 23 left turn movement

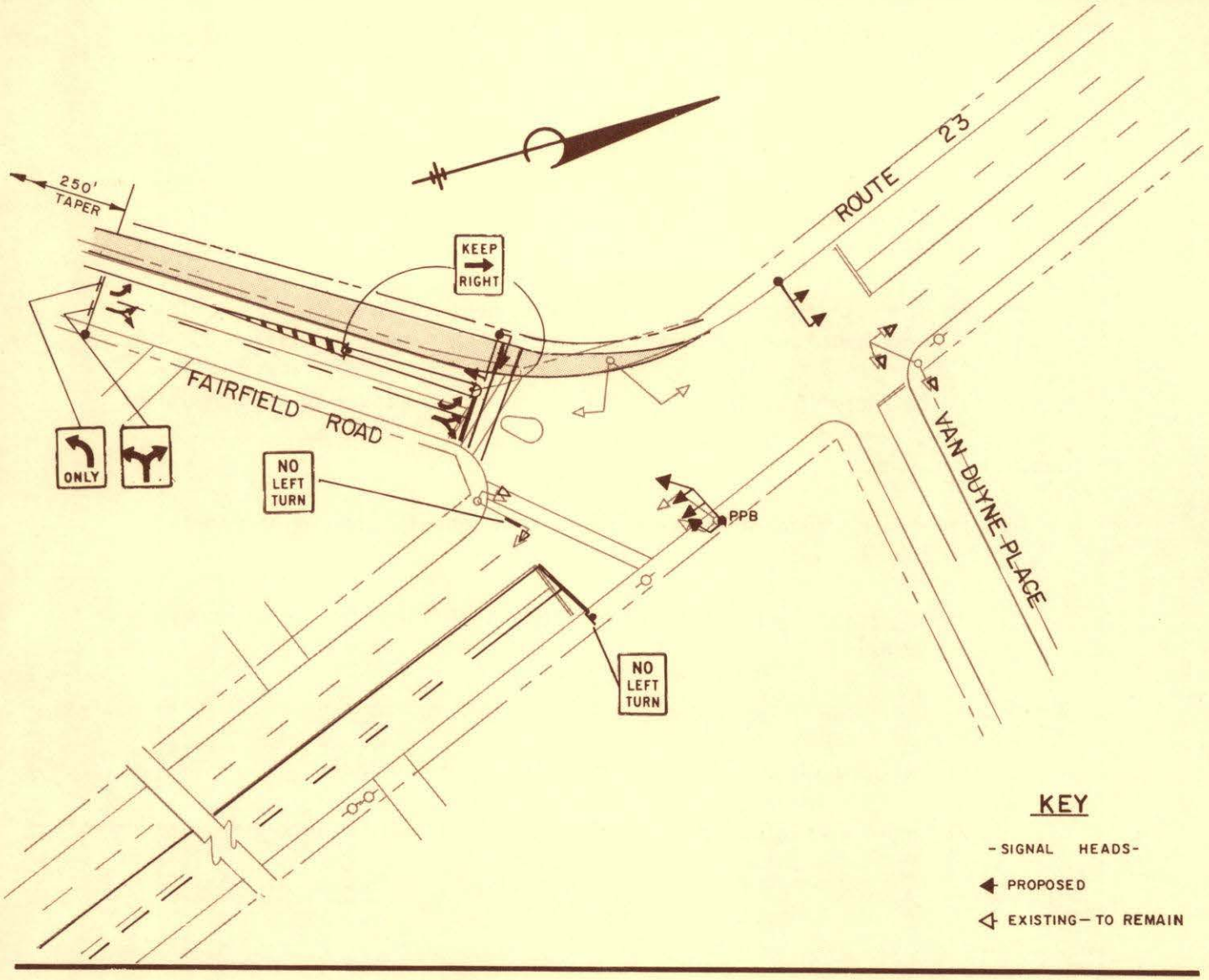
(3) Reduce Fairfield Road green time by about ten percent

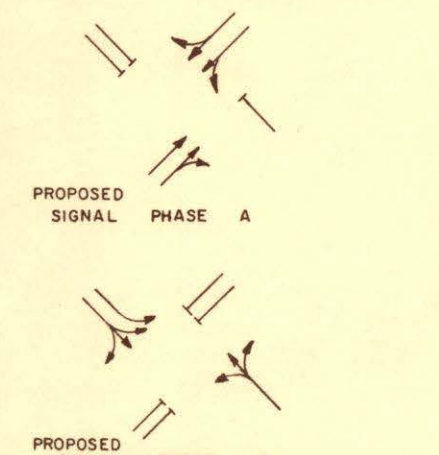
(4) Install pedestrian time of 18 seconds

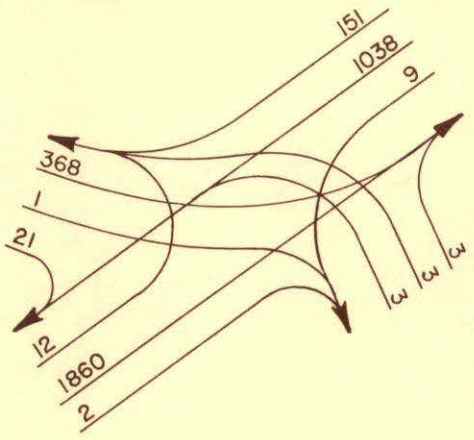
Benefits

(1) Increased capacity and reduction in delays

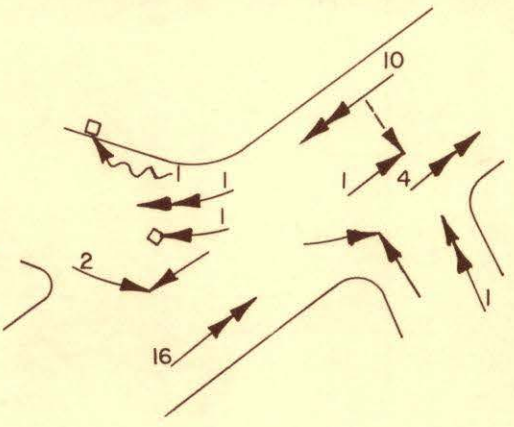
(2) Route 23 northbound capacity will increase slightly by eliminating delays due to left turning vehicles and slightly longer green time







PEAK HOUR VOLUME 4-5 P.M.



ACCIDENT SUMMARY 3 YR PERIOD

0 60 120

SCALE 1" = 60'

PROPOSED IMPROVEMENT WY 5

WY - 6 WIDENING OF PATERSON-HAMBURG TURNPIKE FROM ALPS ROAD TO CHURCH LANE

Problems

(1) Three shopping centers, with considerable ingress and egress traffic, are located along this three-quarter of a mile section of highway

(2) The accident rate throughout this segment is very high, many of the accidents resulting from the effects of left turning vehicles

(3) Left turning vehicles restrict the capacity and speed of through traffic

Recommendations

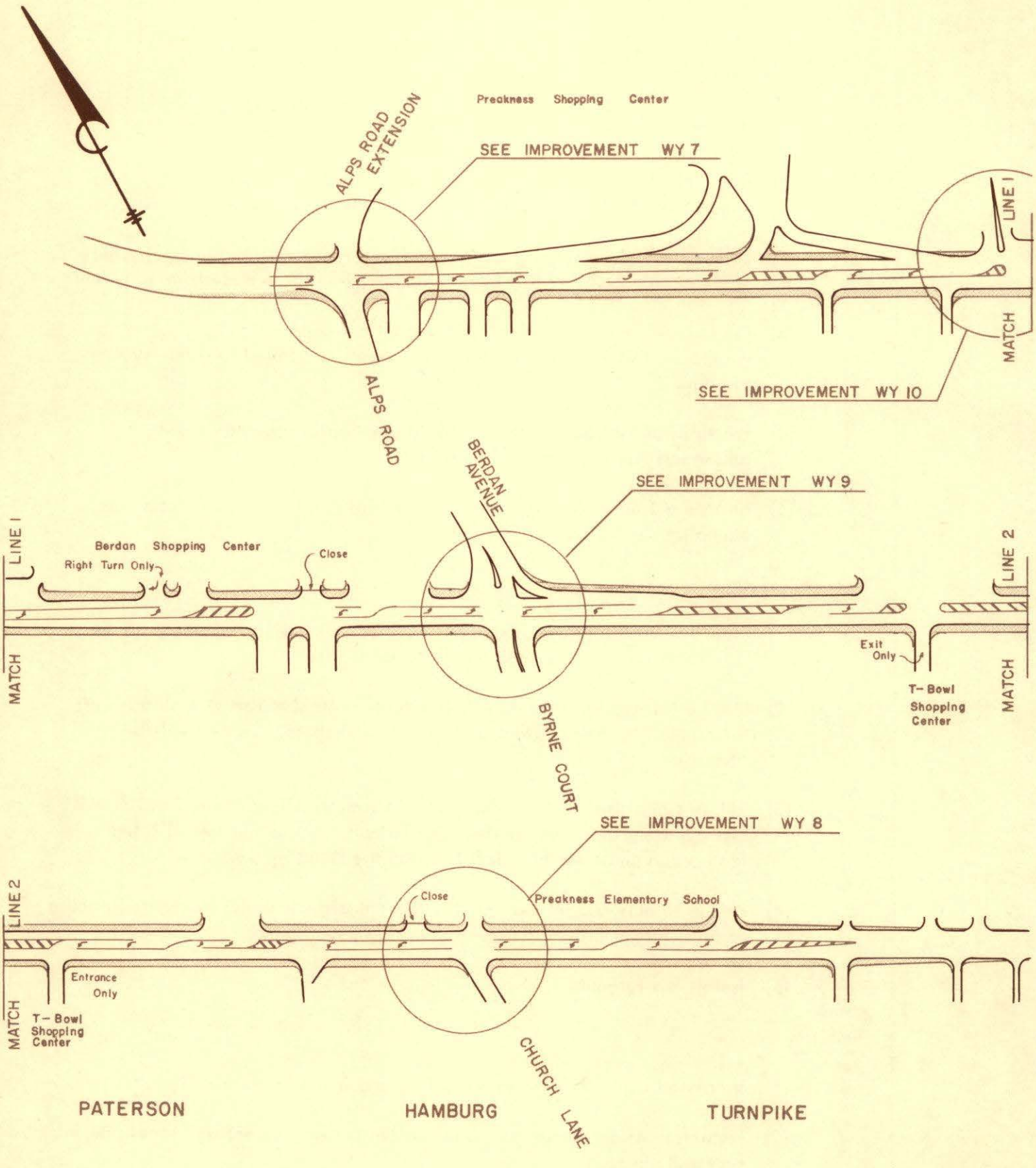
(1) Widen pavement to five full lanes throughout, reserving the center lane for left turning vehicles

(2) Use painted pavement markings to protect and control left turning vehicles

Benefits

(1) Reduction in accidents involving left turning vehicles

(2) Improved traffic flow, resulting in fewer delays for through traffic



PROPOSED IMPROVEMENT WY 6

WY - 7 PATERSON-HAMBURG TURNPIKE & ALPS ROAD

Problems

(1) Insufficient capacity on Hamburg Turnpike westerly approach and Alps Road southerly approach results in excessive delay during peak hours

(2) Extremely high accident location, 67 in three years, includes 21 right angle accidents, nine left turn accidents, and three pedestrian accidents

(3) Fixed time signal operation, with leading green for Hamburg Turnpike westbound traffic, does not provide flexibility needed to meet varying demands

(4) Bus stops on Hamburg Turnpike pavement to pick-up and discharge passengers (six buses during peak hour)

(5) Left turns from Hamburg Turnpike into Alps Road Extension (Preakness Shopping Center) are prohibited

Recommendations

(1) The Alps Road south approach be widened to three lanes, one each for right turn, straight through and left turn traffic

(2) Hamburg Turnpike be widened to provide protected left turn slots. Left turns into Alps Road Extension (Preakness Shopping Center) will be permitted

(3) Return signal timing from fixed time to semi-traffic-actuated which will allow more green time for Hamburg Turnpike phase and install a separate lead green phase for both left turns on the Hamburg Turnpike

(4) Revise signals and interconnect with other signals along Hamburg Turnpike to facilitate improved progression during peak hours

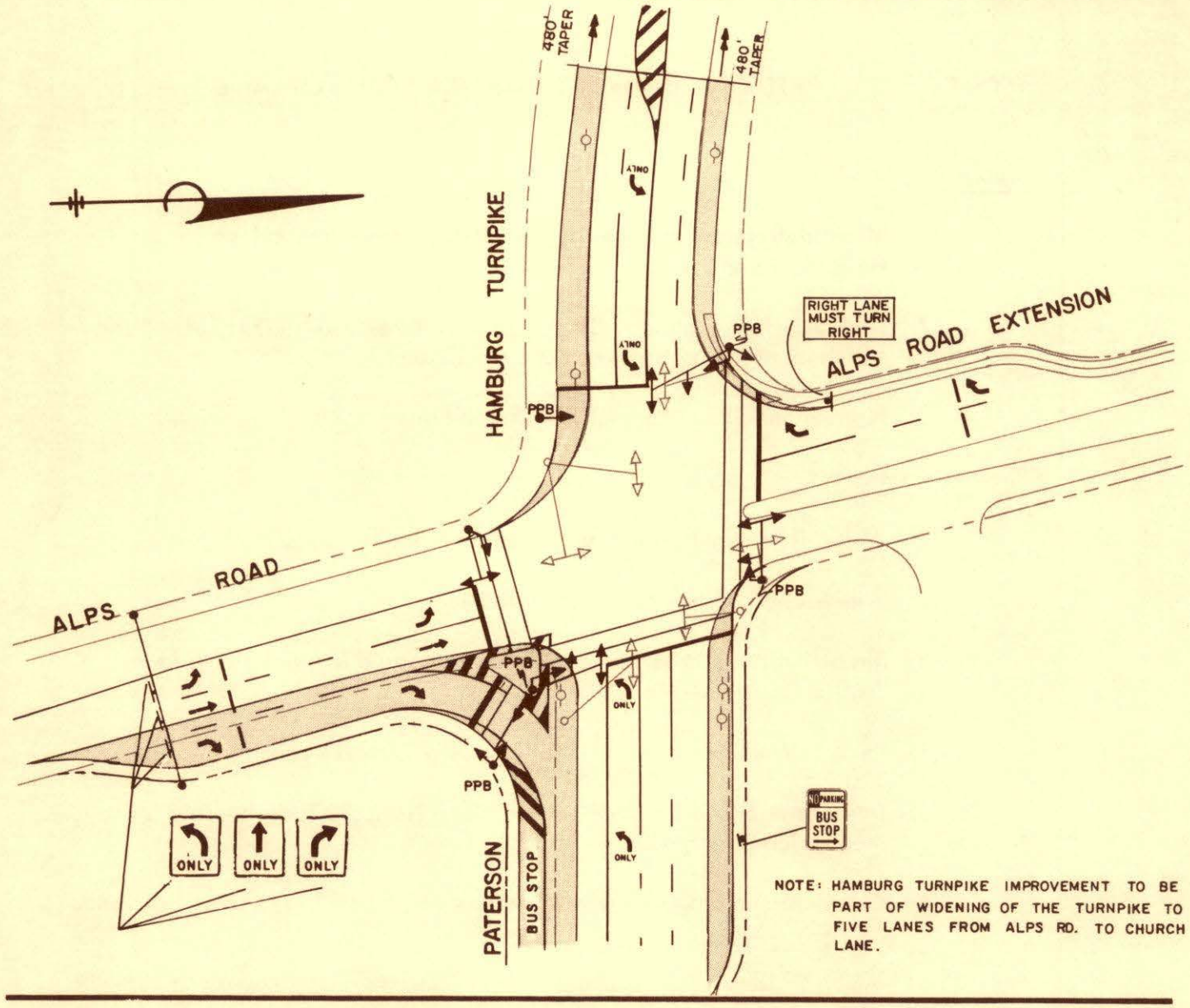
(5) Install bus turnouts

Benefits

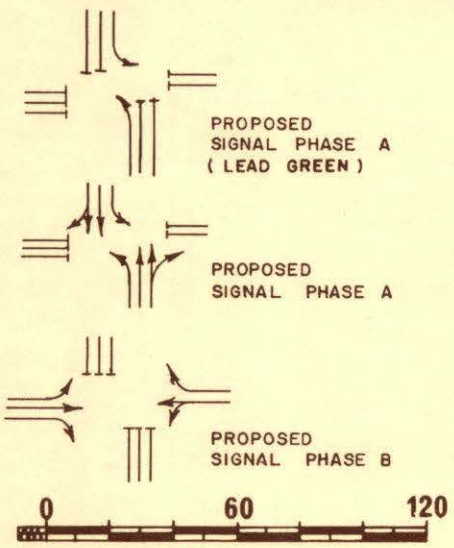
(1) Increased capacity with fewer delays and improved service levels

(2) Reduction of accidents due to provision for left turn storage lanes and recessed bus stop

RICHARD P. BROWNE ASSOCIATES



NOTE: HAMBURG TURNPIKE IMPROVEMENT TO BE PART OF WIDENING OF THE TURNPIKE TO FIVE LANES FROM ALPS RD. TO CHURCH LANE.



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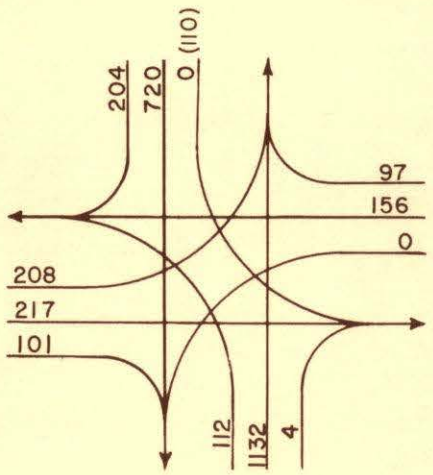
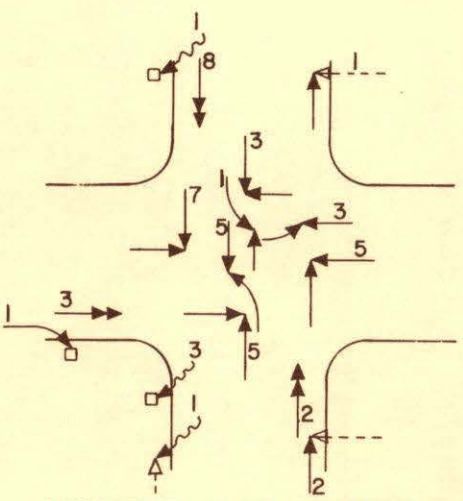


PEAK HOUR VOLUME – 4:30-5:30 P.M.

( ) ESTIMATED VOLUME WHEN ALPS RD. EXIT IS OPENED



ACCIDENT SUMMARY – 3 YR. PERIOD

PROPOSED IMPROVEMENT WY 7

WY - 8 PATERSON-HAMBURG TURNPIKE & CHURCH LANE

Problems

(1) Slight deficiency in capacity, resulting in moderate delays on Hamburg Turnpike

(2) High accident location, 30 accidents in three year period, of which eighteen are same direction collisions

(3) Narrow one-lane approach on Church Lane

Recommendations

(1) Widen Hamburg Turnpike to provide five traffic lanes

(2) Widen Church Lane approach to two lanes

(3) Revise signal installation to conform to revised Manual on Uniform Traffic Control Devices

(4) Revise signal timing to increase Hamburg Turnpike green time

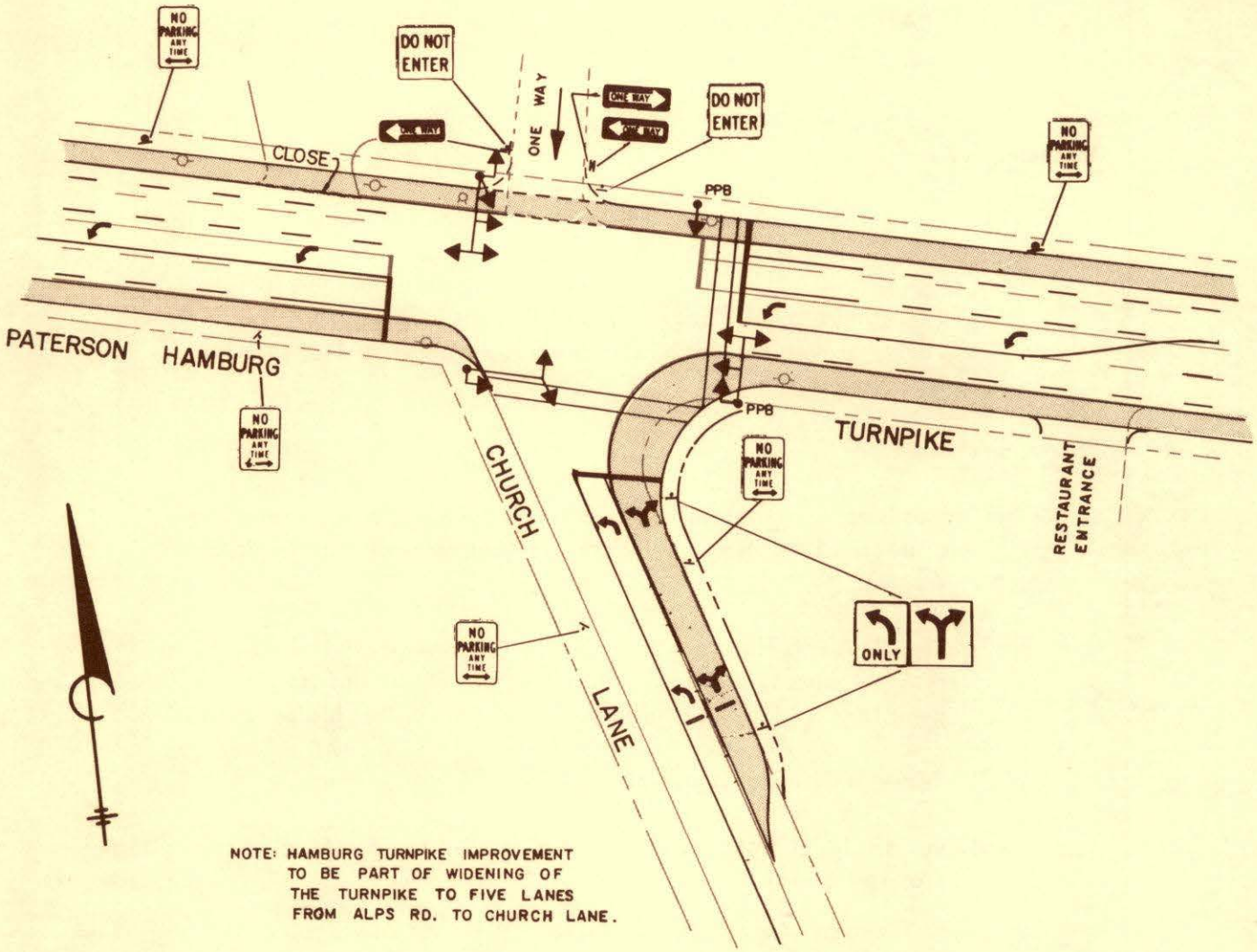
(5) Interconnection with other signals along Hamburg Turnpike to provide progression during peak periods

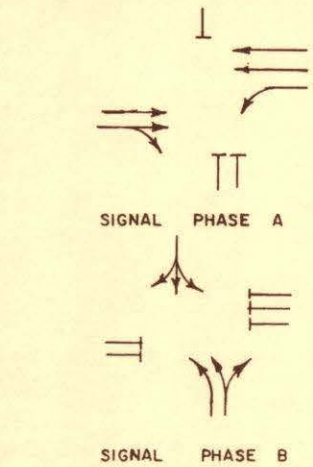
(6) Close entrance to Grange and Library - motorists to use school entrance

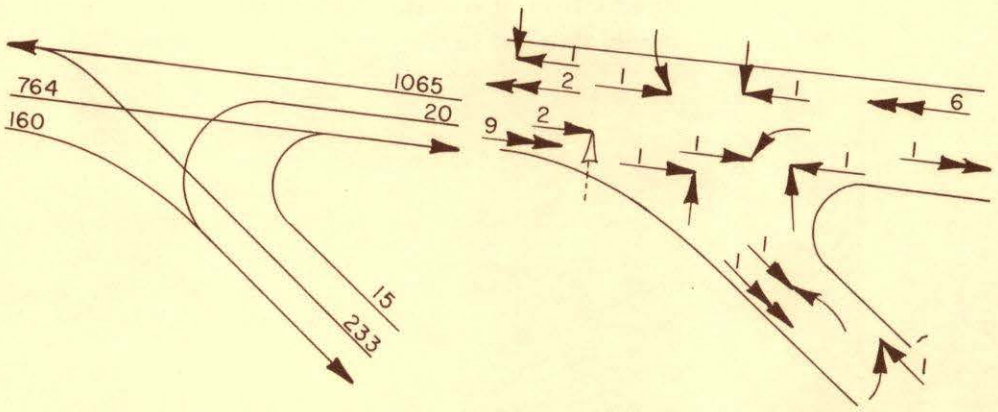
Benefits

(1) Improved capacity, resulting in fewer delays

(2) Reduced accidents due to better quality of travel and signal visibility







PEAK HOUR VOLUME - 4:30-5:30 P.M. ACCIDENT SUMMARY 3YR. PERIOD

0 60 120

SCALE 1" = 60'

PROPOSED IMPROVEMENT WY 8

WY - 9 PATERSON-HAMBURG TURNPIKE AND BERDAN AVENUE-BYRNE COURT

Problems

(1) Left turning movements cause considerable interference with the free flow of through traffic on Hamburg Turnpike

(2) There have been 29 accidents at this intersection in the past three years, eleven of which have been right angle or left turn type collisions

Recommendations

(1) Hamburg Turnpike be widened to six lane width to provide for protected left turn movements and for free right turn in Berdan Avenue

(2) Signals along Hamburg Turnpike be interconnected and timed to provide progressive flow to predominant streams of traffic during peak hours. Traffic is highly directional on this highway

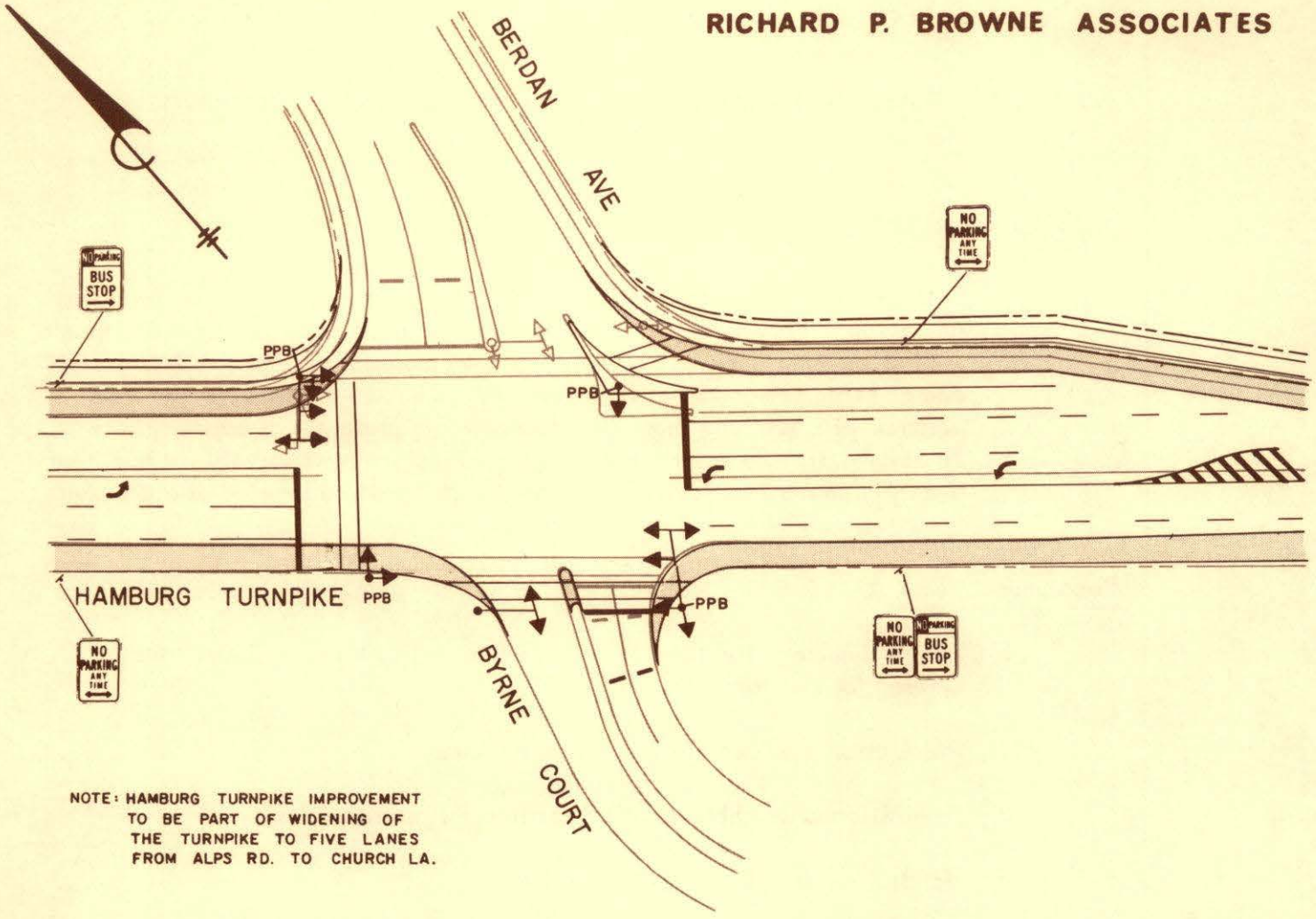
(3) Revise existing channelizing island

(4) Revise signal installation to conform with revised Manual on Uniform Traffic Control Devices

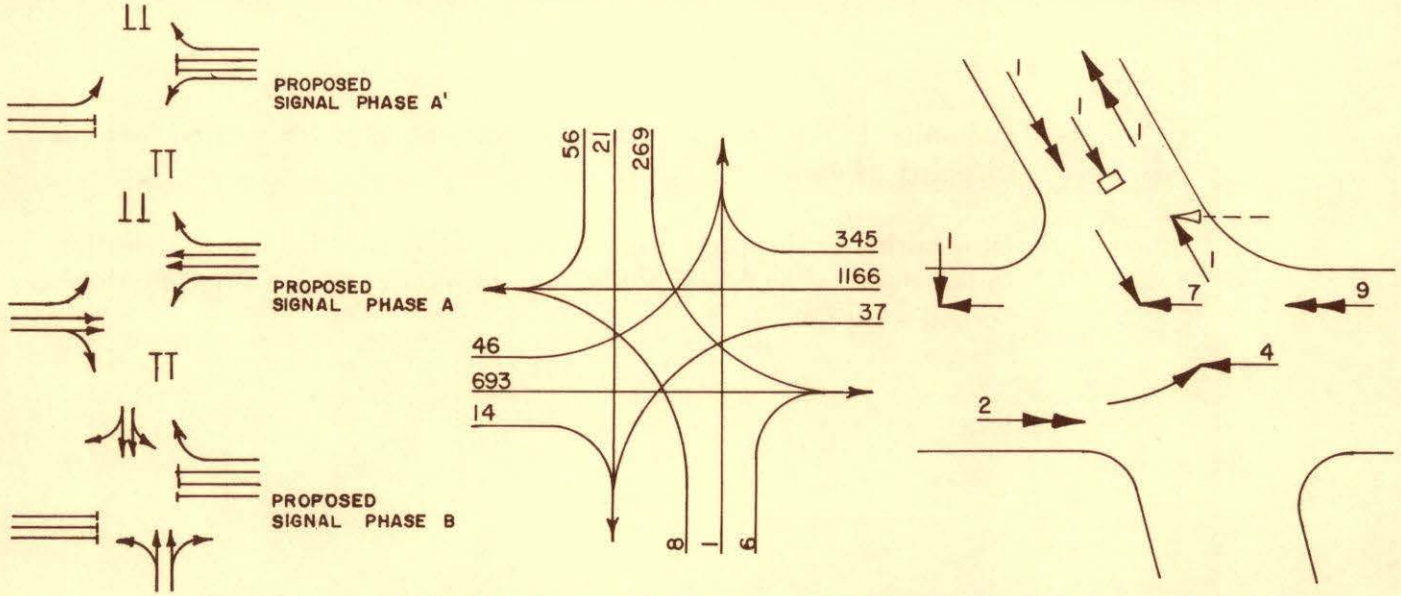
Benefits

(1) Increase flow and level of service for through traffic by eliminating left turn interference

(2) Reduction of accidents because left turning vehicles will be removed from through lanes



NOTE: HAMBURG TURNPIKE IMPROVEMENT TO BE PART OF WIDENING OF THE TURNPIKE TO FIVE LANES FROM ALPS RD. TO CHURCH LA.



PEAK HOUR VOLUME 4:30-5:30 P.M. ACCIDENT SUMMARY 3 YR PERIOD

PROPOSED IMPROVEMENT WY 9

WY - 10 PATERSON-HAMBURG TURNPIKE & PREAKNESS SHOPPING CENTER ENTRANCE

Problems

Left turning traffic onto the Paterson-Hamburg Turnpike from the Preakness and Berdan Shopping Centers will only be allowed to do so at traffic signal controlled intersections. Since there are only two existing traffic signals - one at Berdan Avenue and the other at Alps Road - the increased traffic volumes will overload these signals which are presently at capacity. Therefore, it is necessary to provide a third signal exclusively for this shopping center traffic. This proposed signal will be located at a common entrance/exit of these two shopping centers.

Recommendations

(1) Widen Hamburg Turnpike to provide five traffic lanes. Center lane to be used for left turn traffic

(2) Installation of a semi-traffic-actuated signal

(3) Prohibition of southbound left turns into this entrance/exit

(4) Installation of painted channelization

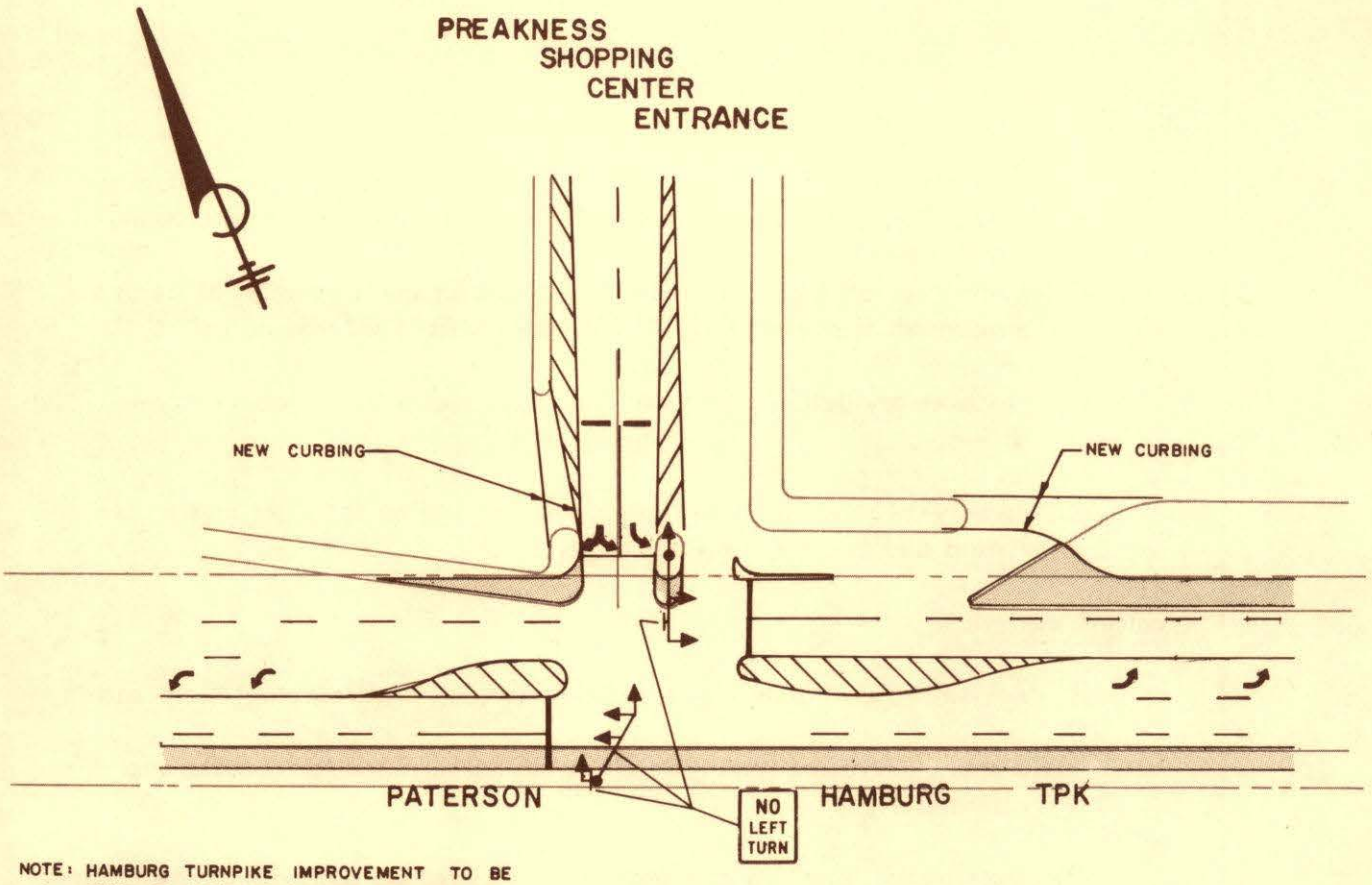
(5) Closing of the shopping center driveways near this entrance/exit

(6) Interconnect with other traffic signals along Paterson-Hamburg Turnpike

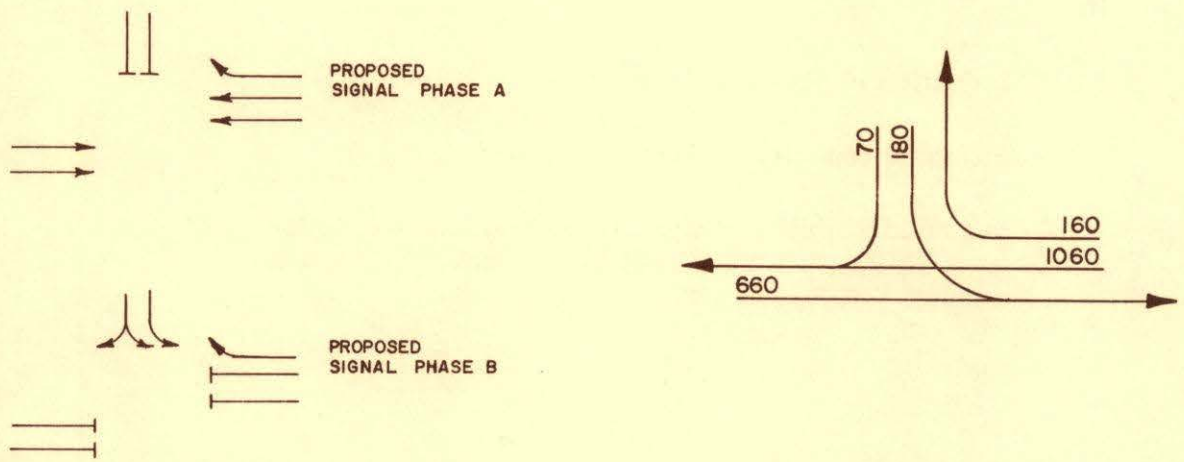
Benefits

(1) Reduction in right angle accidents involving motorists exiting from the shopping centers

(2) Distribution of shopping center traffic to three traffic signals resulting in less delay at each and minimizing of interruption to Paterson-Hamburg Turnpike traffic



NOTE: HAMBURG TURNPIKE IMPROVEMENT TO BE PART OF WIDENING OF THE TURNPIKE TO FIVE LANES FROM ALPS RD. TO CHURCH LA.



0 60 120

SCALE: 1" = 60'

ESTIMATED PEAK HOUR VOLUME 4:30-5:30 P.M.

PROPOSED IMPROVEMENT WY 10

WY - 11 VALLEY ROAD & RATZER ROAD

Problems

(1) Improper signal split - Valley Road has twice as much green time as Ratzer Road, but demand volumes differ by only a small percentage

(2) Exclusive left turn lanes on Ratzer Road for small numbers of turning movements (less than 85 per hour) retards flow of through traffic

(3) Unnecessary delays on Ratzer Road approaches due to above conditions

(4) Twenty-two accidents in three years, including ten right angle collisions and four left turn accidents

Recommendations

(1) Revise signal timing from fixed time to semi-traffic-actuated operation

(2) Remove exclusive lane restrictions on Ratzer Road to increase overall capacity

(3) Install additional signal heads and revise to conform with revised Manual on Uniform Traffic Control Devices

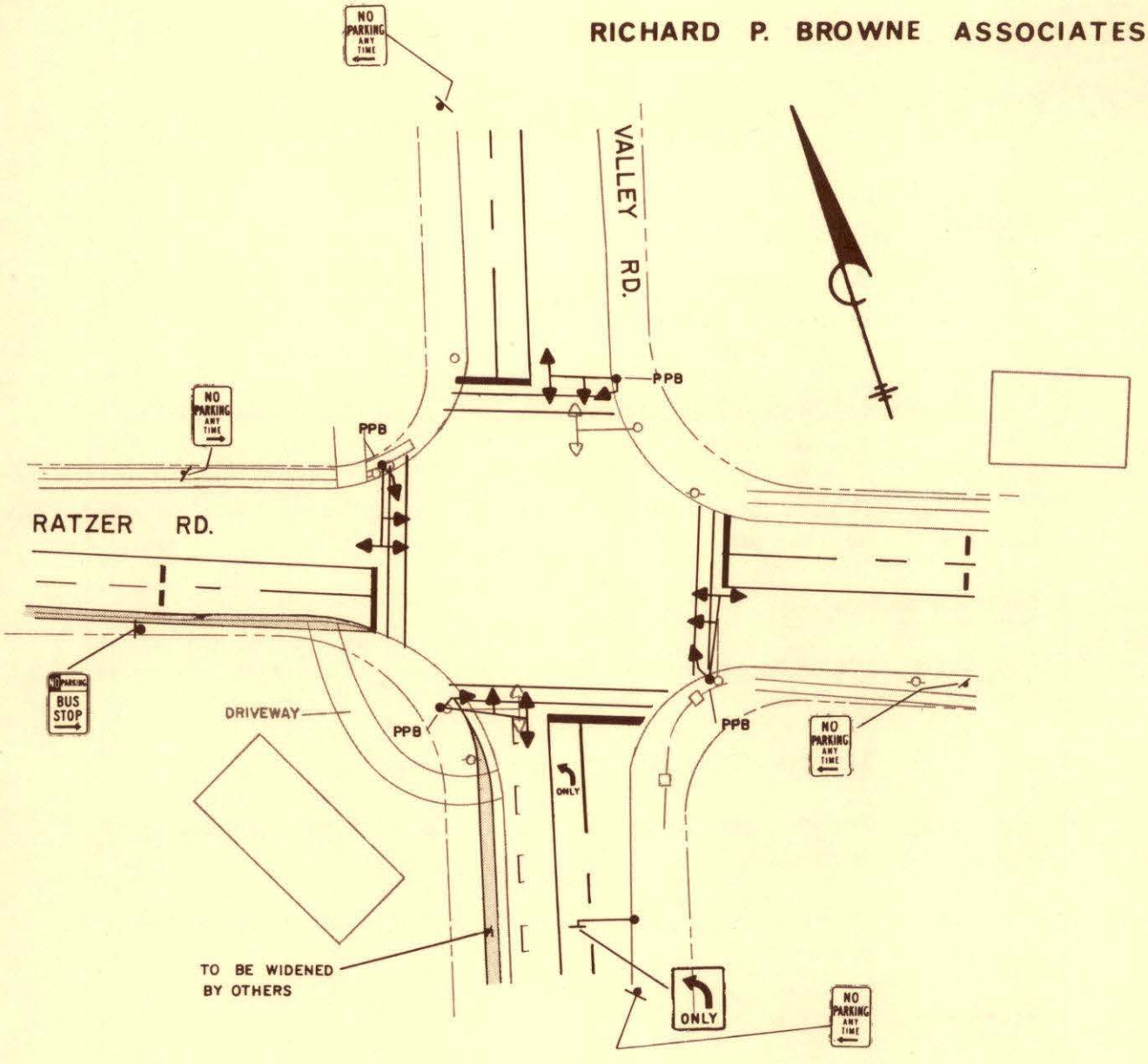
(4) Installation of overhead lane control sign

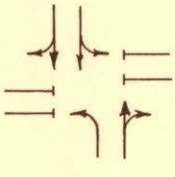
Benefits

(1) Reduction in overall delays

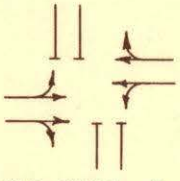
(2) Increased capacity for Ratzer Road traffic

(3) Increased visibility of sign designating lane restriction





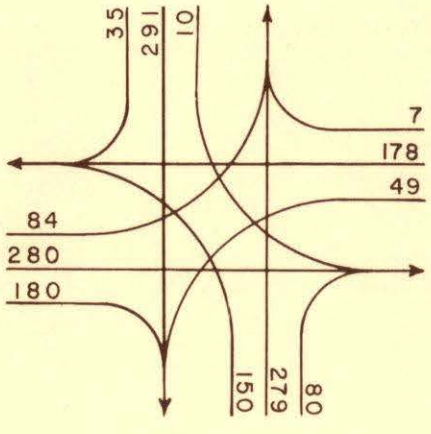
PROPOSED SIGNAL PHASE A



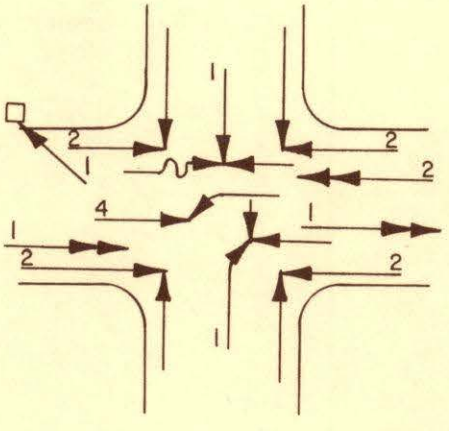
PROPOSED SIGNAL PHASE B

0 60 120

SCALE: 1" = 60'



PEAK HOUR VOLUME 7:30-8:30 A.M.



ACCIDENT SUMMARY - 3 YR. PERIOD

PROPOSED IMPROVEMENT WY11

WY - 12 N.J. ROUTE 23 & PACKANACK LAKE ROAD

Problems

(1) Frequent delays, particularly on Packanack Lake Road easterly approach. This is caused by narrow, one-lane approach with very short green time and high percentage of left turns.

(2) Insufficient capacity on Route 23 in predominant direction of flow during peak hours

(3) High accident location - 49 in three years, about equally divided between same direction and right angle or left turn collisions.

Recommendations

(1) Widen Packanack Lake Road approaches to two-lanes to increase capacity

(2) Increase all red sequence by two seconds

(3) Provide right turn deceleration lane on southerly approach to Route 23

(4) Presence detectors to be installed on Packanack Lake Road easterly approach

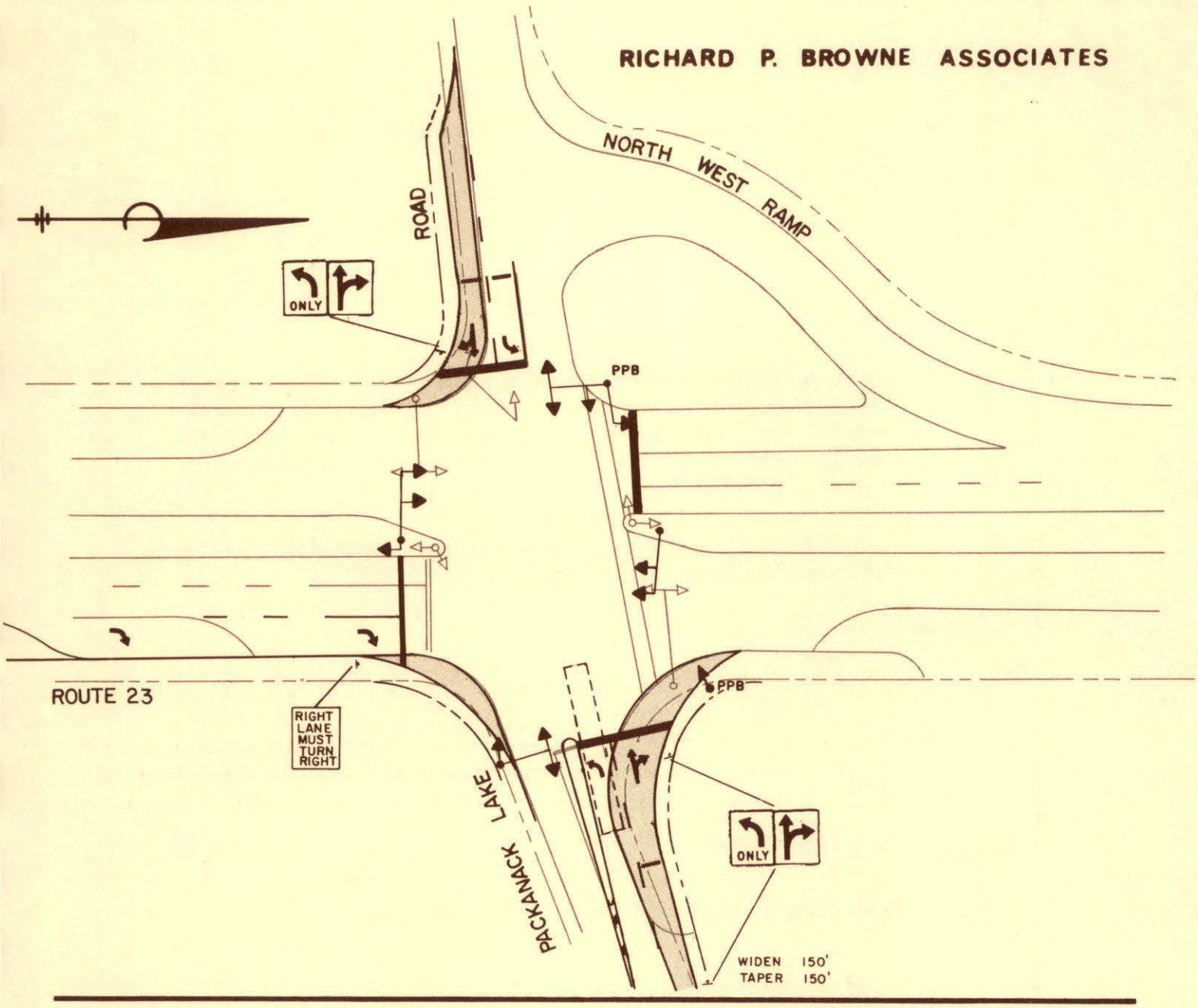
Benefits

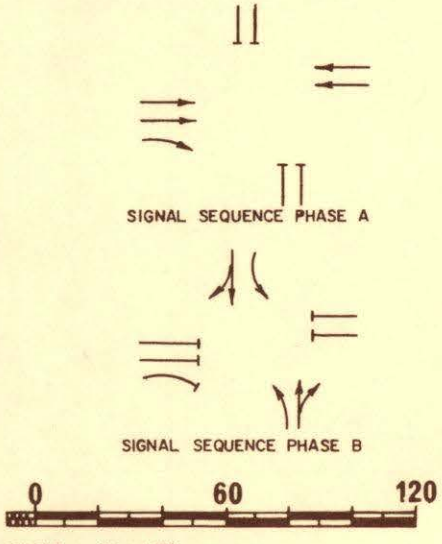
(1) Reduction in delay time on Packanack Lake Road

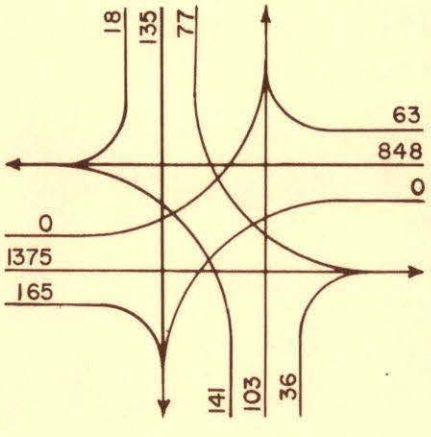
(2) Improved level of service on all approaches

(3) Reduction in right angle type accidents

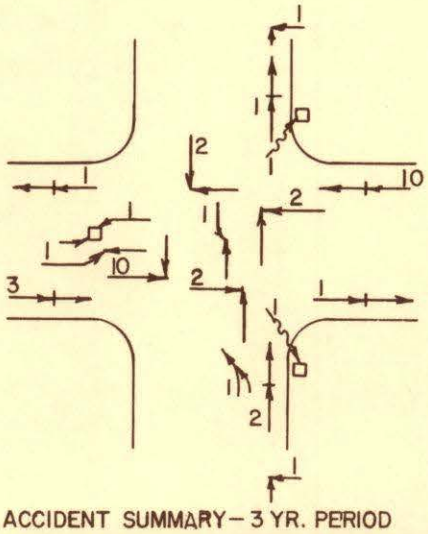
RICHARD P. BROWNE ASSOCIATES







PEAK HOUR VOLUME – 5-6 PM



ACCIDENT SUMMARY – 3 YR. PERIOD

PROPOSED IMPROVEMENT WY 12

9-25

WY - 13 HAMBURG TURNPIKE & CYANAMID DRIVE

Problems

(1) Cyanamid Drive traffic volumes are vey low, except for short periods in the morning, at noon and late afternoon when employees are going to or from work.

(2) Existing semi-traffic-actuated signal has eight second lead green on Hamburg Turnpike westerly approach to accommodate left turns into Cyanamid Drive. This reduces green time for westbound traffic during afternoon peak hours when westbound traffic is greatest and left turns from the opposite direction are very few.

(3) Signal presently operating on fixed time sequence causing unnecessary delay on Paterson-Hamburg Turnpike

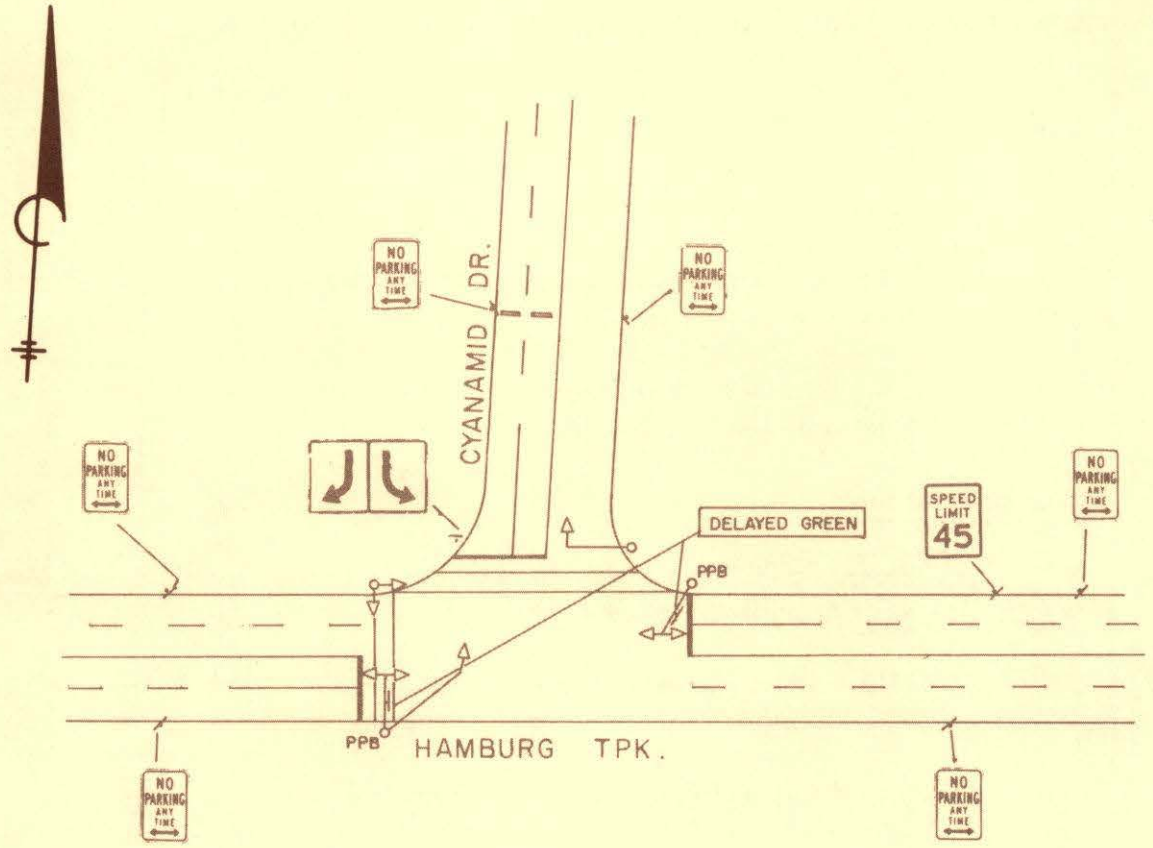
Recommendations

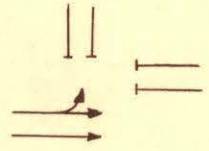
(1) Eight second lead green phase to operate from 7 A.M. to 9 A.M. only

(2) Reinstall semi-traffic actuated operation with minor road green phase to vary between 12 and 21 seconds. Increase side street maximum from 21 to 32 seconds for 3:30 P.M. to 5:30 P.M. period weekdays

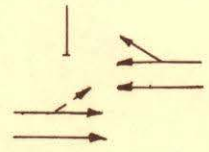
Benefits

(1) Less delay on Hamburg Turnpike during peak hours

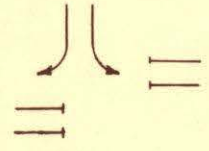




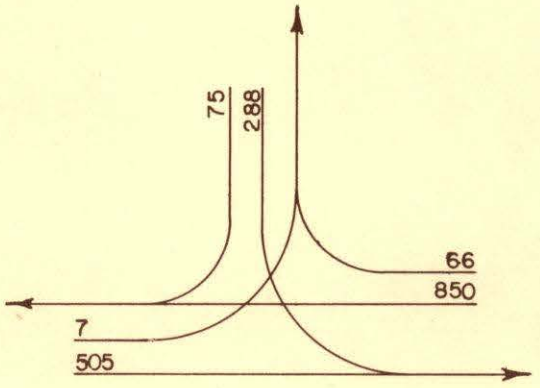
EXISTING SIGNAL PHASE A'



EXISTING SIGNAL PHASE A



EXISTING SIGNAL PHASE B



PEAK HOUR VOLUME 4:30-5:30 P.M.

LESS THAN 15 ACCIDENTS

ACCIDENT SUMMARY 3 YR PERIOD

0 60 120

Scale : 1" = 60'

PROPOSED IMPROVEMENT WY 13

WY - 14 N.J. ROUTE 23 & WILLOWBROOK ENTRANCES

Problems

(1) Long delays at signals for Route 23 southbound traffic

(2) Through traffic in southbound right lane interferes with "Free" right turn movement at the north signal

(3) Lane markings confusing - new markings are wearing off, and old lines are bleeding through

Recommendations

(1) Provide additional traffic lane on Route 23 for Free Right Turn Movement at north entrance

(2) Offset signals to provide progression for southbound Route 23 traffic, which has less green time than northbound traffic

(3) Install full traffic-actuated signal control

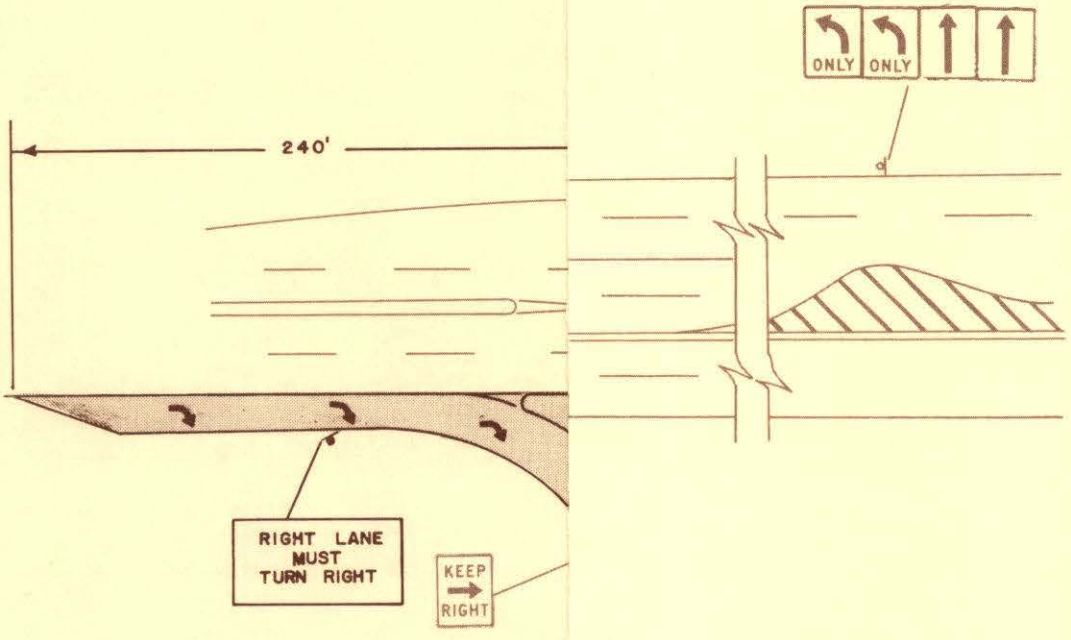
(4) Remove old lane lines

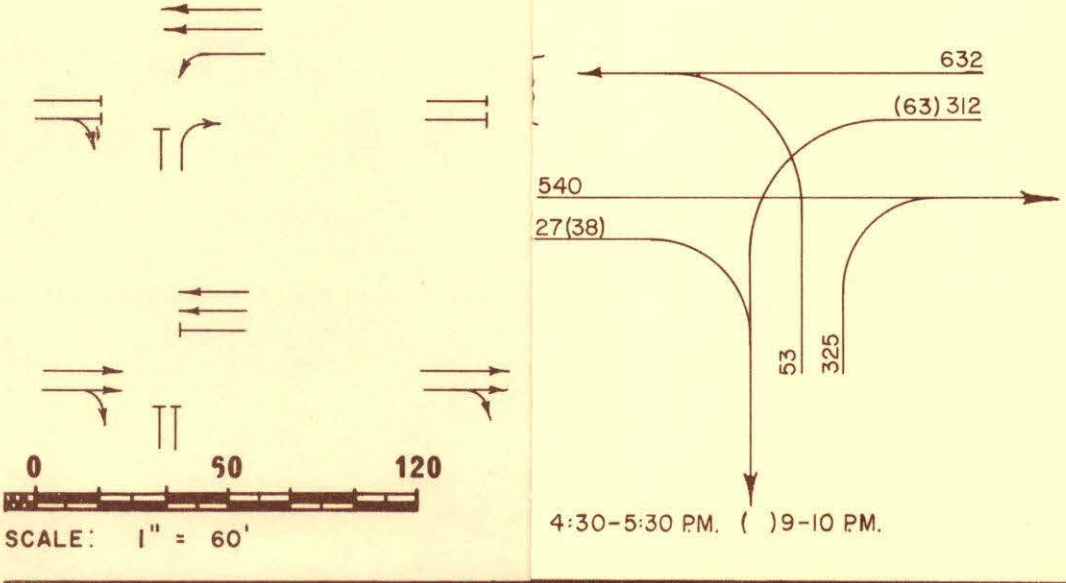
Benefits

(1) Increased capacity for Route 23 southbound traffic

(2) Reduce delay time for all traffic

(3) Less confusion for drivers





OPOSED IMPROVEMENT WY 14

WY - 15 PATERSON-HAMBURG TURNPIKE & BLACK OAK RIDGE ROAD

Problems

(1) High delay intersection, particularly for vehicles entering Hamburg Turnpike from Black Oak Ridge Road

(2) One lane approach on Black Oak Ridge Road severely limits capacity

(3) High accident location - 36 collisions in three years, including 20 same direction accidents

(4) Small shopping center on easterly side of Hamburg Turnpike lacks adequate entrances and exist, and has insufficient parking facilities. Vehicles entering or leaving Hamburg Turnpike must go very slowly to make turns

(5) Inadequate right turn lane for southbound traffic entering Black Oak Ridge Road

Recommendations

(1) Widen Black Oak Ridge Road approach to two lanes

(2) Lengthen and widen right turn lane on Hamburg Turnpike north of intersection; widen Turnpike on both approaches

(3) Install one common exit which is signal controlled

(4) Upgrade traffic signal installation to increase visibility

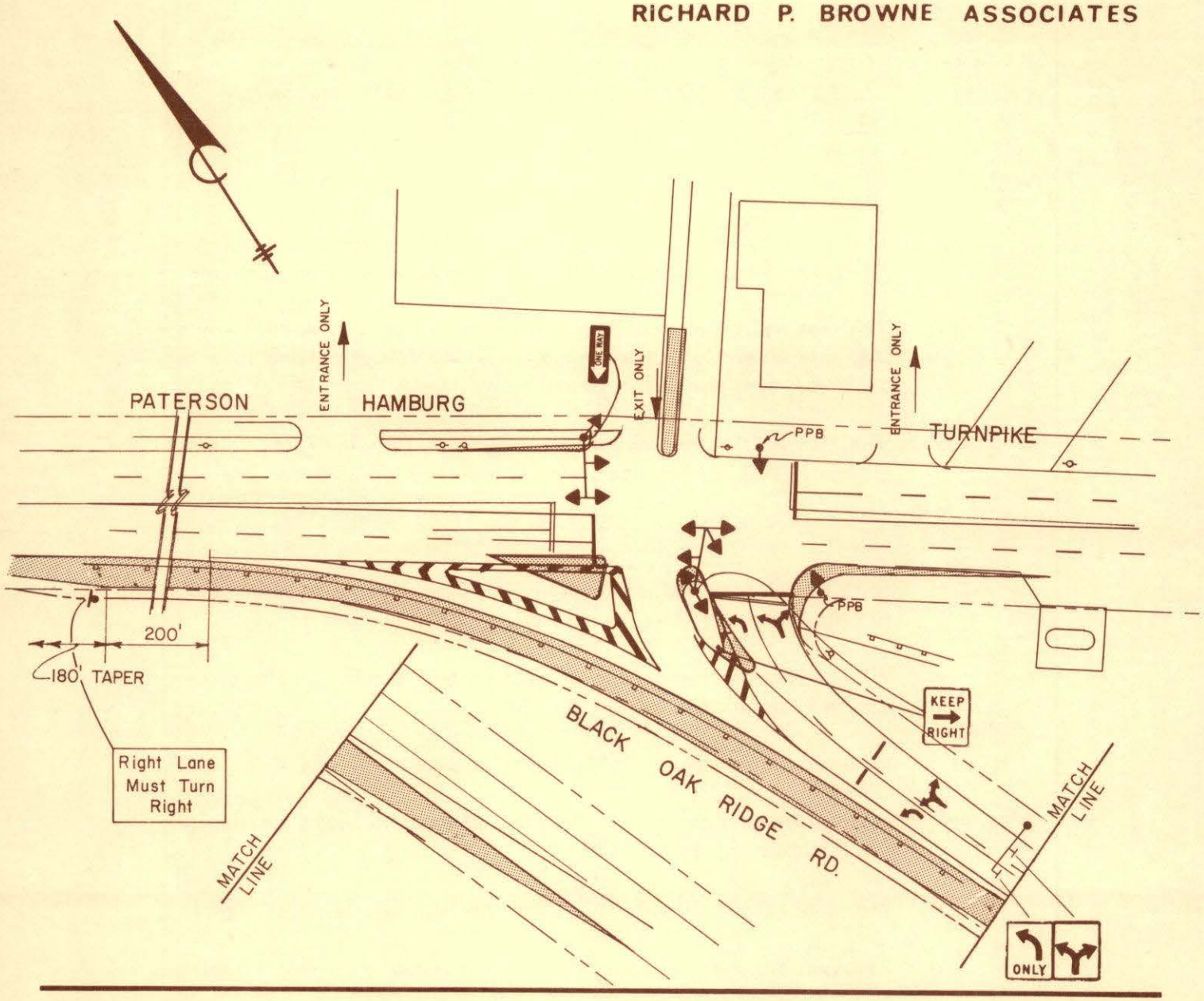
Benefits

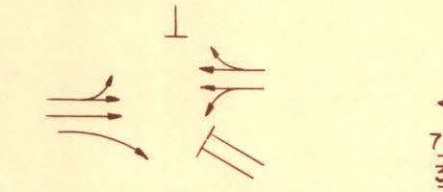
(1) Increase capacity and reduce delays on Black Oak Ridge Road

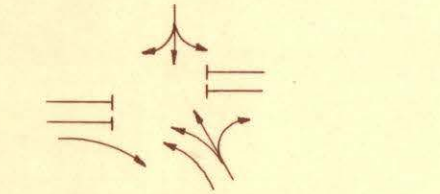
(2) "Free" right turn at all times from Hamburg Turnpike northerly approach

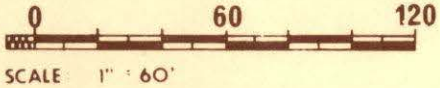
(3) Improved ingress and egress to shopping center parking

(4) Reduction of accidents resulting from improved signal layout and minor widening

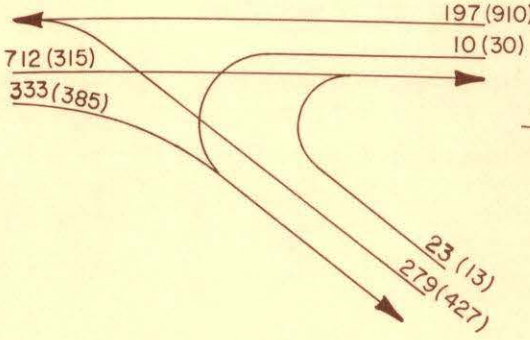




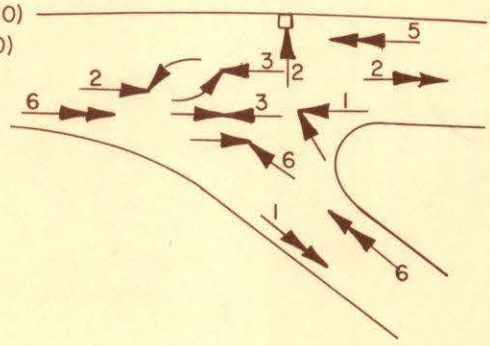




SCALE 1" = 60'



PEAK HOUR VOLUME - 7:30 - 8:30 A.M.
(4:30 - 5:30 P.M.)



ACCIDENT SUMMARY 3YR. PERIOD

PROPOSED IMPROVEMENT WY15

WY - 16 PATERSON-HAMBURG TURNPIKE & DAWES HIGHWAY

Problems

(1) High accident locations, 39 collisions in three years, including thirteen right angle, three left turn and two pedestrian accidents

(2) Vehicles trying to enter Hamburg Turnpike from Dawes Highway are stop sign controlled, experience very long delays waiting to enter an almost constant traffic stream

(3) Vehicles waiting to turn left from Hamburg Turnpike into Dawes Highway (200 in peak hour) are exposed to high accident risk

Recommendations

(1) Install semi-actuated traffic signal to allow Dawes Highway traffic to enter Hamburg Turnpike safely

(2) Widen Hamburg Turnpike to provide protected left turn slot on southerly approach

(3) Widen bridge on Paterson-Hamburg Turnpike

(4) Widen Dawes Highway approach to two lanes to insure maximum utilization of green signal phase

(5) Interconnect signal with other Paterson-Hamburg Turnpike signals

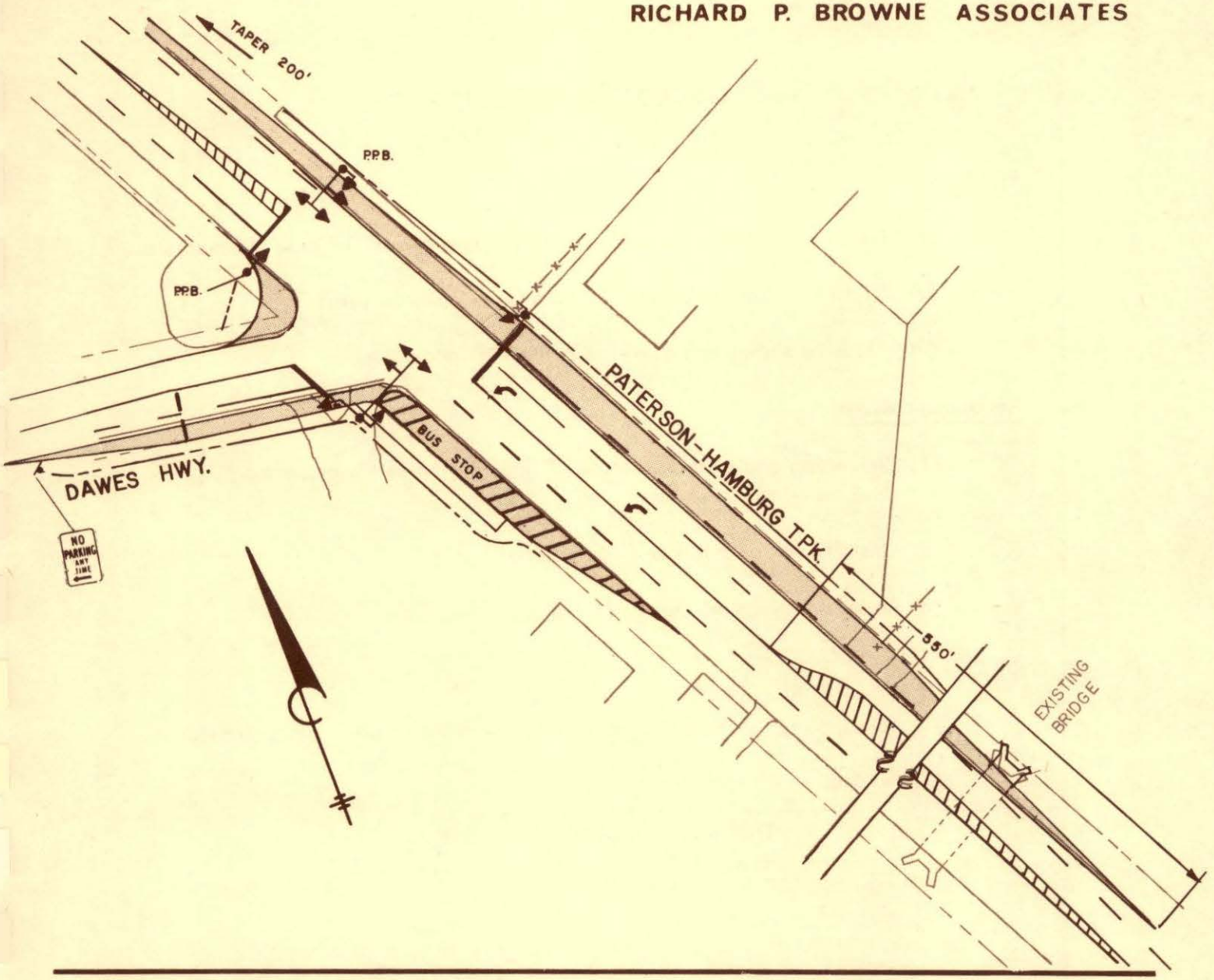
(6) Recessed bus stop to be constructed on Paterson-Hamburg Turnpike

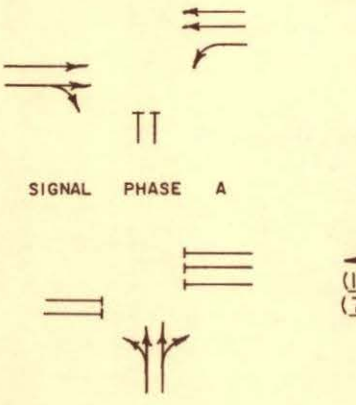
Benefits

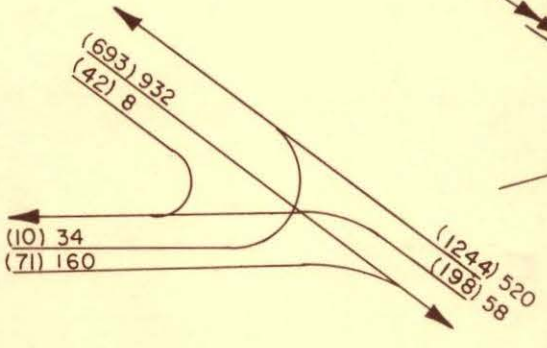
(1) Substantial reduction in accidents

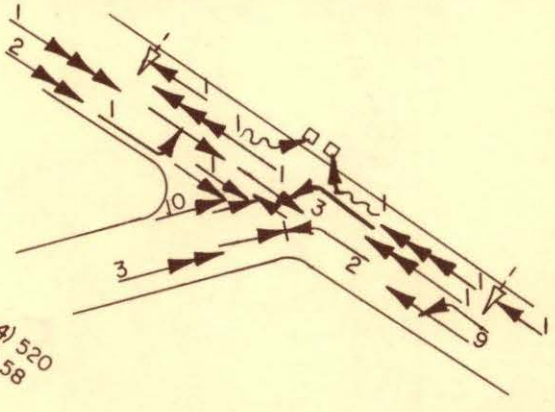
(2) Reduction in delay on Dawes Highway

(3) Smoother flow of through traffic on Hamburg Turnpike









0 60 120

SCALE 1" = 60'

7:30-8:30 A.M. PEAK HOUR VOLUME -(4:30-5:30 P.M.)

ACCIDENT SUMMARY - 3 YR. PERIOD

PROPOSED IMPROVEMENT WY16

WY - 17 ALPS ROAD & RATZER ROAD

Problems

(1) Poor physical layout of intersection - two offset "T" type intersection

(2) High-accident location - 21 accidents in three years

(3) Flashing signal and stop sign control is inadequate

Recommendations

(1) Widening and channelization of intersection to minimize merging and weaving maneuvers

(2) Installation of a full traffic actuated signal

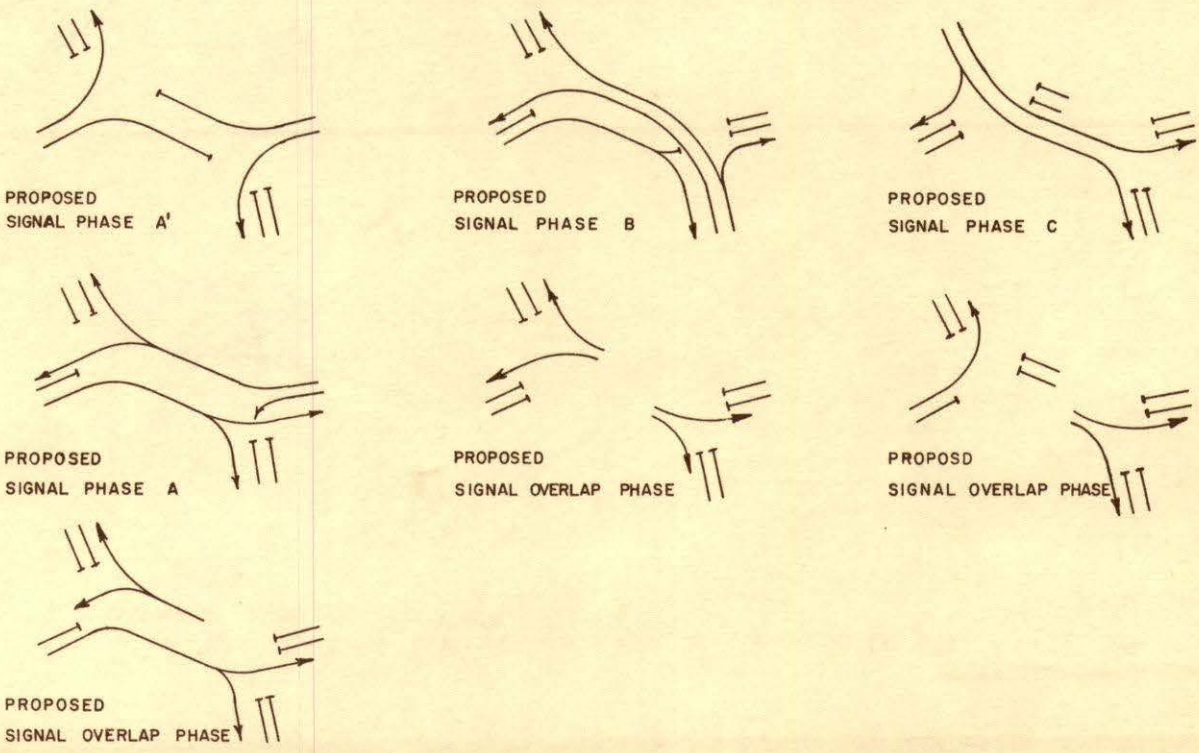
(3) Improve lane markings and signing

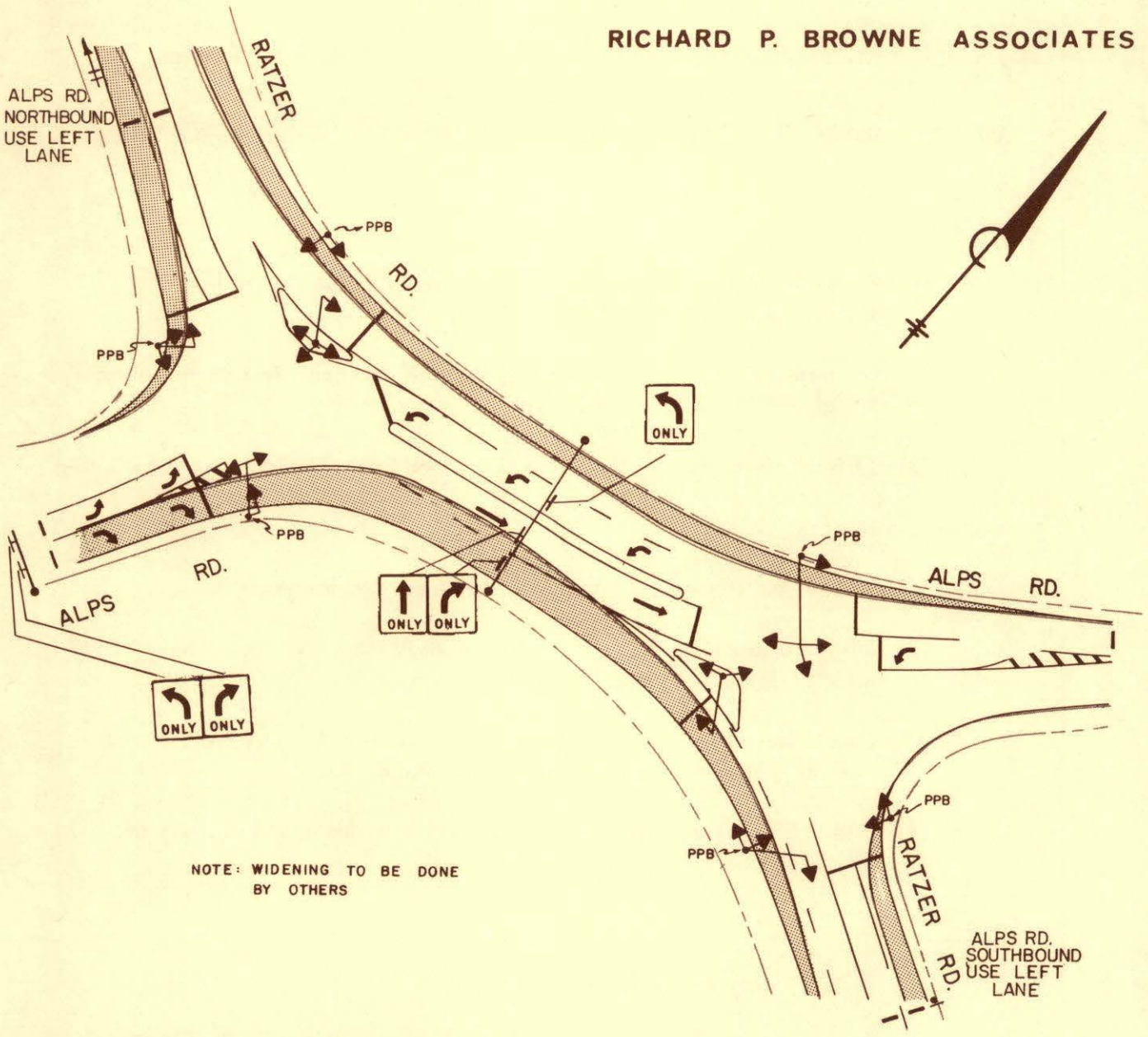
Benefits

(1) Reduced congestion and confusion due to installation of traffic signal

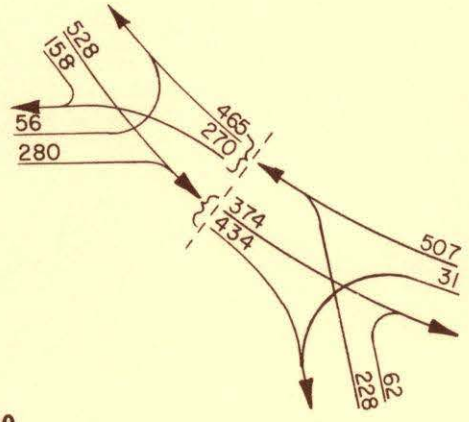
(2) Reduction of accidents and delay

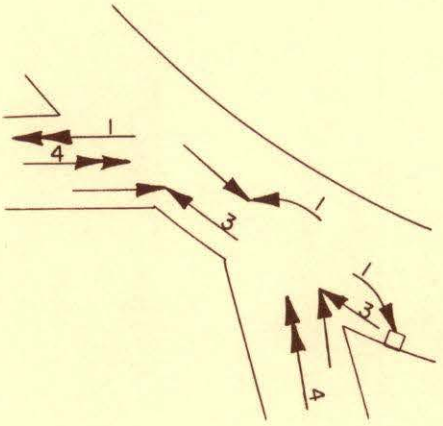
PROPOSED SIGNAL PHASING





FULL ACTUATION
3 PHASE
WITH LEAD
GREEN SEQUENCE





0 60 120

SCALE 1" = 60'

PEAK HOUR VOLUME 7:30-8:30 A.M. ACCIDENT SUMMARY - 3 YR. PERIOD

PROPOSED IMPROVEMENT WY 17

WY - 18 BLACK OAK RIDGE ROAD & JACKSON AVENUE-LONGPORT ROAD

Problems

(1) Occasional delays at stop sign at Jackson Avenue due to heavy traffic volumes on Black Oak Ridge Road

(2) Moderately high accident rate - nineteen accidents in past three years, six of which are right angle type

(3) Offset intersection - Jackson Avenue and Longport Road are not aligned

Recommendations

(1) Widen Jackson Avenue approach to permit two lane operation

(2) Relocate junction of Longport Road with Black Oak Ridge Road to line up with Jackson Avenue, thus eliminating offset

(3) Install semi-traffic actuated signal to provide safe entry from Jackson Avenue-Longport Road onto Black Oak Ridge Road

(4) Widen Black Oak Ridge Road to four-lane width in the vicinity of intersection

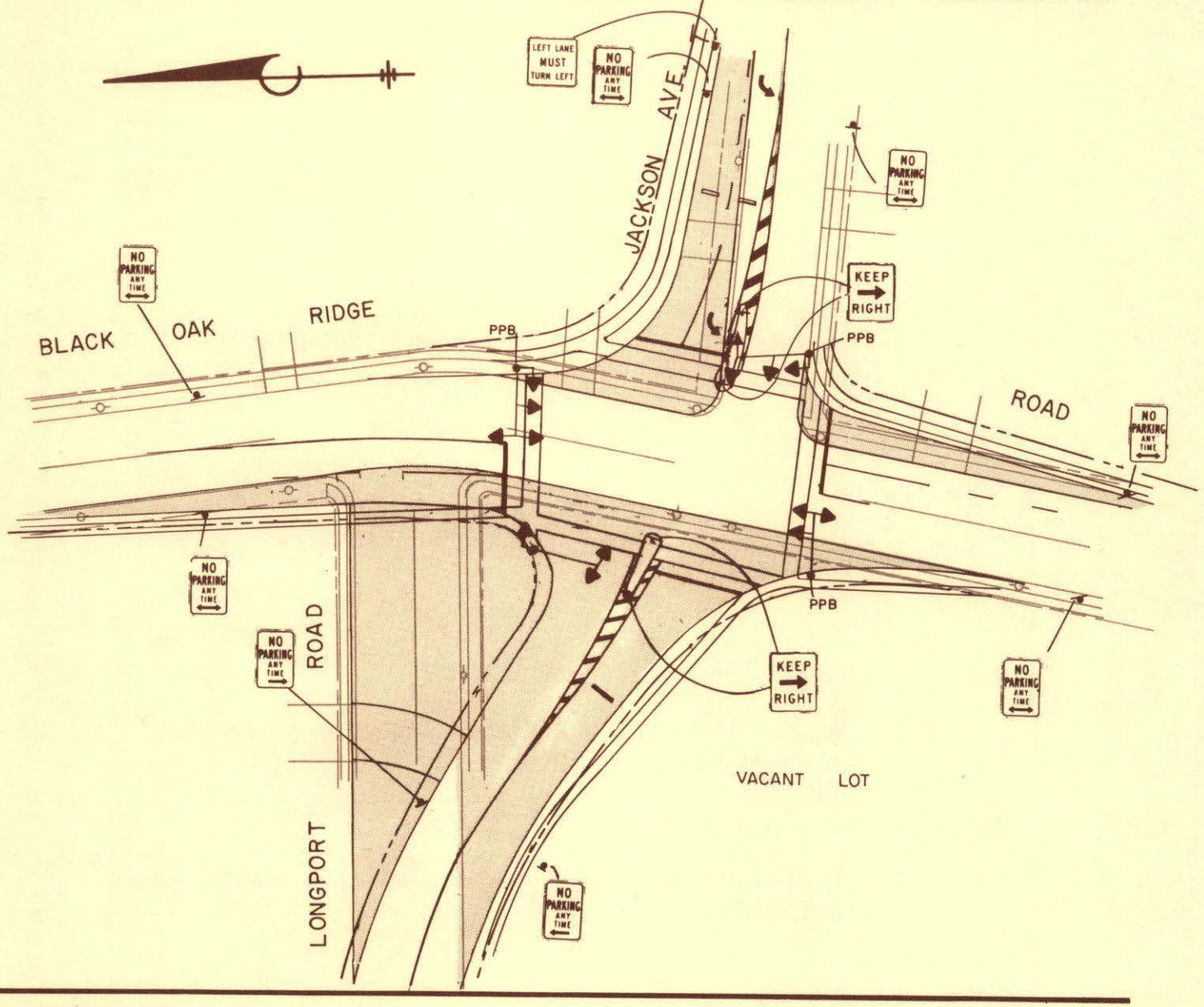
Benefits

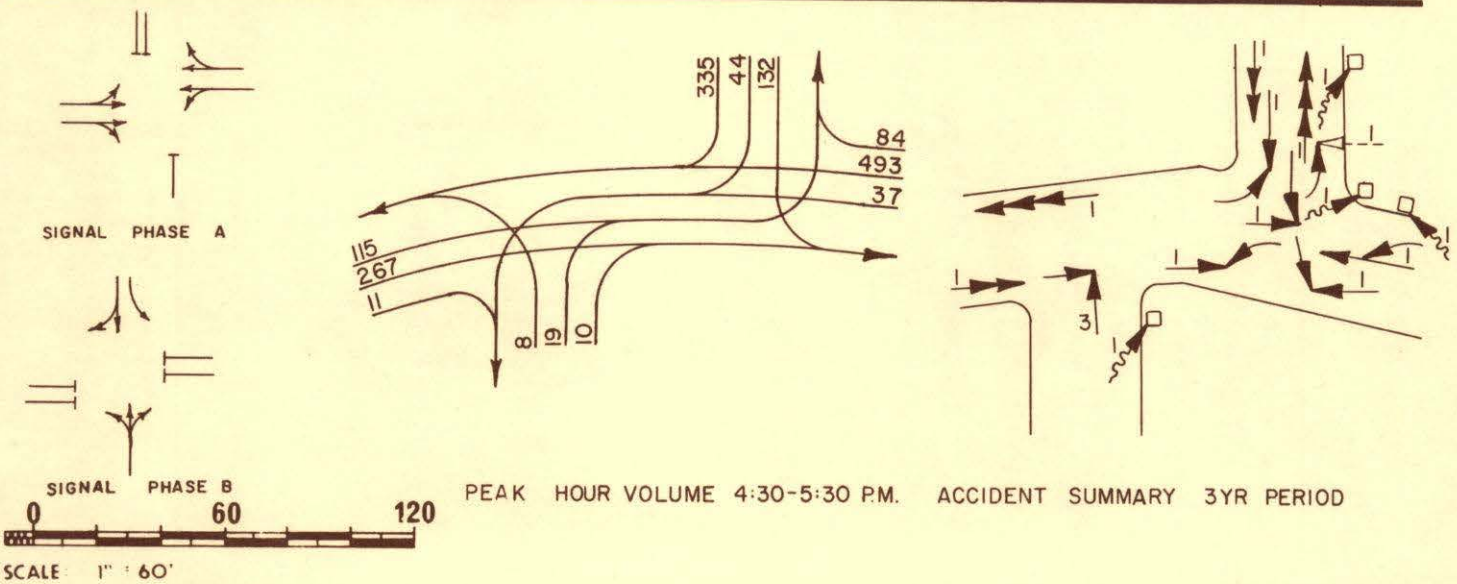
(1) Reduce delay for Jackson Avenue traffic

(2) Reduce accidents

(3) Increased capacity to accomodate future traffic volumes

RICHARD P. BROWNE ASSOCIATES





PEAK HOUR VOLUME 4:30-5:30 P.M. ACCIDENT SUMMARY 3YR PERIOD

PROPOSED IMPROVEMENTWY 18

WY - 19 ALPS ROAD & FRENCH HILL ROAD

Problems

(1) Y - type intersection with major traffic flow from Alps Road to French Hill Road

(2) Yield sign on Alps Road southwesterly approach is not consistently obeyed and angle of intersection makes it difficult to see vehicles approaching from French Hill Road

(3) Moderately high accident experience - 14 in three years

Recommendations

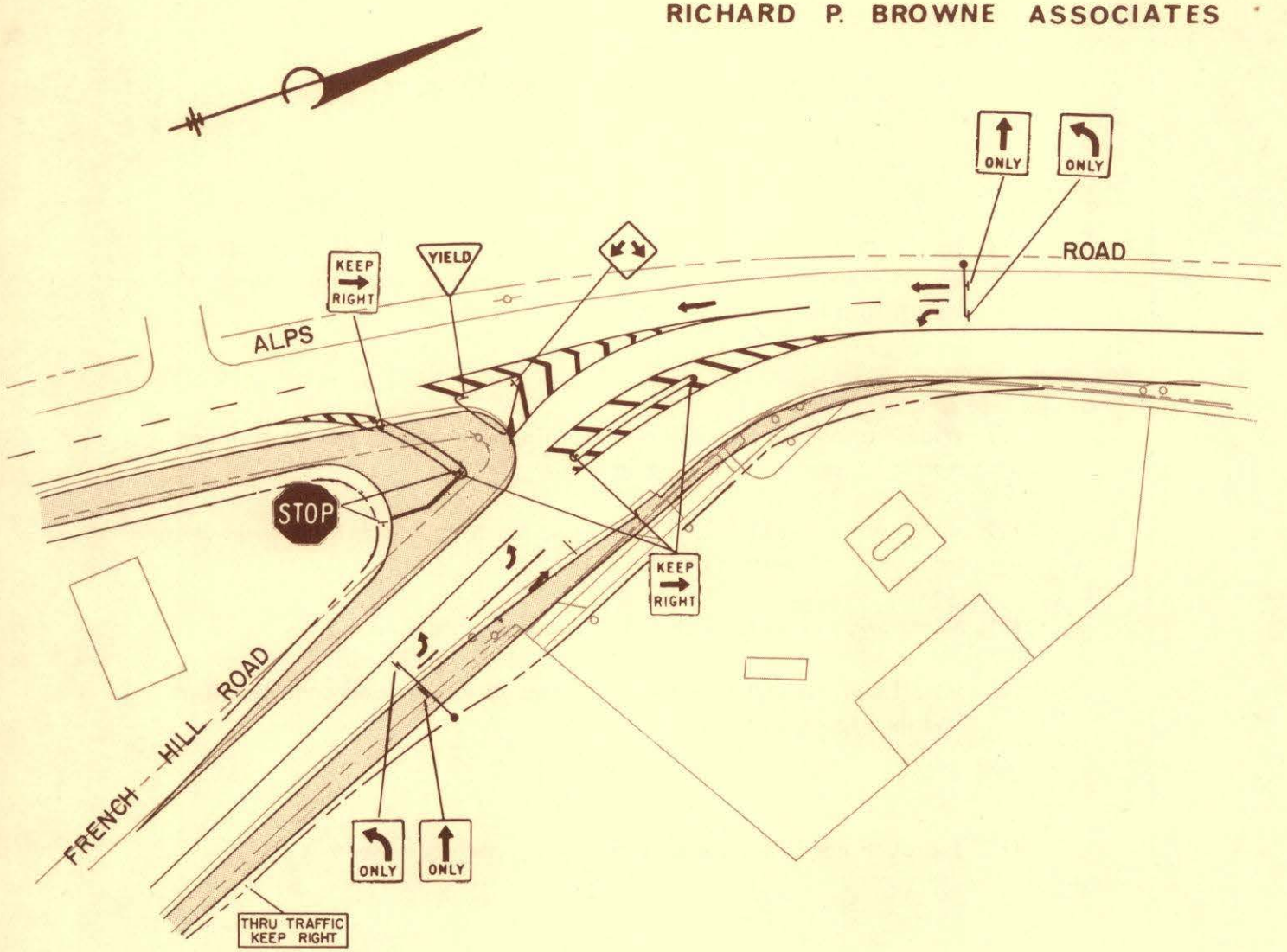
(1) Widen Alps Road south approach and French Hill Road east approach

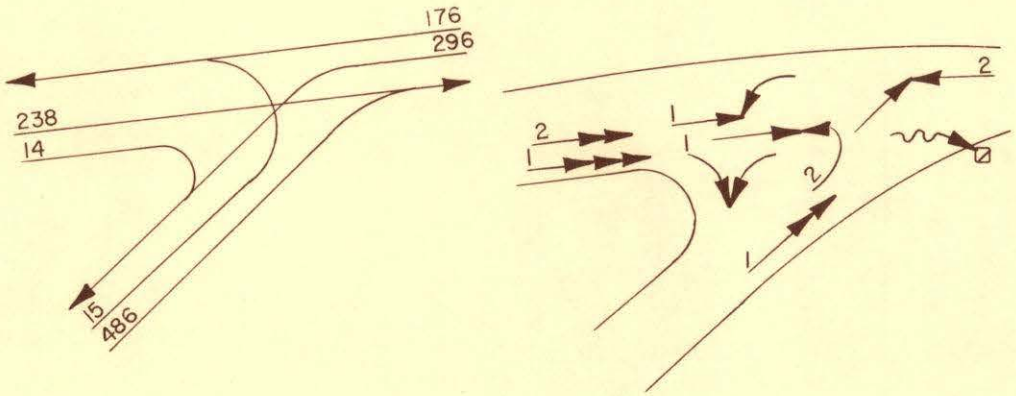
(2) Install channelization to positively guide various traffic flows through intersection

(3) Replace yield sign on Alps Road with STOP sign at location providing improved visibility

Benefits

(1) Traffic will be more positively controlled with a resulting decrease in accidents





0 60 120

SCALE 1" = 60'

PEAK HOUR VOLUME – 4:30-5:30 P.M.

ACCIDENT SUMMARY – 3 YR PERIOD

PROPOSED IMPROVEMENT WY19

WY - 20 FRENCH HILL ROAD & PARISH DRIVE

Problems

(1) Traffic turning left onto Parish Drive from French Hill Road interferes with northbound through traffic. Problem will increase with prohibition of left turn at French Hill Road and Alps Road

Recommendations

(1) Widening of French Hill Road south approach to accomodate four traffic lanes and improve alignment

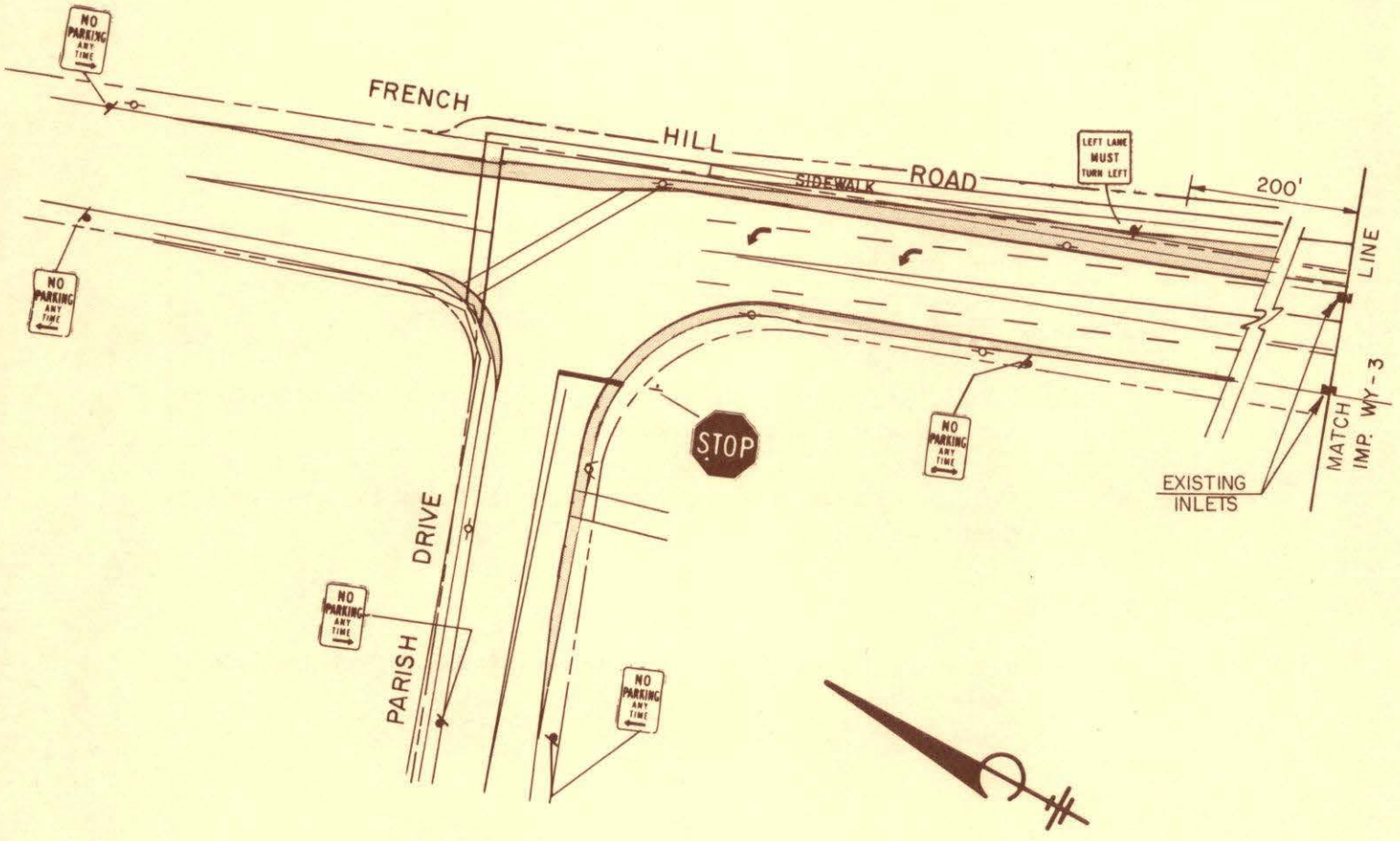
(2) Minor widening of French Hill Road north approach to provide smooth transition in pavement width

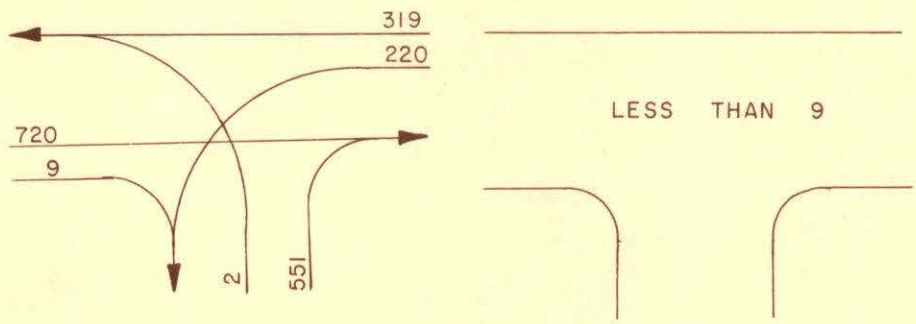
(3) Minor widening of Parish Drive approach

(4) Install signing and pavement markings to show clearly the left turn and thru lanes on French Hill Road

Benefit

(1) Improved northbound traffic flow on French Hill Road





0 60 120

SCALE 1" = 60'

PEAK HOUR VOLUMES – 7:30 – 8:30 A.M.

ACCIDENT SUMMARY – 3 YR. PERIOD

PROPOSED IMPROVEMENT WY20

WY - 21 PATERSON-HAMBURG TURNPIKE & COLLEGE ROAD

Problems

(1) Difficult to enter Hamburg Turnpike due to heavy volumes of traffic.

(2) College Road traffic expected to increase rapidly due to growth of Paterson State College and the opening of Paterson General Hospital now being constructed.

Recommendations

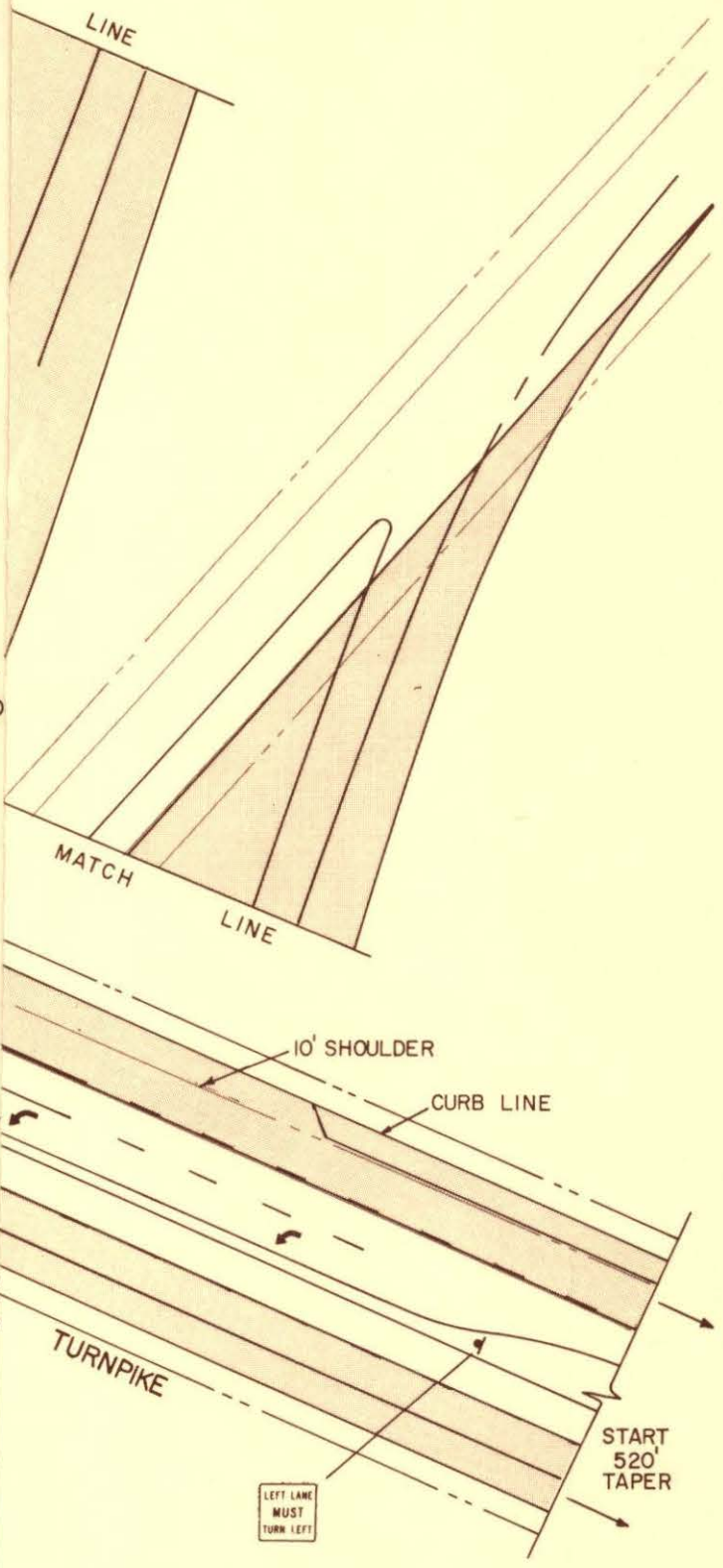
(1) Installation of semi-traffic actuated signals, to be interconnected with the other Hamburg Turnpike signals.

(2) Increase curb radius on southeast corner to 50 feet to permit easier right turn.

Benefits

(1) Reduction of delays for vehicles entering Hamburg Turnpike from College Road.

RICHARD P. BROWNE ASSOCIATES



NOTE: COLLEGE ROAD, EAST BELT
AND DRIVEWAY TO BE CO
BY OTHERS.

PHASE A

PROPOSED S

0 60 120

SCALE. 1"= 60'

OPOSED IMPROVEMENT WY21

9-43

WY - 22 WIDENING OF VALLEY ROAD FROM FRENCH HILL ROAD TO PREAKNESS AVENUE AND FROM AUGUSTA DRIVE TO RATZER ROAD

Problem

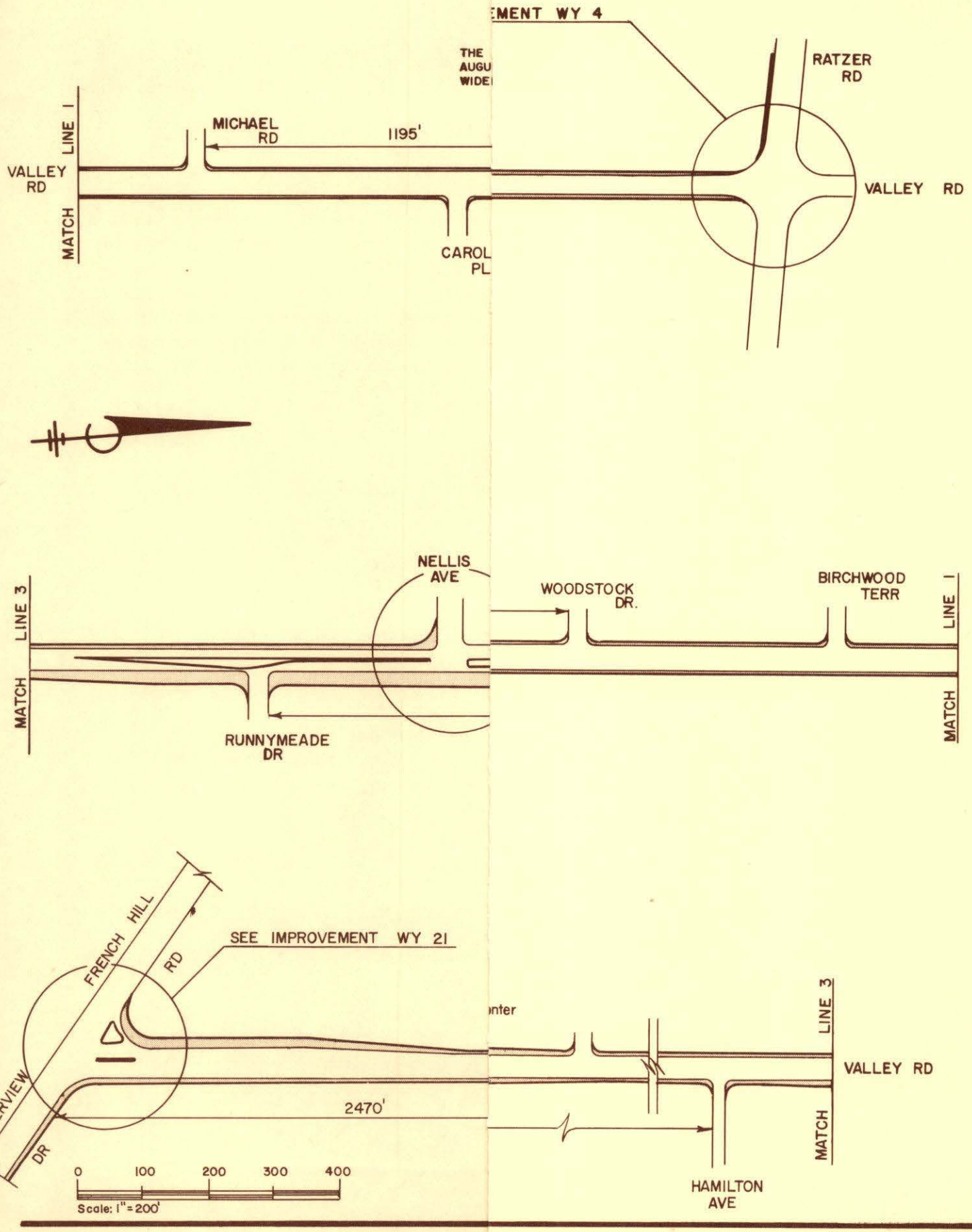
Unsatisfactory level of service during peak hours. Level of service is presently "D" based on travel speeds and the existing volume to capacity ratio

Recommendation

Widen Valley Road to minimum of four eleven foot lanes throughout

Benefit

Higher travel speeds with reduced congestion



POSED IMPROVEMENT WY 22

WY - 23 VALLEY ROAD AND PREAKNESS AVENUE - NELLIS DRIVE

Problem

A new street opening to the town center complex containing the high school and various municipal buildings will be constructed at the Valley Road and Preakness Avenue intersection. A one-way system will be instituted around this complex with additional access to Valley Road at Nellis Drive. All present exits from the town center complex will be closed and all traffic will exit via the new street opening and at Nellis Drive. It will be necessary to revise the present traffic signal installation at Valley Road and Preakness Avenue to accommodate the increased traffic and also to install a signal to control traffic at Nellis Drive.

Recommendations

(1) Major widening of Valley Road to include a median between Preakness Avenue and Nellis Drive

(2) Revision of the traffic signal at Preakness Avenue to include a separate left turn phase for Valley Road traffic

(3) Installation of semi-traffic actuated signal at Nellis Drive

(4) Installation of appropriate regulatory signs and pavement markings

(5) Installation of overhead lane control signs

(6) Installation of vehicle detectors and pedestrian push buttons as indicated

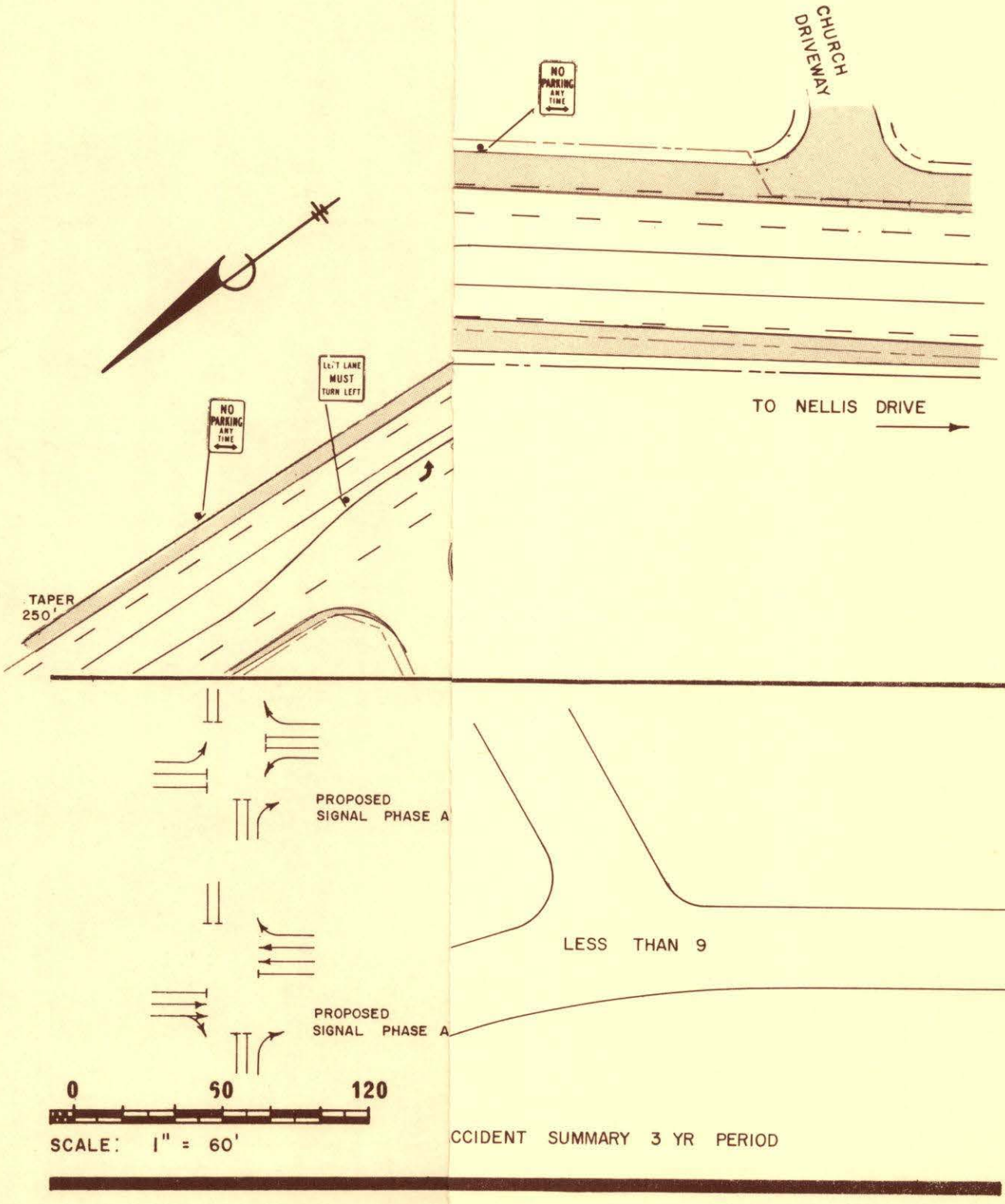
Benefits

(1) Improved traffic flow along Valley Road in the vicinity of Preakness Avenue and Nellis Drive

(2) Reduction of accidents in this area

(3) Traffic signal control of traffic entering Valley Road

RICHARD P. BROWNE ASSOCIATES

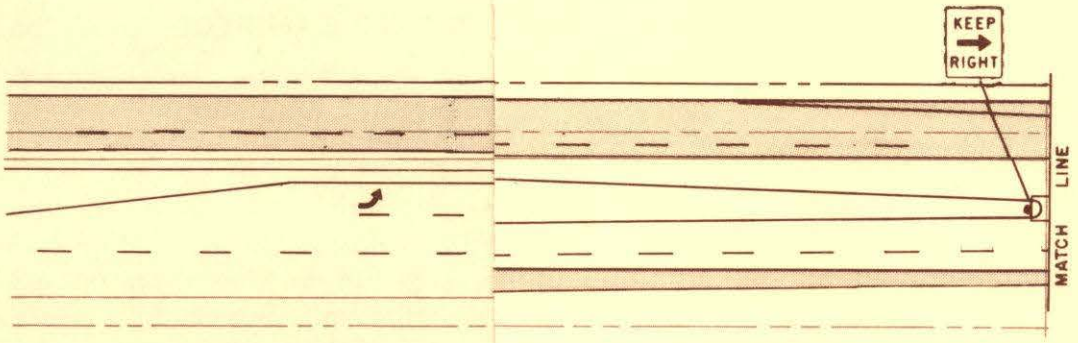


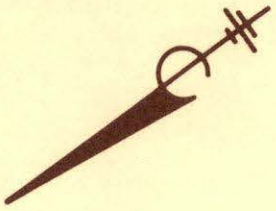
CCIDENT SUMMARY 3 YR PERIOD

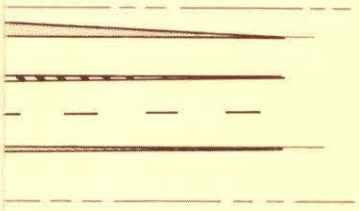
OPOSED IMPROVEMENT WY23a

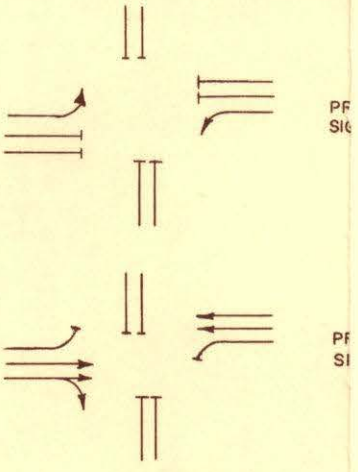
9-47

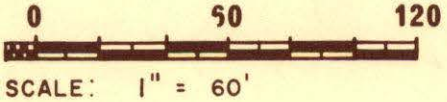
RICHARD P. BROWNE ASSOCIATES











SCALE: 1" = 60'

LESS THAN 9

ACCIDENT SUMMARY – 3 YEAR PERIOD

OPOSED IMPROVEMENT WY 23b

9-49

WY - 24 PATERSON HAMBURG TURNPIKE AND COLFAX AVENUE

Problem

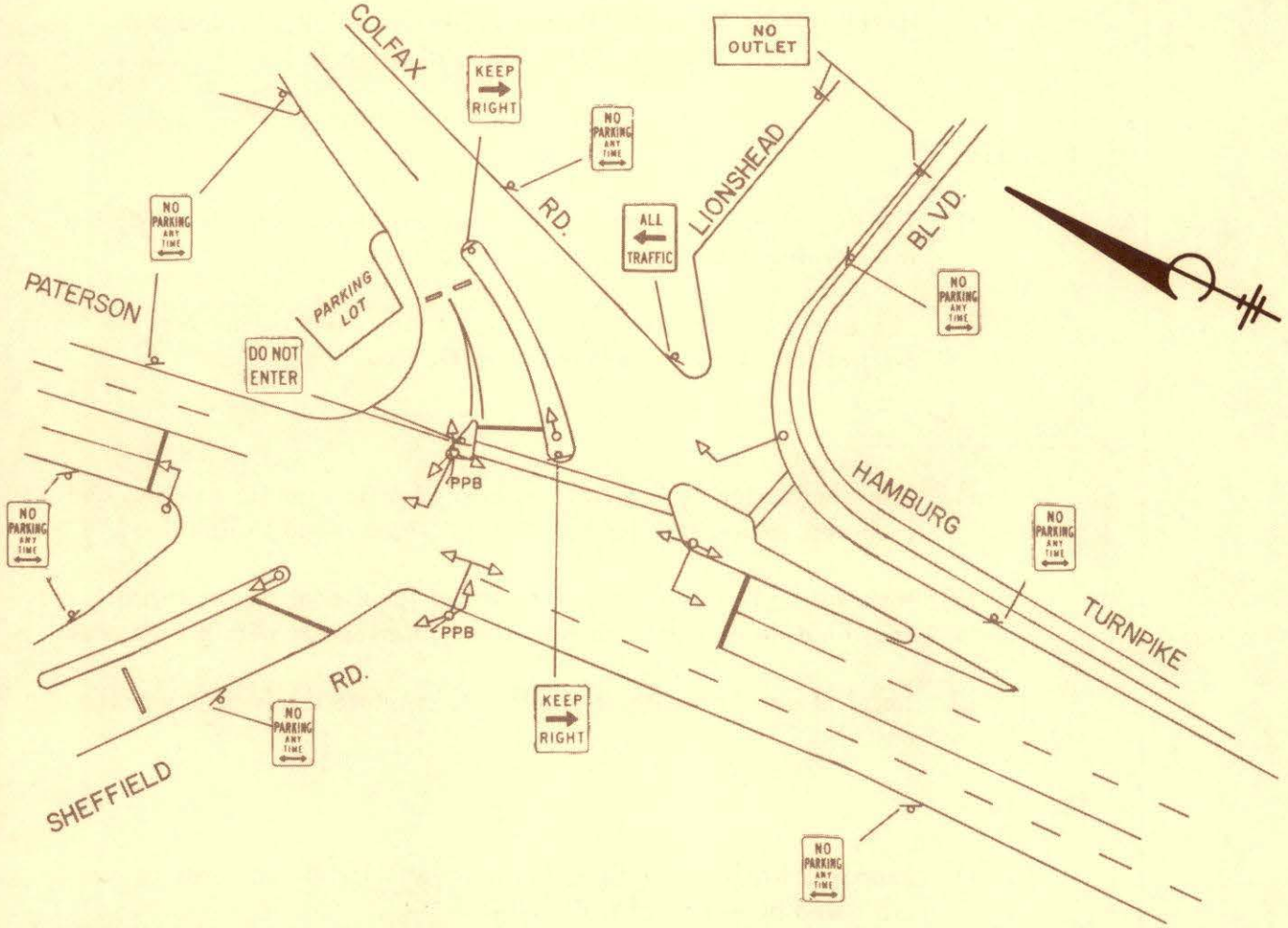
Traffic volumes at this intersection satisfy the warrants for installation of a traffic signal. The existing traffic signal installation conforms to design and practice as recommended in the Manual on Uniform Traffic Control Devices, however, the installation has not been approved by the New Jersey Department of Transportation.

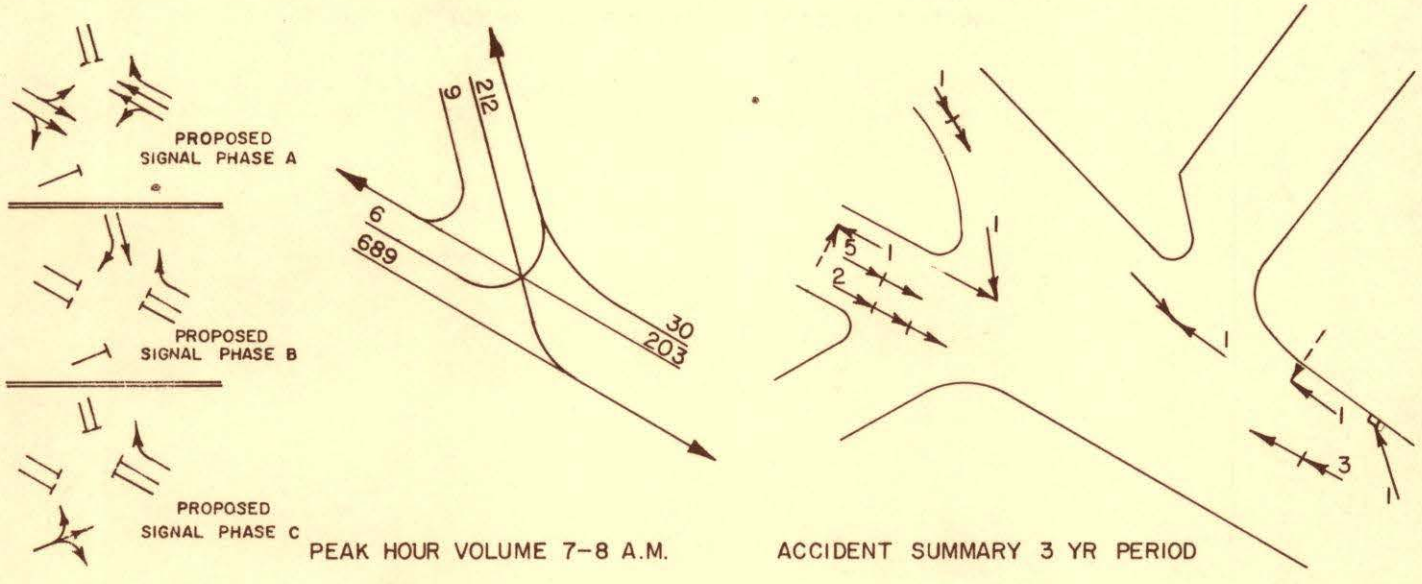
Recommendation

That approval for the installation of this traffic signal be granted by the New Jersey Department of Transportation.

Benefit

Traffic regulations at this location will be legally enforceable.





PEAK HOUR VOLUME 7-8 A.M.

ACCIDENT SUMMARY 3 YR PERIOD

PROPOSED IMPROVEMENT WY 24

WY - 25 INTERCONNECTION OF PATERSON-HAMBURG TURNPIKE AND VALLEY ROAD TRAFFIC SIGNALS

Problems

(1) Traffic volumes on these two arteries are highly directional during the morning and evening peak traffic hours

(2) The existing signals operate independently, and do not provide progression for the predominant traffic flow

Recommendations

(1) Interconnection by leased lines of all traffic signals, existing and proposed, along the Hamburg Turnpike and along Valley Road

(2) Installation of three dial, three offset local controllers with a coordinating unit at each signalized intersection within the system

(3) Installation of a master controller to regulate the local controller units

Benefits

(1) Improved traffic flow along these major arterial roads due to coordinated operation of traffic signals

(2) Flexibility to adjust signal operation within the system to better meet varying traffic demands during the day

X FINANCIAL PROGRAM

The following proposed inplementation 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 is required to participate in the improvement costs. Many 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 some 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.

Projects included in the first two years of the implementation program are those which township officials consider to be of utmost importance. Among these, the intersections of Alps Road and Ratzer Road and the Riverview Drive-Totowa Road improvement are to be partially paid for by already approved and scheduled State Aid road construction projects. Only the additional cost of the traffic signals at these locations is to be borne by the TOPICS program. One project, that of Paterson-Hamburg Turnpike and College Road, is scheduled early in the five year plan based on the demand expected to be generated when the Paterson General Hospital, now under construction, is opened.

The remaining recommended improvements are spread over the five year program in order of their rated priority. Care was taken to intermesh the TOPICS improvements with the "Passaic County Highway Improvement Program" and to spread out total expenditures for both programs over the five year period. Since matching funds must be made available for each program, the combined effect of both programs on local budgets had to be considered.

TOWNSHIP OF WAYNE
PROPOSED TOPICS IMPLEMENTATION SCHEDULE

TABLE VI

YEAR	LOCATION	EST. COST
1972	Valley Road & French Hill Road - Riverview Drive & Totowa Road	$ 53,200
	French Hill Road & Parish Drive	12,800
	Widening of Valley Road	160,000
	1972 TOTAL	$226,000
1973	Hamburg Turnpike & Terhune Drive	$ 51,700
	Hamburg Turnpike & Ratzer Road - Pompton Road	123,500
	Hamburg Turnpike & College Drive	55,000
	Valley Road & Ratzer Road	7,000
	Alps Road & Ratzer Road	18,000
	1973 TOTAL	$255,200
1974	N.J. Route 23 & Fairfield Road - Van Dyne Avenue	$ 28,100
	N.J. Route 23 & Packanack Lake Road	25,000
	N.J. Route 23 & Willowbrook Entrances	30,000
	Hamburg Turnpike & Cyanamid Drive	500
	Hamburg Turnpike & Black Oak Ridge Road	43,200
	Hamburg Turnpike & Dawes Highway	36,400
	Black Oak Ridge Road & Jackson Avenue - Longport Road	67,300
	1974 TOTAL	$230,500
1975	Widening of Hamburg Turnpike from Alps Road to Church Lane	$180,000
	Hamburg Turnpike & Alps Road	28,000
	Hamburg Turnpike & Church Lane	22,000
	Hamburg Turnpike & Berdan Avenue - Byrne Court	12,000
	1975 TOTAL	$242,000
1976	Hamburg Turnpike & Valley Road	$ 84,500
	Alps Road & French Hill Road	24,000
	Hamburg Turnpike - Valley Road Signal Interconnection	31,300
	Valley Road, Preakness Avenue & Nellis Drive	127,100
	Hamburg Turnpike & Preakness Shopping Center Entrance	24,800
	1976 TOTAL	$291,700
	5 YEAR TOTAL	$1,245,400

XI - MAINTENANCE AND EVALUATION

Maintenance of the Arterial System

Present operation and maintenance of all traffic control devices on the state highway routes are performed by the New Jersey Department of Transportation. Additional improvements to these routes as a result of this TOPICS program are well within the capability of this organization. It is estimated that it will cost approximately $1500 annually to maintain the three TOPICS improvement locations in the state highway system.

All other traffic control devices are maintained by the Traffic Bureau of the Wayne Police Department. The staff of this organization includes twelve personnel and is fully capable of designing, installing and maintaining all traffic control devices within the township. Annually, it costs the Township of Wayne approximately $500 per intersection to maintain and operate these traffic signals. Approximately, $250 of this total is for electrical operating costs, $150 for maintenance costs such as relamping, repairs etc. and $100 for the maintenance of signs and pavement markings. Most of the TOPICS improvements are associated with traffic signal installations and it is estimated that the maintenance and operating costs will be $9,500 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 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

COUNTY OF PASSAIC

George Mason	County Engineer
James Rogers	Planning Director

NEW JERSEY DEPARTMENT OF TRANSPORTATION

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Raymond Malone	Highway Engineer

FEDERAL HIGHWAY ADMINISTRATION

William Schmitt, Jr.	Planning and Research Engineer
John Ryan	Area Engineer

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Arthur Young	Project Engineer
Tu-Jung Weng	Traffic Engineer
Moshe Herzog	Traffic Engineer
George Kammoun	Traffic Engineer
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Jerry Rasmussen	Chief Draftsman
Michael McClelland	Draftsman
Thomas Duffy	Draftsman
Larry Toscano	Draftsman
Priscilla Klingenberg	Technician
Richard Herman	Technician