

1947

A Traffic Survey Report and Limited Access Highway Plan of the Tampa Metropolitan Area

Division of Research and Records of the State Road Department of Florida in cooperation with the Public Roads Administration, Federal Works Agency

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**A TRAFFIC SURVEY REPORT
AND LIMITED
ACCESS HIGHWAY PLAN
OF THE
TAMPA METROPOLITAN AREA**

A
TRAFFIC SURVEY REPORT
and
LIMITED ACCESS HIGHWAY PLAN
for the
TAMPA METROPOLITAN AREA



By the
DIVISION OF RESEARCH AND RECORDS
of the
STATE ROAD DEPARTMENT OF FLORIDA
in Cooperation with the
PUBLIC ROADS ADMINISTRATION
Federal Works Agency
1946 — 1947

FOREWORD

The publication of the Interregional Highway Committee Report in 1944, crystallized sentiment that State and Federal authorities have a responsibility to aid in solving urban traffic problems as well as those on rural highways.

The Interregional Report states, "Urban Planning is really just now coming to grips with one of the basic urban problems — decentralization or dissipation of the urban area to an extent not economically justified. This is a most difficult problem to solve. So long, however, as the central areas of the cities are poor places in which to live and rear children, people will continue to move to the outskirts. Undoubtedly a factor that has facilitated this movement has been the improvement of highways."

"Modern development of highway transportation has resulted in large differences between rural and urban roads, especially in regard to the capacity of such roads to serve the traffic using them. Many cities are approached by numerous good roads of adequate capacity in rural and suburban areas, but in cities themselves, where the traffic reaches its highest volumes and where, therefore, there is the greatest justification for facilities permitting uninterrupted flow, the stops necessitated by street intersections increase in frequency, the average speed of travel decreases, and inconvenience and cost of motor vehicle operation rise sharply. The streets affected have undergone a progressive change in function from predominantly serving land to similarly predominantly serving new and mounting arterial traffic flows. Such improvements as have been made have generally been designed to combine in one facility the service of both classes of traffic, the local and the arterial. As yet there have been few instances in which the desirable separate provision for arterial traffic has been attempted."*

In the past, as traffic volumes began to increase rapidly, existing streets became filled. The filling of these streets produced a pressure which brought many engineers to a conclusion that, if the streets were not wide enough to adequately accommodate present traffic, the problem could be solved by widening the streets because the wider streets would hold more traffic than did the narrow streets. However, even when the street widths were doubled, in most instances this was still found not to be enough. The next conclusion which was drawn was that if the present streets were overcrowded, more streets should be provided. The fallacy in this whole undertaking can best be expressed by saying that by utilizing these processes the engineers were perpetuating the identical system of horse and buggy streets used for centuries. No basic improvements were being made.

*From "Express Planning in Metropolitan Areas"—1947, by J. Barnett, Chief, Urban Road Division, Public Roads Administration.

In later years traffic signals were introduced and installed at strategic intersections. While signalizations did in many instances provide some sort of relief, they did clearly indicate that no street has a capacity greater than its intersection. No matter what the mid-block capacity, the traffic volume is limited to that which can be discharged through its intersection.

Hence, in order to provide adequate facilities for the considerable movement of motor vehicles in intra-city and city-suburban travel a limited access type of design is recommended, which will, as far as it is practicable to do so in Tampa, limit the cross movements of vehicles and pedestrians at grade and provide reasonably free or throughway movements to and from the central business district.

The usefulness of these limited access routes will rest almost entirely upon their locations with relation to the purposes for which the city exists. In determining these locations as well as the design features, there has been kept in mind at all times—

"The average citizen desires a quiet and safe environment in which to live and to raise a family. In order to do this he should have QUICK, CONVENIENT, SAFE AND ECONOMICAL ACCESSIBILITY TO PLACES OF EMPLOYMENT, SHOPPING AND BUSINESS CENTERS, SCHOOLS, RECREATIONAL AREAS, AMUSEMENT CENTERS, RELIGIOUS AND CULTURAL INSTITUTIONS. THESE ARE THE PURPOSES FOR WHICH CITIES EXIST IN THE FIRST PLACE. WITHOUT AFFORDING READY ACCESSIBILITY TO ALL THESE FACILITIES FOR THEIR INHABITANTS, CITIES HAVE NO REASON FOR EXISTENCE."



LIMITED ACCESS OR THROUGHWAY

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Survey conducted and Report prepared under direction of

W. M. Parker, Division Engineer

Division of Research and Records

in cooperation with the

Public Roads Administration



AN AERIAL VIEW OF DOWNTOWN TAMPA

THE CITY OF TAMPA

The Tampa Bay Area, though supplying the beachhead from which De Narvaez launched the first inland exploration of the North American Continent in 1528, was not the scene of much further known development until 1820 when early straggling settlers found the area in possession mainly of Seminole Indians and a small Latin settlement called Spanishtown.

Difficulty with the Indians led the Federal Government in 1823 to establish Fort Brooke on the east shore at the mouth of the Hillsborough River — a part of the site of the present city. In November, 1831, the Government established the first post office and called it Tampa Bay, which was shortened to Tampa in 1834. The first sizable impulse of settlement followed the Seminole War in 1842 when the Government offered settlers 160-acre homesteads.

On February 12, 1849, four years after Florida was admitted to statehood, and no doubt influenced by the grant of 160 acres of land for a townsite just north of Ft. Brooke from the Government, the town of Tampa was incorporated. The original corporation was dissolved in 1852, followed by a new one in 1853. A city charter, however, was not granted until July 15, 1887.

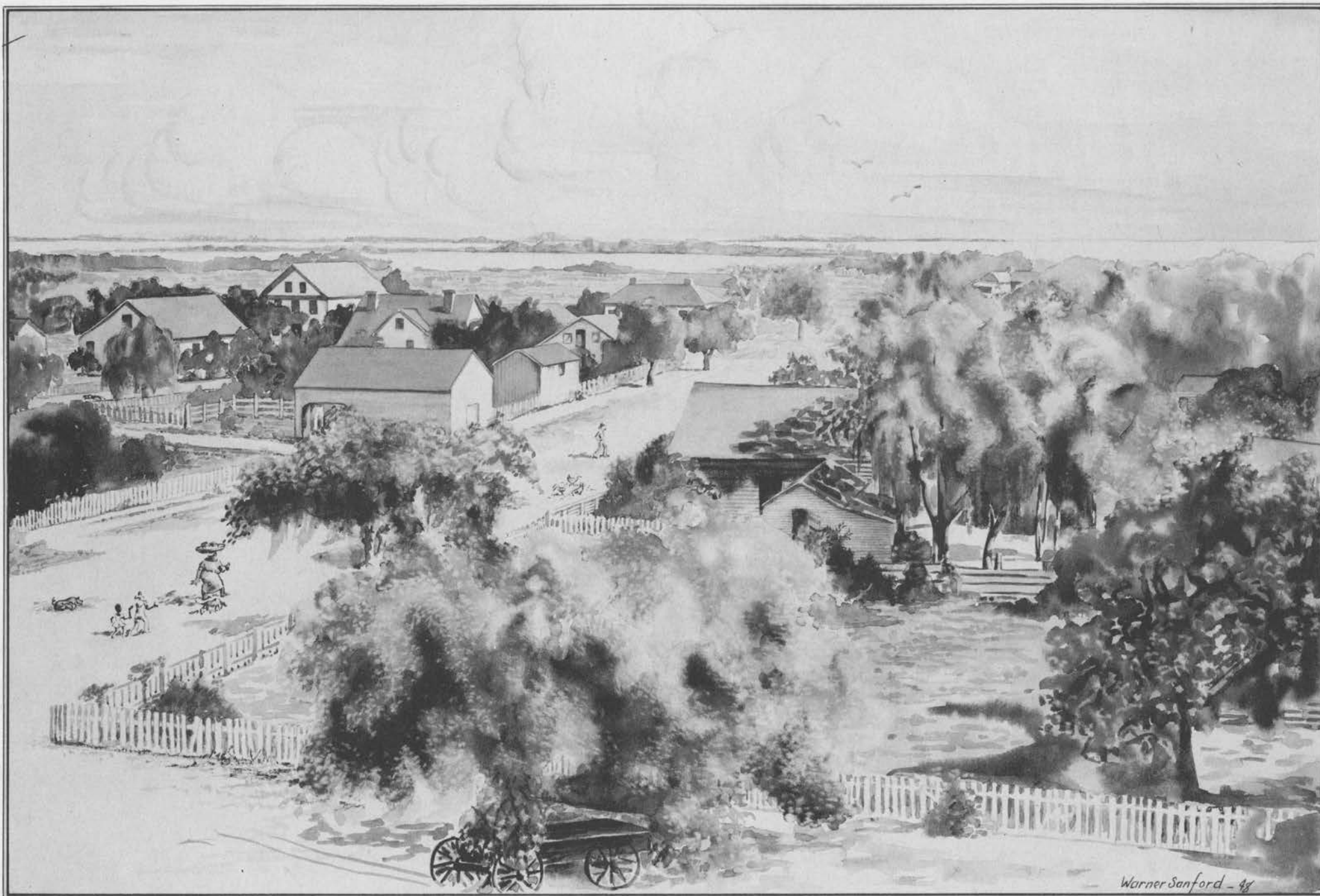
The optimistic and aggressive spirit of the early settlers resulted in the bringing in of a railroad line (the present Atlantic Coast Line) in 1884. This, together with the establishment of the cigar industry, enticing a large contingent of Latin population from Key West and Cuba, in 1886, and the "Yulee" railroad (the present Seaboard) in 1889, boosted Tampa's population to 5,532 by 1890.

With rail connections to inland area, the then small city, situated as it was on Tampa Bay which offers one of the best of protected harbors, became recognized for its importance as a seaport connection to the Latin Countries.

Tampa was from the first an industrial and shipping center. Being the main outlet for phosphate shipments, lumber and naval stores, it has also attained considerable importance for ship building. Recent years have seen Tampa develop as a storage and distribution center for petroleum, citrus and agricultural products. Tampa has the only cement plant in Florida.

Tampa has a rich mixture of racial culture. Ybor City and West Tampa are Latin centers characteristic of Central American countries. Though not given the full recognition it deserves as a tourist resort, it is nevertheless the center of tremendous seasonal tourist activity. Its potentials in this direction are far from being fully realized.

It is strategically located with respect to the entire State, being near the center and is competing with Miami to become the foremost link with Latin and South American countries.



TAMPA ~ *Lafayette Street and Florida Avenue in 1880.*

From a Photograph in "HISTORY OF HILLSBOROUGH COUNTY" by Ernest L. Robinson.

To visualize the situation from a highway transportation standpoint it is necessary to revert to that 160 acre grant of land made in 1849. This tract was part of an area laid off as a townsite by one John Jackson, land surveyor, who can best be described as wise beyond his times.

In 1853 Mr. Jackson prepared plans providing for subdividing into blocks, lots and streets that area bounded by Hillsborough River on the west, Jefferson Street on the east, Whiting Street on the south and Harrison Street on the north.

Mr. Jackson has been described as a man of vision and perhaps that is more appropriate than to call him wise, because a wise man does that which his contemporaries consider prudent and there is little doubt that Jackson's plan for Tampa (like that of L'Enfant for Washington) was considered visionary. Though he could not foresee the traffic to be engendered by the undreamed of automobile, he provided streets with the ample (for the time) width of 80 feet!

Not only did they fail to provide the same street widths, but in some instances, street alignments defined by one developer were not continued by the adjoining developer or, if continued at all, only after creation of a jog in the street.

In general, the physical street plan is much more nearly adequate in the downtown business district, thanks to Surveyor Jackson, than are the approach routes.

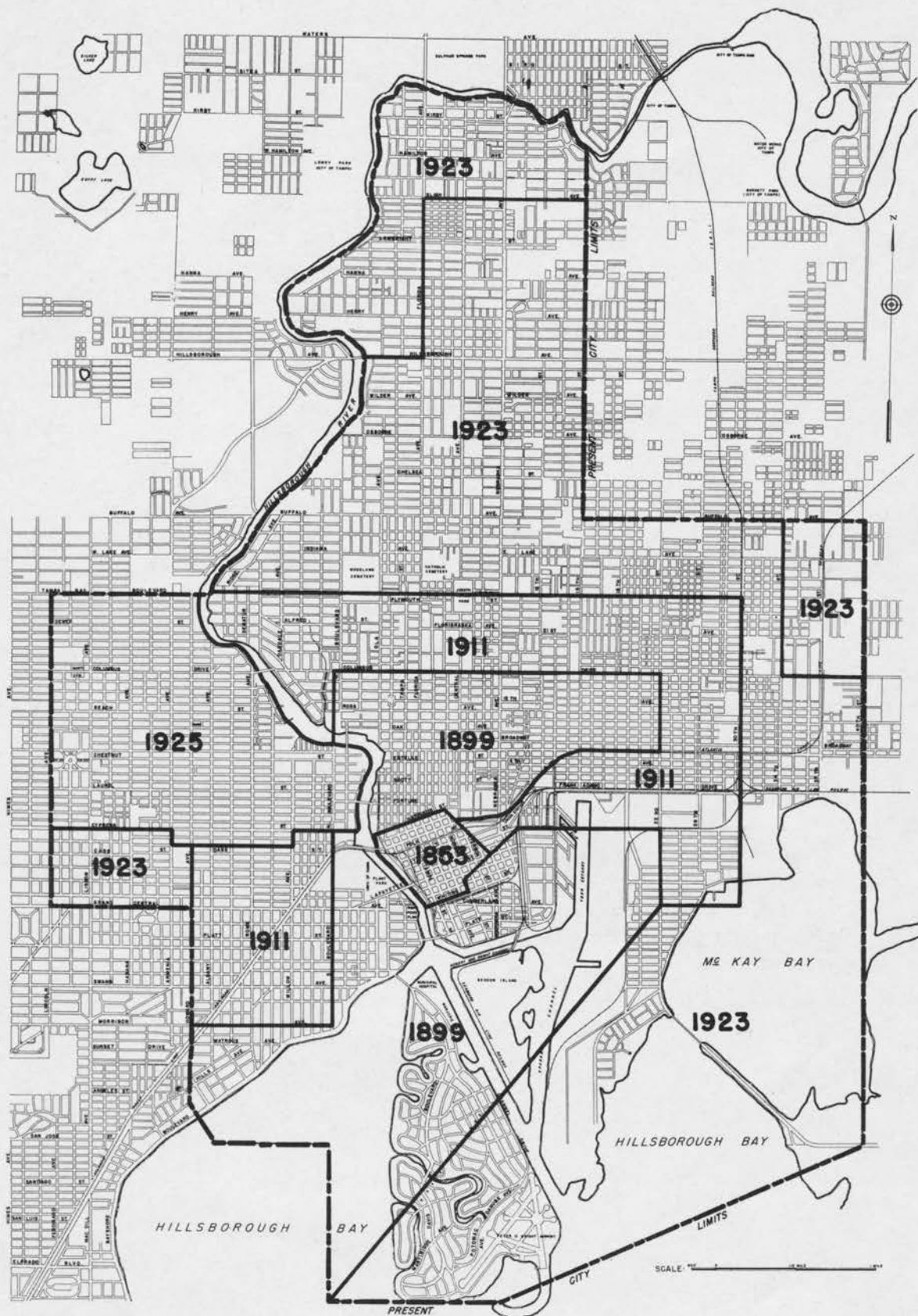
Tampa's growth has been continuous and substantially in pace with development of the State. It is true that between 1930 and 1940 there was a slight decline in population inside the city limits, resulting from a shifting from the city center to the adjacent suburbs. However, the metropolitan area as a whole recorded a substantial increase. By 1945 the corporate population reached 124,000 while that for the metropolitan area was 172,000.

But Tampa's importance lies not entirely within itself. Especially since the expansion in highway travel a metropolitan center exercises great influence in its tributary area. Being a main seaport and transportation center, it seems reasonable to assume that Tampa's influence extends at least 100 miles. This 100 mile area brings 783,000 people under the city's influence.

Today Tampa is abundantly blessed with air, rail, water and highway transportation facilities and service.

The three major airports (Tampa International, Peter O. Knight and Hillsborough County) are supplemented by McDill Field and a number of other military airport developments in the metropolitan area.

There are three bus lines which handle an average in excess of 7,000 passengers in and out of the City daily to all points in Florida with connections to cities of the United States and Canada.



AREAS OF SUCCESSIVE CORPORATE GROWTH
TAMPA METROPOLITAN AREA SURVEY

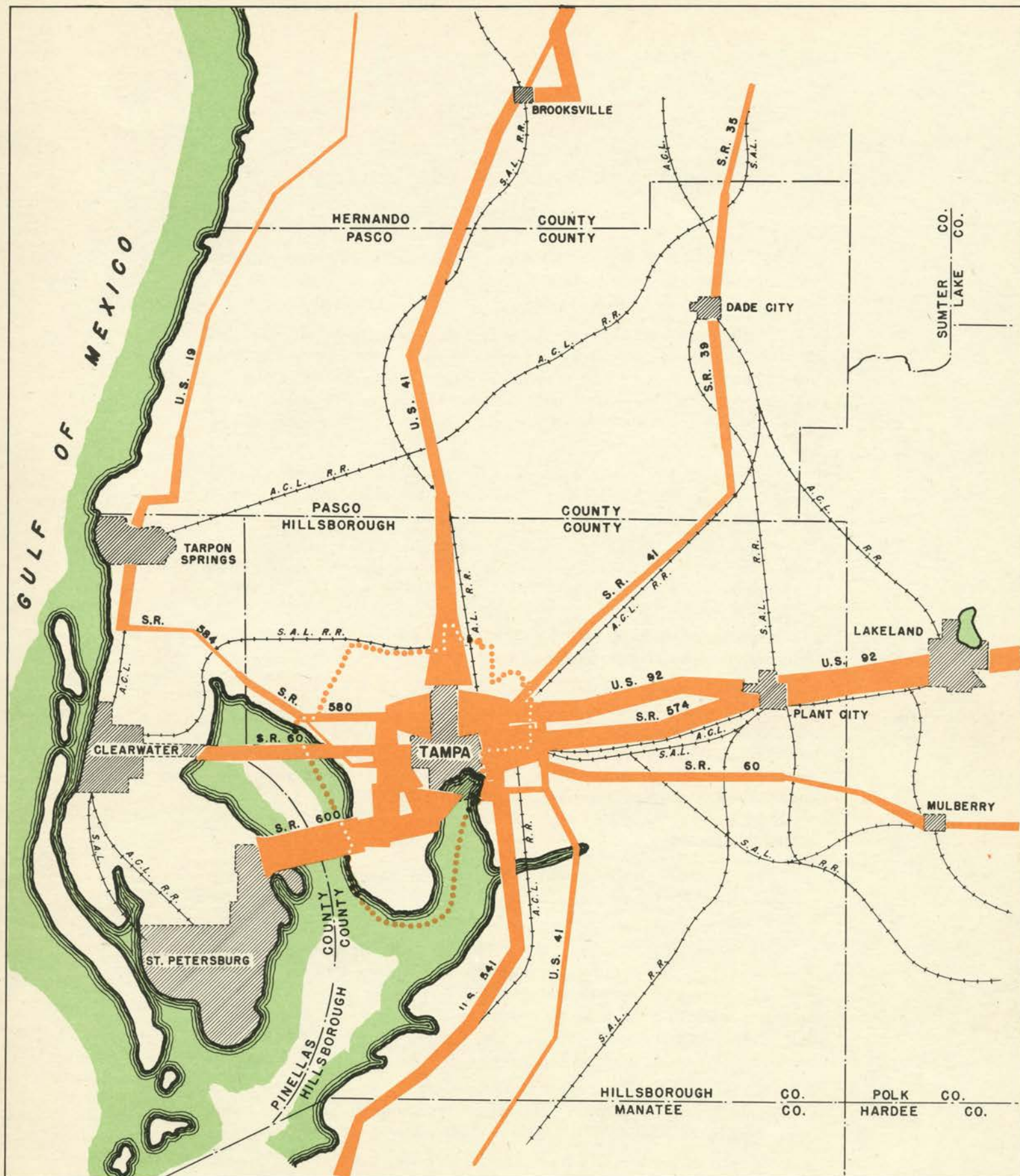
1947

Two trunk line railroads, the Atlantic Coast Line and the Seaboard Air Line, operate passenger service at a union station and provide local as well as through freight service to all parts of the country.

Operating under the jurisdiction of the Interstate Commerce Commission are a dozen truck lines that cover the entire State and have connections to practically all points in the North, East and West.

As a seaport Tampa is ideally situated at the head of Hillsborough Bay, leading into Tampa Bay, an arm of the Gulf of Mexico. Municipal and private docks and warehouses provide ample accommodations for shipping. It is the first port in Florida in point of tonnage and is the export point for the country's largest phosphate supply.

In addition to being the terminus of two Interstate routes, Tampa is served by ten trunk lines entering or leaving the area which are maintained by the State Road Department. The accompanying map shows the traffic flow on the major highways converging at Tampa. The map also depicts the limits of the area in which the metropolitan traffic survey was conducted.



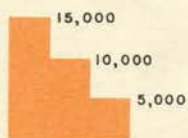
MAJOR HIGHWAYS CONVERGING IN TAMPA

SHOWING 24 HOUR ANNUAL AVERAGE

TRAFFIC FLOW DURING 1946

TAMPA METROPOLITAN AREA SURVEY

TRAFFIC SCALE



METROPOLITAN AREA LIMITS

TAMPA METROPOLITAN AREA SURVEY

Zones and External Stations

The streets in Tampa, like those in practically all American cities, had proved inadequate to facilitate operations of the ever increasing number of motor vehicles with safety and economic efficiency.

Highway improvements intended to relieve this condition must be so located and designed as to serve a large part of the enormous traffic needs of the city. By ascertaining where the trips begin and end the major traffic desire lines can be located. When the major desire lines are measured in terms of traffic volume design standards are indicated.

Reduced to its simplest terms, the purpose of the Tampa Metropolitan Area Traffic Survey was to determine the origin and destination of all motor vehicular trips made within the area.

From the standpoint of origin and destination, motor vehicle traffic is divided into three classes. All trips traversing the metropolitan area but beginning and ending outside are termed **through** trips. Those beginning in the rural area and ending in the urban area, or vice versa, are termed **rural-urban**. All trips beginning and ending in the urban area are classed as **local** or **urban** travel.

By roadside interviews of inbound and outbound motorists at stations where all main roads intersect the metropolitan area, the origin, route and destination of all rural-urban and through travel can be determined. Obtaining the record of travel inside the area is more difficult, since it would be a practical impossibility to stop and interview every motorist at all street intersections within such area.

EXTERNAL SURVEYS

Full information on through trips and rural-urban trips were obtained by fairly simple and standard procedures.

The metropolitan area limits do not coincide with the corporate limits but were extended to embrace all the built up area. When this was done there were only a few routes of entrance and exit into the area. External stations were established at these points and all persons entering or leaving the area by means of cars and trucks were stopped and interviewed concerning the origin, destination, route and purpose of the trip.

For Tampa 17 external stations were set up. Interviews were conducted for full 24 hour weekdays on the main routes and 16 hour interviews (from 6:00 A.M. to 10:00 P.M.) at all other stations.

Records were made from 31,758 interviews in this external survey. With two field parties these interviews were completed in six weeks.

INTERNAL SURVEY

Information on travel within the area could not so readily be obtained. In place of 17 key points where traffic passed there were thousands of street intersections. It was obviously impossible to conduct street side interviews.

It was known that for cities the size of Tampa, travel information from one out of ten persons could be reliably expanded to reflect the total travel pattern, provided the ten per cent sample was carefully pre-selected to represent an actual cross section.

To get this sample it was decided that the residents of every tenth dwelling unit would be questioned concerning their travel for a previous weekday. In previous surveys of this nature in Florida this dwelling unit sample was selected from records such as the Housing Survey of the Bureau of the Census, Sanborn Maps, City Directories and building permits. In Tampa it was decided that a carefully instructed crew of prelisters actually circling each block in the area would be more apt to locate each dwelling unit, and this procedure was followed. In the outlying area where residences were sparse the prelisters used automobiles.

Prior to beginning the dwelling unit prelisting the entire metropolitan area of Tampa was divided into 57 zones determined on the basis of natural and cultural boundaries and homogeneity of the residents therein. Against the possible need of a more refined analysis of route selection criteria each of the 57 zones was further subdivided into 2 to 9 subzones.

The prelisters prepared schedules of each tenth dwelling showing thereon zone and subzone number, census block number, name of street and house number.

A total of 4,919 sample dwelling units were thus selected, exclusive of 219 residence units in hotels and institutions where guests resided permanently. In the process of interviewing an additional 94 samples were discovered. These had been missed in the pre-selection because single unit residences were temporarily being used as multiple units on account of the housing shortage. Thus, there were a total of 5,232 dwelling unit samples selected for interview purposes.

Interviewers were selected with great care, some having had previous experience with the Federal Census Bureau in sampling interview surveys, and directed to **interview the residents of the dwelling units selected and no other** concerning travel performed inside the area on the previous weekday. Insistence on this policy required many callbacks, but was justified as evidenced by the fact that 5,107 interviews were completed out of 5,232 samples, 58 were partially completed and 67 units were found vacant.

This ten per cent sample of the Tampa metropolitan area reported 24,175 trips.

To get the balance of the individual vehicle travel in the metropolitan area the operator of each fifth truck and taxi was interviewed on travel performed by such vehicle for a 24 hour weekday. Interviews were made for 1,011 trucks and 56 taxis, recording some 5,800 trips for the former and 750 for the latter. Trip returns on these schedules were not as nearly complete as for the dwelling unit survey and had to be expanded more than the five times.

When all interviews for the external, internal dwelling unit, truck and taxi trips were completed, all data was coded (by numbers) and then punched on IBM cards. The Tampa O and D Survey required 68,130 separate cards.

Among the first tabulations run from the cards were those which would indicate whether complete and accurate information had been obtained, that is, the expanded survey data which could be checked against known facts.

The first of the checks was on the basic data relating to number of dwelling units and population. The Bureau of the Census Housing Survey showed 31,294 dwelling units inside the city limits in 1940. This survey, made in 1946, showed 36,183 units in the corporate area — a gain of 15.6% in approximately 6 years.

The Survey's population count of 124,476 inside the City exceeded the 1940 Federal Census count of 108,000 by 15.3% and was less than one tenth of one per cent off of the State 1945 Census.

The Zone and External Station Map shows (1) the area included in the survey, (2) zones established, and (3) external interview stations on the outer limits of the survey area.

TRAFFIC VOLUME—AVERAGE 24 HOUR DAY

During Summer of 1946

This map is a graphic presentation of traffic volumes as revealed by counts with portable automatic traffic machines at representative locations on the more heavily traveled streets in the metropolitan area. It depicts an average 24 hour weekday volume of vehicles during the summer of 1946.

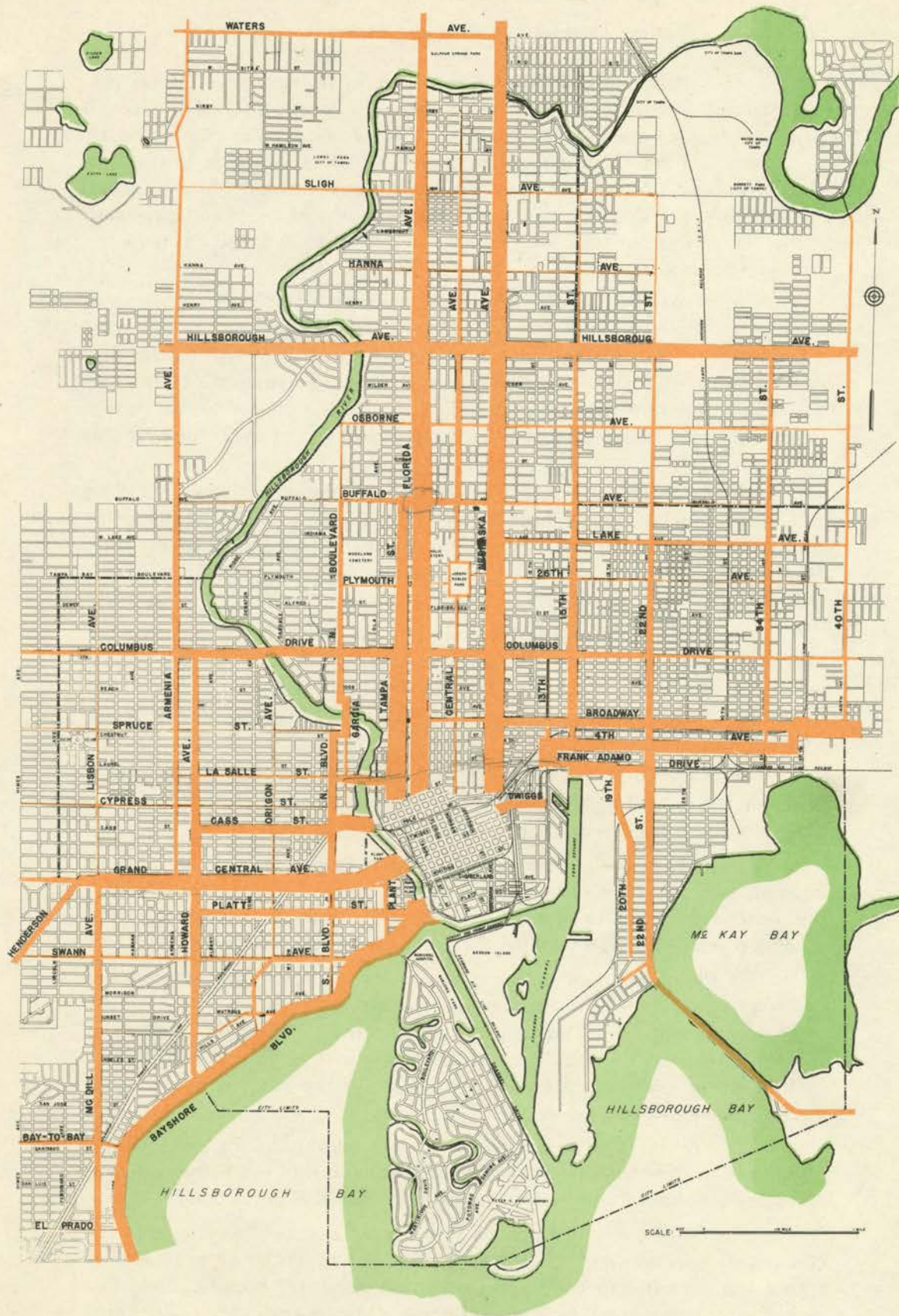
Traffic volume maps of this nature have little value and can often be misleading in the determination of route locations which are designed to relieve congestion. They merely indicate the relative traffic volumes on paths of travel over the existing street system. These routes may be traveled not because they are the most direct and convenient possible to be selected but because they are the only ones available. While these maps do show that certain streets are being heavily traveled they do not necessarily prove that improvements to the streets where the heavy volumes are indicated would provide the desired relief.

Only a study of origins and destinations, that is, where the people driving the vehicles come from and where they want to go, will provide the true answers to where the needed improvements should be placed.

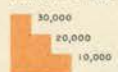
It will be noted that the concentration of traffic movements is on six streets, namely: Hillsborough Avenue, Tampa Street, Florida Avenue, Nebraska Avenue, Grand Central Avenue and the Tampa Bay Boulevard. With the exception of Hillsborough Avenue, all of the thoroughfares lead into and out of the central business district.

It is of interest to note that with the exception of the Tampa Bay Boulevard these arterial streets are lined on both sides with small businesses. Local or short-trip movements to and from these commercial places, plus the parking problems involved necessarily causes turbulence and hampers and slows down traffic having longer trip movements.

Traffic volumes on streets within the central business district are portrayed on the plate immediately following.



TRAFFIC SCALE



TRAFFIC VOLUME - AVERAGE 24 HOUR DAY TAMPA METROPOLITAN AREA SURVEY

DURING SUMMER OF 1946

TRAFFIC VOLUMES IN CENTRAL BUSINESS AREA

During 24-Hour Weekday — Summer of 1946

The traffic flow in downtown Tampa is somewhat better distributed than in the average city of its size. Concentrations are easily discernable, however. East and West the heaviest flows, as would be expected, are on Cass, Lafayette and Platt Streets, which bridge the river. The expected heavy flows on the three main North-South routes, Tampa Street, Florida and Nebraska Avenues, show up clearly but, rather surprisingly, 13th Street north of Elliot is disclosed to have the greatest volume of all.

Most of the usual and some unusual impediments to a free flow of traffic exist in downtown Tampa. Street parking, servicing of property from the street, hordes of pedestrians, two-way traffic and delaying traffic lights tend to reduce vehicular movement. In the unusual category are the railroad lines through the center of the downtown section on Polk Street and the three draw bridges over Hillsborough River.

It is not unusual to see long lines of motor vehicles, including city buses, backed up on both sides of Polk Street while freight trains wend their way carefully through the busiest street traffic in the city. This constitutes the sorest spot in the traffic situation in Tampa and warrants special consideration which is given subsequently; plate 24.

Data are not presently available on the number of openings and delay time involved at all of the draw bridges in the downtown area. On the Lafayette Street Bridge, which is the center of the three downtown bridges, openings totaled 2,300 in 1947, which is an average of more than six a day.

It is reasonable to assume that openings on Platt Street which is down river would be considerably greater in number and those on Cass Street, up river, would be fewer.

Delays resulting from these openings are not critical but if they become so it might be possible to work out some arrangement whereby the water traffic, which is presumed to consist mainly of pleasure craft, could be restricted during the hours of peak motor vehicle traffic.

In the downtown business section of the average city valuable property development bordering narrow streets tends to make traffic improvement difficult, if not impossible, because the cost of widening or relocating in the area would be prohibitively costly. Tampa is fortunate in that the early founders laid out streets in the area with generous widths up to 80 feet.

Except for the deplorable situation arising in the conflict between rail and motor vehicle traffic it is believed that the present downtown system should be physically ample for some years to come.

The vehicular capacity of the streets can be considerably increased as necessity arises, by (1) increasing the number of intersections where left or left and right turns are prohibited, (2) adoption and impartial enforcement of reasonable street parking restrictions, (3) lane-lining the streets and educating the motorists to take advantage of multiple lanes where street widths make them possible, and (4) restricting certain streets to one-way traffic.

One-way streets materially speed up traffic and promote safety by reducing the number of basic conflicts at intersections. If one of two intersecting streets is made one-way the number of basic conflicts is

The origin and destination survey revealed that although a majority of the motorists entering the business area had that as their destination, a considerable number were merely trying to reach a point on the other side. Improvement of certain streets to be used for bypassing the central business area, therefore, would afford considerable relief from downtown congestion.

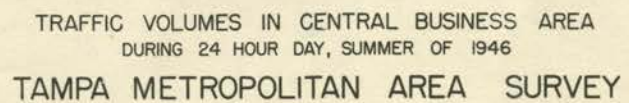


PLATE 5

VEHICLE TRAVEL TIME

The Time Zone Study (Plate 6) provides an indication of travel time over Tampa's arterial streets during the afternoon traffic peaks in the winter tourist season.

The intersection of Florida Avenue and Lafayette Street within the heart of the downtown business area forms the point of origin, with travel time plotted in two minute intervals.

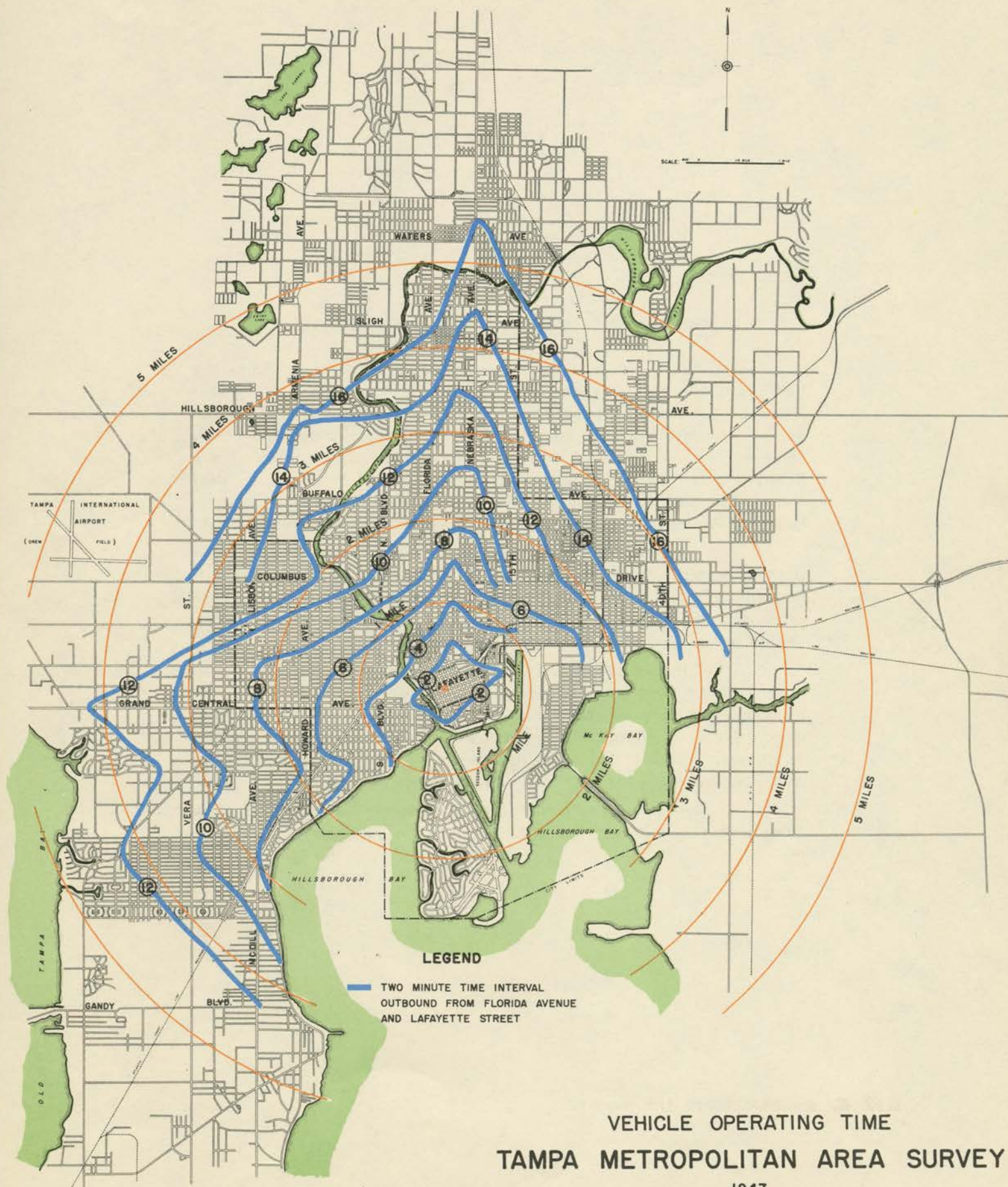
Four basic routes were followed, Florida Avenue (**North**), Grand Central Avenue (**West**), Bayshore Boulevard (**South**) and Lafayette Street (**East**), with 22 sub-routes branching off these four key routes — incorporating a total of over 85 miles of streets and highways.

Routes chosen include all main arteries carrying the preponderance of traffic. Travel time in the N.E. and N.W. quadrants of Tampa is based on runs off Florida Avenue, out Cass Street, 7th Avenue, Columbus Drive, Buffalo Avenue and Hillsborough Avenue.

North on Florida Avenue travel time averages 10 M.P.H. through the first mile and 13 M.P.H. through the first and second mile zone. Neither of these average progressive speeds incorporate time losses due to train crossings along Polk Street.

West on Grand Central Avenue travel time averages 14 M.P.H. through the first mile and 16 M.P.H. through the first and second mile zone. Neither of these progressive speeds incorporate time losses resulting from bridge openings.

South on Bayshore Boulevard travel time averages 19 M.P.H. through the first mile and 23 M.P.H. through the first and second mile zone. This route is a semi-controlled access way and shows very clearly the reduced travel time which may be expected from this type of construction as compared with the usual city street.



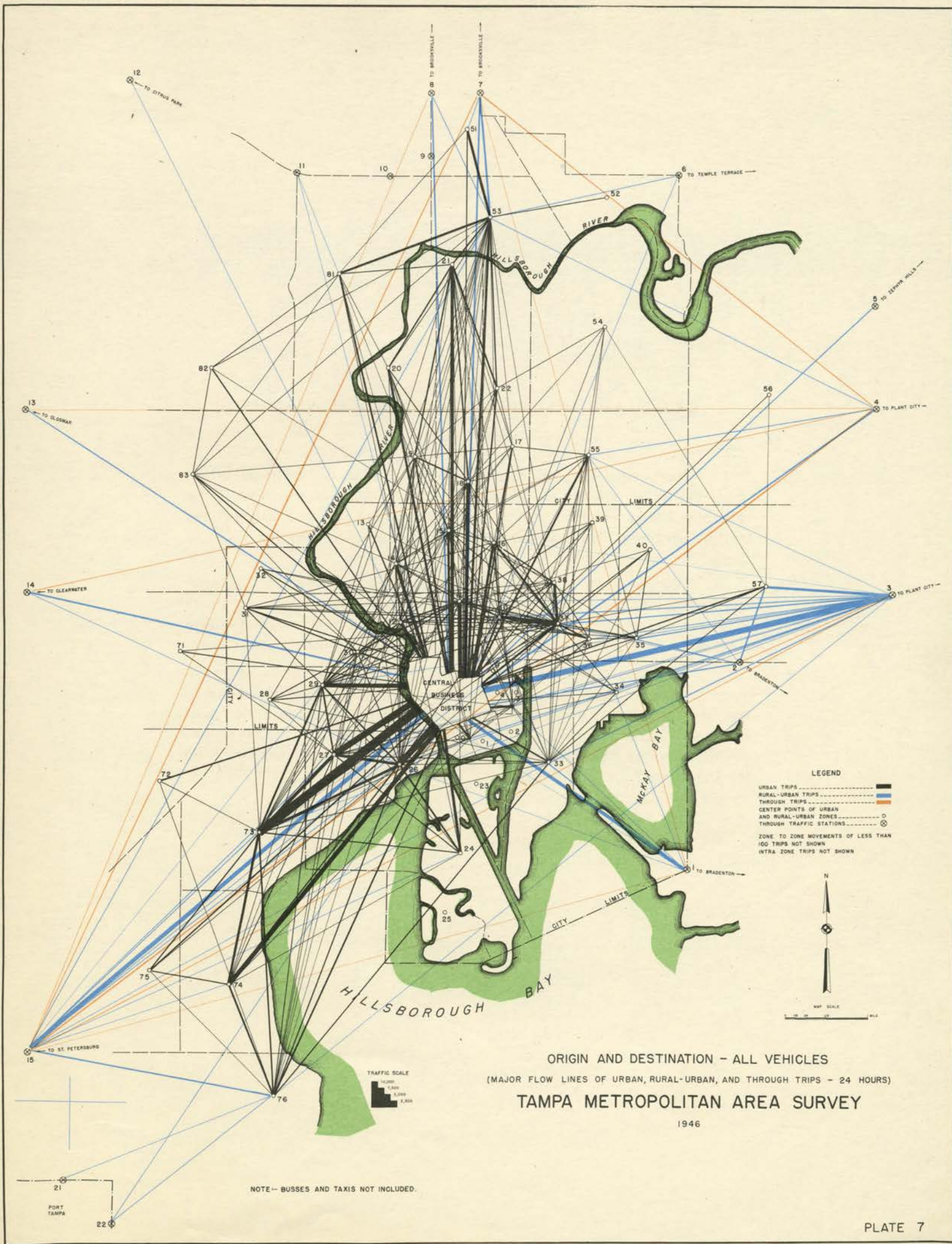
ORIGIN AND DESTINATION — ALL VEHICLES

This plate indicates by means of bands of varying widths the traffic volumes for all types of motor vehicle trips between different zones as determined from the origin and destination studies. Termini of the lines are the approximate center of the zones and the bands represent the many "desire" lines between the established zones. These lines represent how the motor vehicles would travel if facilities were provided. Compare these "desire" lines with the grid system of arterial streets the greater portion of traffic actually has to travel over (plate 4).

Traffic converges to the central business district in two well-defined patterns; from the north and from the southwest. A lesser pattern but of considerable importance, is shown from the east. These patterns practically dictate the locations of much needed arteries of the limited access or throughway design.

From the southwest section, which generates 32.6 per cent of the total travel to, from and through this business section, there are only three bridges spanning the Hillsborough River to facilitate the movements. To the south and east waterways and the railroad tracks operate as physical barriers. From the north a number of arterial streets are available which are taxed to capacity during peak hours.

To furnish adequate traffic facilities a number of locations in Tampa must be improved and additional facilities provided.



ORIGIN AND DESTINATION - ALL VEHICLES
(MAJOR FLOW LINES OF URBAN, RURAL-URBAN, AND THROUGH TRIPS - 24 HOURS)

TAMPA METROPOLITAN AREA SURVEY

1946

NOTE-- BUSES AND TAXIS NOT INCLUDED.

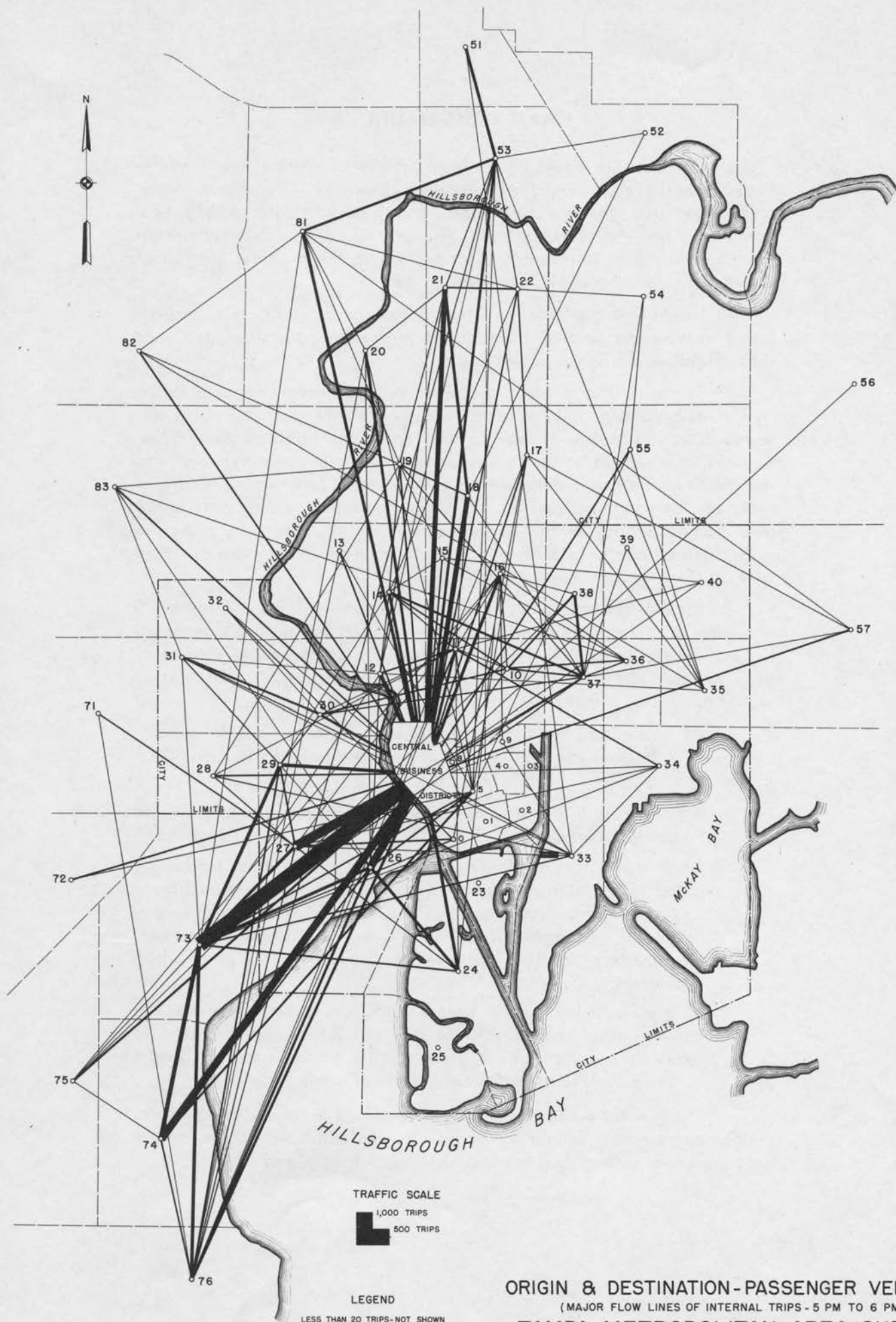
ORIGIN AND DESTINATION — PASSENGER VEHICLES

Peak Hours.

Traffic during peak hours is most significant. In large urban areas the major arterial routes should be designed to accommodate the recurrent heavy volumes during these critical periods, not only for the traffic movements of today but the anticipated increases for years to come.

The chart on the opposite page depicts by bands of varying widths the flow lines of internal trips by passenger cars between zones during the "From Work" hours of 5:00 P.M. to 6:00 P.M. on an average weekday. Zone to zone trips of less than 20 movements are not shown.

It will be noted that the general pattern of this afternoon peak hour is comparable to the 24 hour pattern in the preceding chart except that the movements east of the central business district are not so pronounced. Traffic volumes in that area were more evenly spaced throughout the daytime because they included a large number of vehicles from the Lakeland-Plant City area.



ORIGIN & DESTINATION-PASSENGER VEHICLES
(MAJOR FLOW LINES OF INTERNAL TRIPS - 5 PM TO 6 PM)
TAMPA METROPOLITAN AREA SURVEY

MAJOR DESIRE LINES

Obviously it would be an impossibility to provide new facilities for each and every one of the desire lines shown on the previous charts, so the next step was to combine these many zone to zone travel movements in a few major desire lines. This procedure provided definite indications as to the acceptable locations where the greatest number of motor vehicle trips could be accommodated.

Travel movements fell into two major classifications: trips necessitating movements to and from the central business district and trips that would ordinarily by-pass that district.

Primarily, the location of the limited access routes are dictated by the main "desire" lines of travel. Yet it is seldom possible or practical to construct the routes throughout their distances along idealistic lines. The locations should be such as to provide convenient express service to the major traffic generators such as to downtown business, to industrial locations, to railroad, air and water transportation termini and to the principal residential areas. At the same time care should be exercised in the determination of these locations to insure that they are practical and satisfactory from economic standpoints.

Each of the major desire lines as shown on Plate 9 is merely a grouping of the various zone to zone movements having like directional desires. The widths of the bands indicate the approximate volume of vehicles each route would attract in 1946, and represents such trips as would fall within rather close limits of the major desire lines.

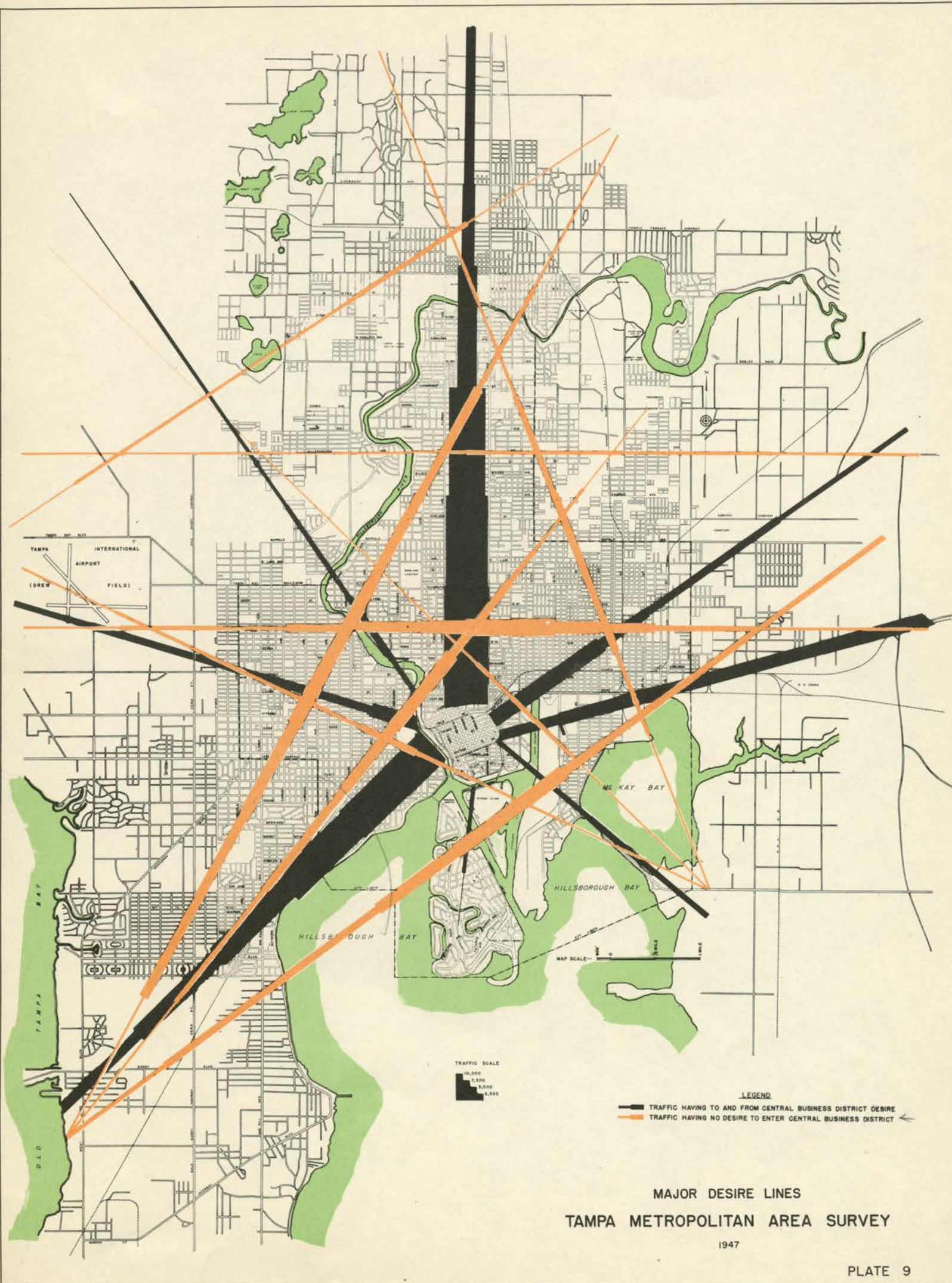
An analysis of these major desire lines indicates that the greater portion of all travel destined to the central business district would be best served by:

- A North-South limited access route located between Florida and Nebraska Avenue.

- An East-West route that would serve not only local traffic but travel entering and leaving the city from the Lakeland-Plant City area. This route is one of the heaviest traveled highways in Florida on a year-round basis. There are no adequate existing streets in Tampa that can be utilized by this rural-urban type of travel.

- A Southwesterly limited access route adjacent to or near the easterly right-of-way limit of the ACL Railroad tracks and to extend from the westerly limits of the central business district southwesterly to the approaches of the Gandy Bridge.

The greater portion of travel not destined to the central business district can be best served by by-pass routes which would be for the most part over adequately marked existing highways and streets.



LAND USE MAP

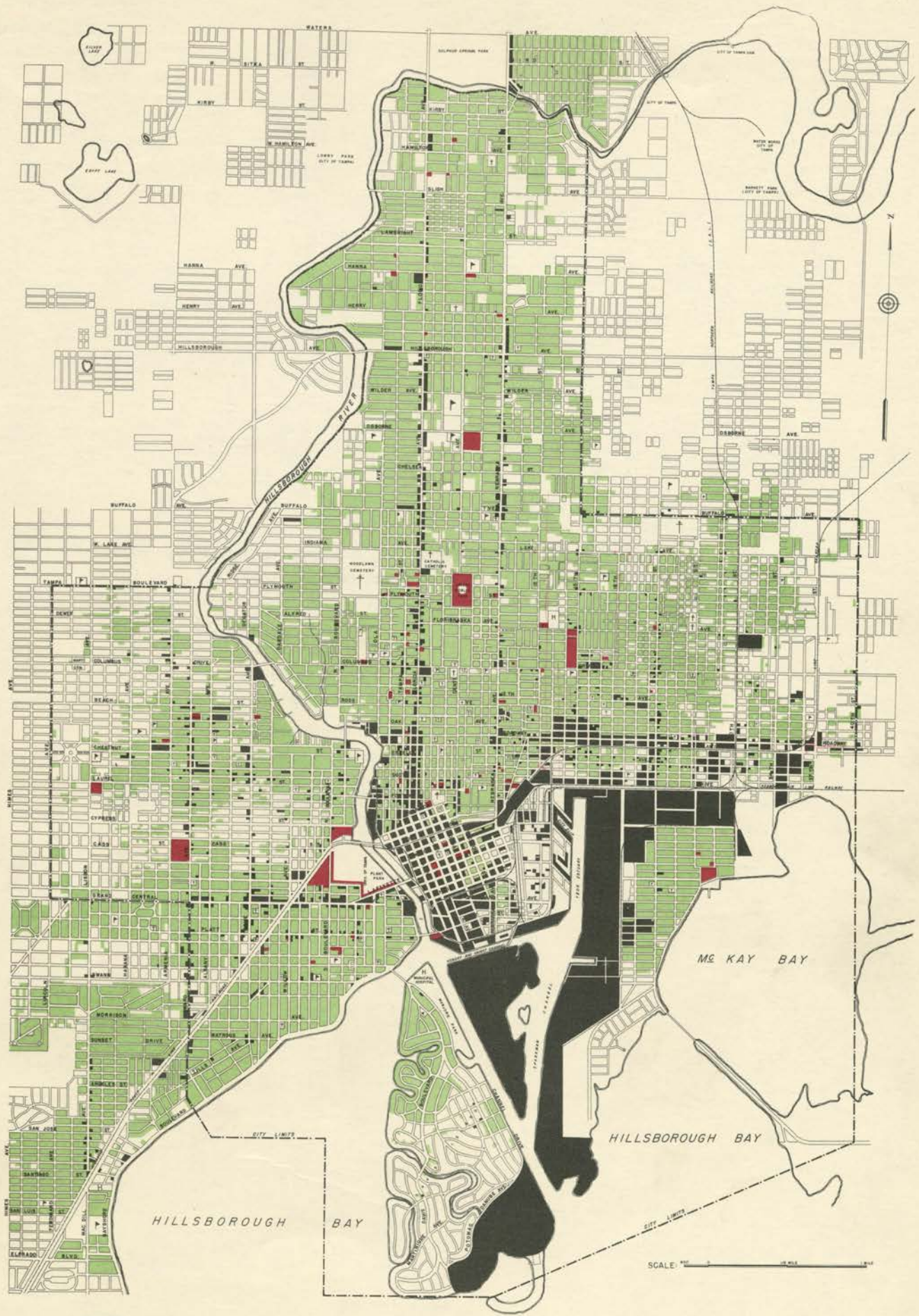
The locations for limited access throughways should insure convenient and fast service to the major traffic generators such as to downtown business, to industry, to other transportation terminals and to the principal residential areas.

To assist in these locations several typical land use and land valuation maps were prepared as aids in the determination of the routes from the economic standpoint.

This Land Use Map, Plate 10, portrays the two major area classifications, residential and business or industrial. Naturally the business areas will be found in greater proportion in the central business district and industrial activities along the water fronts and served through water and railroad developments. Smaller businesses are found in ribbonlike developments along both sides of many of the main arterial streets stretching outward from the congested business district in all directions. Scattered small businesses and industries such as cigar factories will also be found in the several community centers throughout the entire metropolitan area.

On account of extremely high right-of-way costs and because a right-of-way of sufficient widths would needlessly destroy and force to new locations many businesses of long standing along Florida and Nebraska Avenues it is considered far better to remove through travel and urban movements of more than several blocks in length to a new but appropriately located and modernly designed route. Such a plan will permit these important streets to return to the uses for which they are now best suited—local service.

The main throughways will be selected with locations that are close to and can serve the major business and industrial areas.



LEGEND

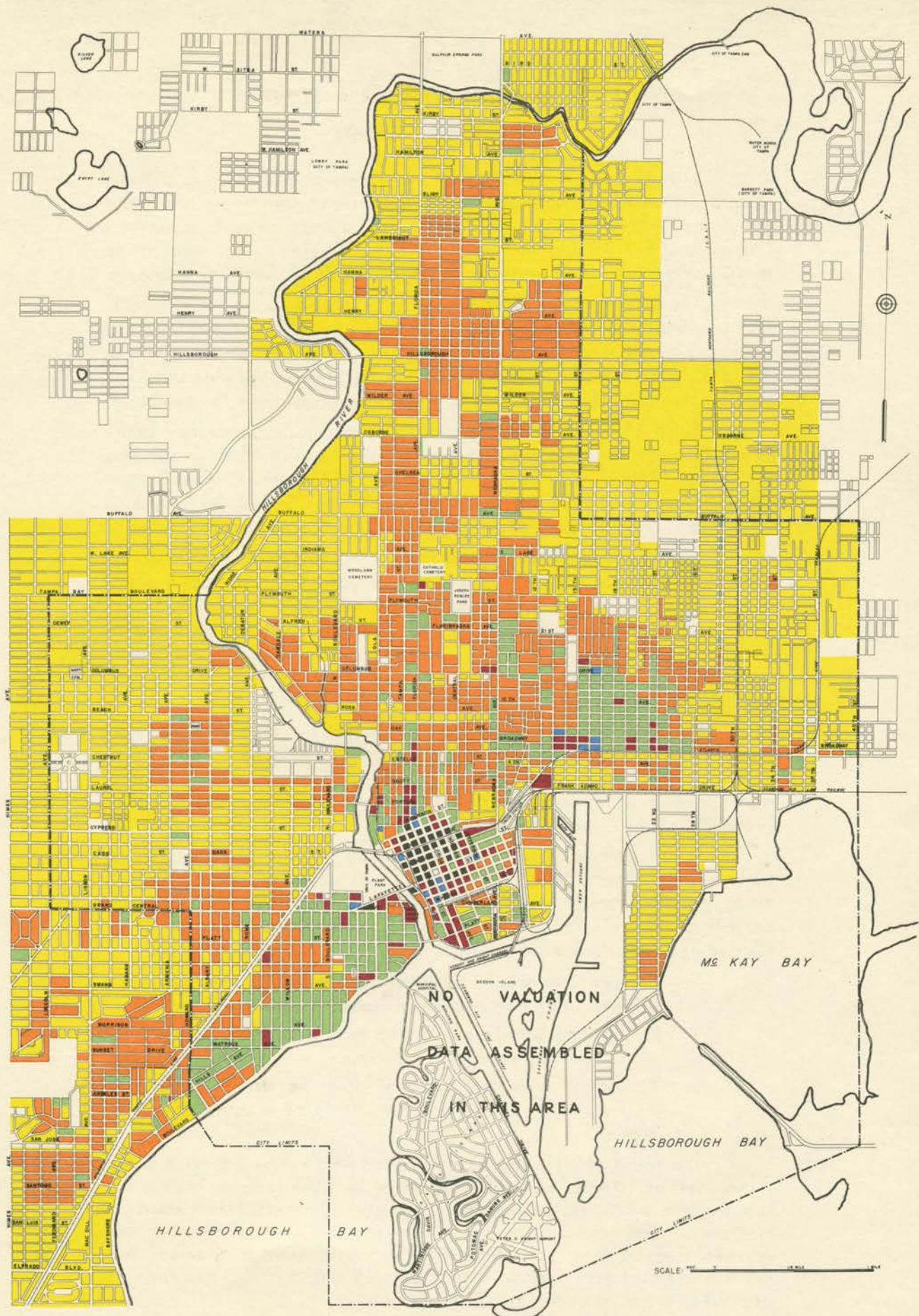
RESIDENTIAL AREA ■
 BUSINESS AND INDUSTRIAL AREAS ■
 PUBLIC PARKS, ETC. ■
 VACANT ■
 SCHOOL +
 CHURCH +
 CEMETERY +
 HOSPITAL +

LAND USE MAP
TAMPA METROPOLITAN AREA SURVEY
 1947

LAND VALUATION MAP

The land valuation map, plate 11, presents a general picture of comparative land values which will enter into right-of-way costs for improvements such as limited access routes along new locations. The final location of the routes selected will be governed to some extent by anticipated right-of-way costs. Where it was possible to do so, such as in the central business district where the valuation per square foot is high, recourse is made in the proposal to a one-way street system.

The proposed routes are confined to locations where property acquisition for necessary right-of-way would not be prohibitive. Except for a few locations along Columbus Drive on the east-west route and along the location toward Gandy Bridge and St. Petersburg the average valuation does not exceed 50 cents per square foot as based on compilations from records available in the office of the County Tax Assessor at Tampa.



LEGEND
VALUATION PER SQUARE FOOT:

Under 25 Cents	Yellow
25 Cents To 50 Cents	Orange
51 Cents To 1 Dollar	Red
1.01 Dollars To 2.00 Dollars	Green
2.01 Dollars To 3.00 Dollars	Blue
Over 3.00 Dollars	Black

GENERAL
LAND VALUATION MAP
TAMPA METROPOLITAN AREA SURVEY

1947

TAMPA METROPOLITAN AREA SURVEY

POPULATION TRENDS

In a period of transition such as exists at present it is difficult to forecast population trends even for an area as large as a State and the difficulty is more pronounced for smaller areas such as Hillsborough County and the Tampa Metropolitan Area. There is every indication that Florida is even now in the early stages of one of its recurrent booms.

There seems little doubt that the State stands to gain in the post-war population shift because many soldiers who were trained here are returning to make it their home. Then, too, the State stands to gain in the south-wide industrial expansion. Thus, common knowledge of trends support the statistical evidence of a boom in population for the State.

Since 1930, at least, the greatest percentage population gains in Hillsborough County have occurred in the suburban area surrounding the City of Tampa. For 1945 over 1940 and 1940 over 1930 the Tampa suburban percentage gains were respectively 41.8 and 36.8 against 14.8 and 7.1 for the city proper and 15.4 and 17.4 for the county.

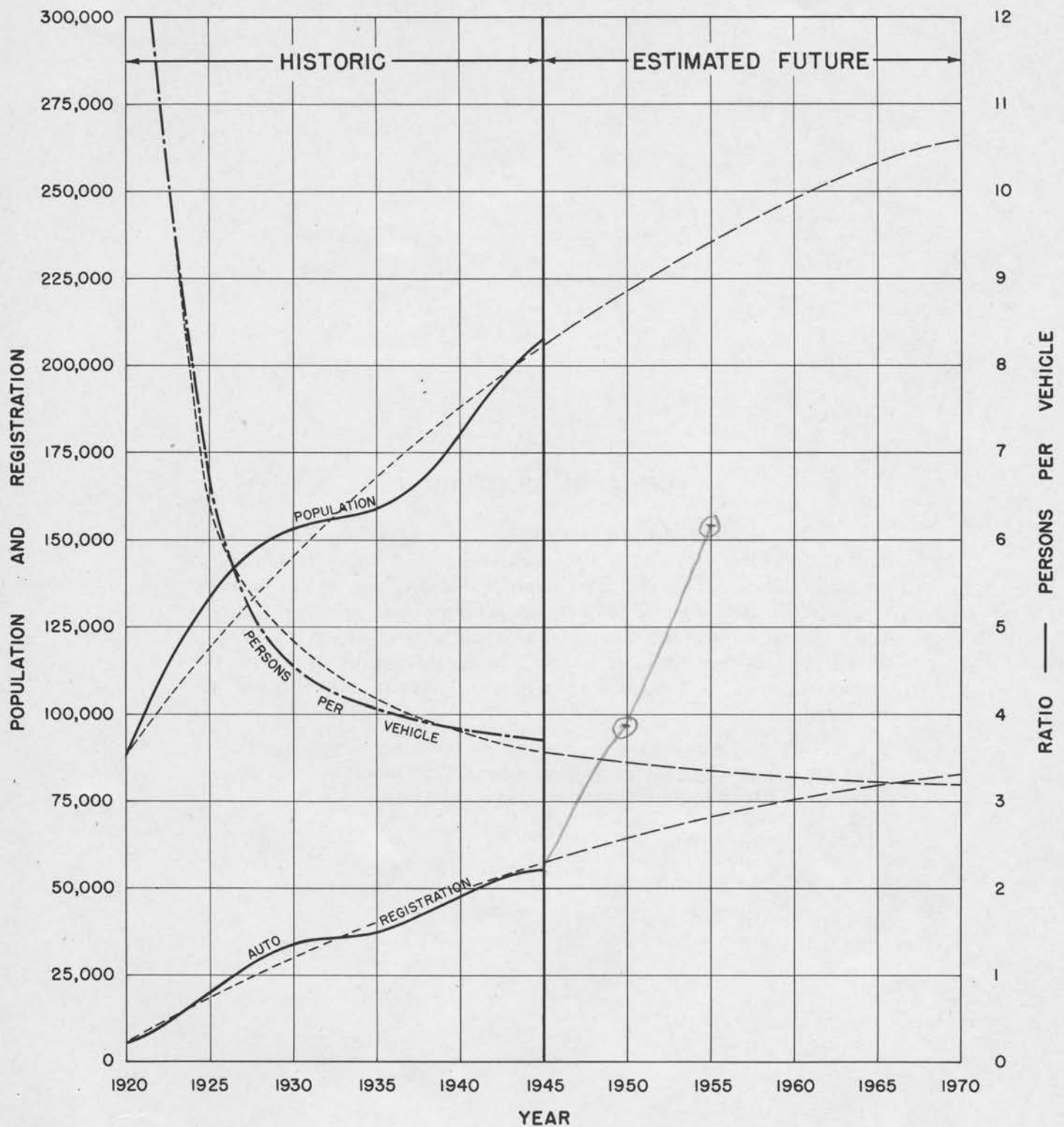
We are concerned with the Tampa Metropolitan area which includes the city property and the adjacent suburban developed area. Increases for the whole metropolitan area were 23.4% for 1945 over 1940 and 13% for 1940 over 1935. Thus, the Tampa Metropolitan area appears to be growing faster than the county and, for the 5 year period between 1940 and 1945, even faster than the State, whose percentage gain was 18.6.

For three census periods the Tampa Metropolitan area has represented an aggregate average of 81% of the county population. However, the gains in the metropolitan area are increasing more rapidly than for the county. It appears likely that by 1970 this area will represent 84% of the estimated county population.

Motor vehicle registration was based on a probable trend of the ratio of persons per motor vehicle. A reasonable assumption was made that the ratio in Hillsborough County would reach 3.2 persons per motor vehicle in 1970. This assumption was made only after careful study of three sources of information.

1. Comparative studies of local historic data with that of the entire country and individual states.
2. Present conditions as indicated by the aforementioned illustration on motor vehicle registration.
3. Population trend particularly from the standpoint of the increase of the negro, and from the type of interstate immigration.

The trend of motor fuel consumption was estimated much in the same manner. It was generally conceded that the ratio of motor fuel consumption per operating motor vehicle had about reached a constant in Florida. An empirical analysis allowing for a small increase developed a trend that reasonably agreed with present conditions. The net taxable fuel consumption was calculated directly from this ratio as applied to the estimated future registration.



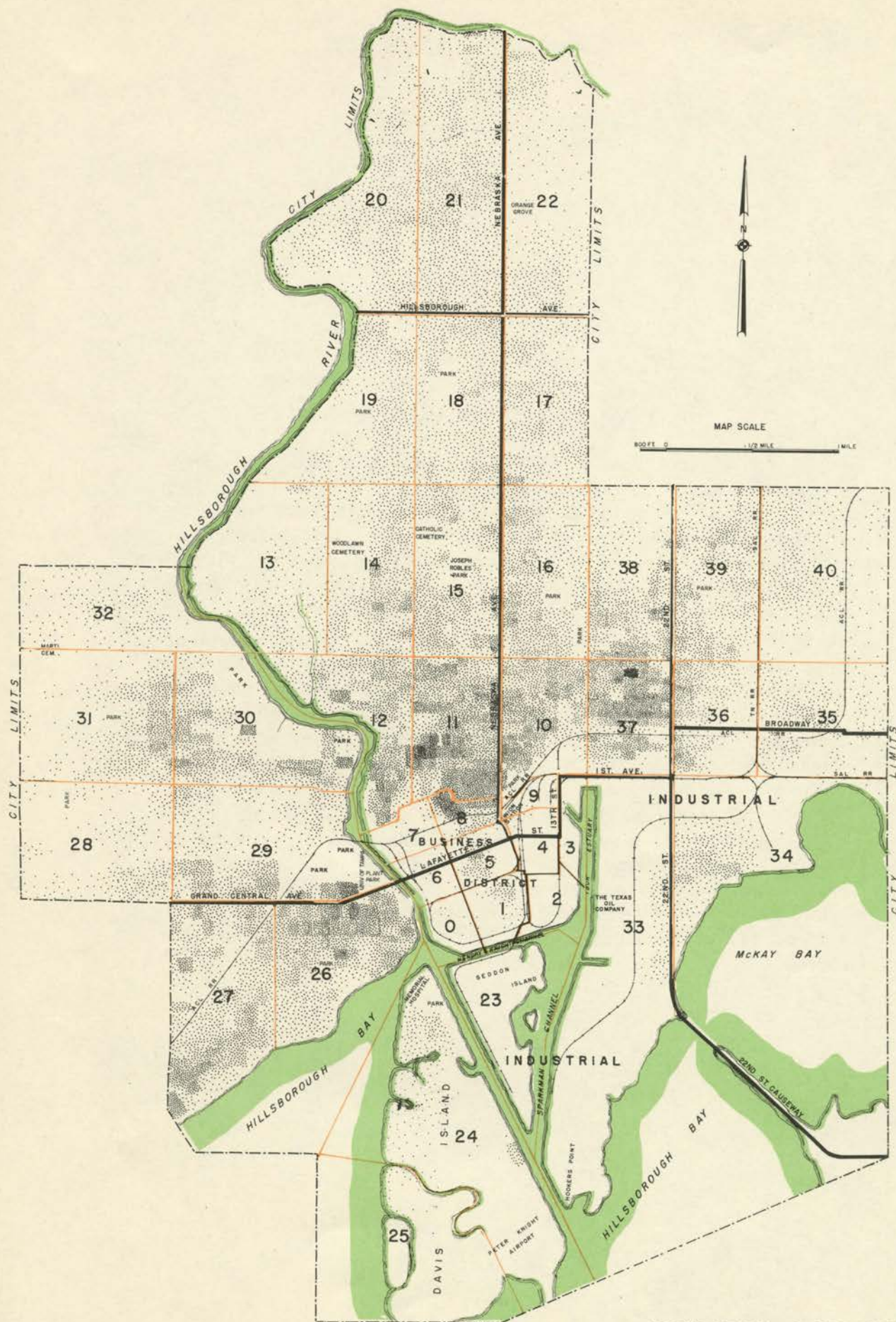
POPULATION AND VEHICLE REGISTRATION
HILLSBOROUGH COUNTY
TAMPA METROPOLITAN AREA SURVEY

1947

POPULATION DISTRIBUTION

On the basis of the 1940 Federal Census the population distribution chart for the City of Tampa was prepared as shown on the opposite page. Each dot on the chart signifies the residence of five persons. Large parks, golf courses, cemeteries, playgrounds and key railroad lines have been indicated along with a layout of the existing State Maintained road system through Tampa. Under favorable conditions the predicted growth will occur first in areas of the city not now entirely inhabited.

This map was an aid in determining the areas where population might be expected to increase, and was utilized in estimating the anticipated 1970 internal traffic volumes on a zone basis.



LEGEND

EACH DOT SIGNIFIES THE RESIDENCE LOCATION OF FIVE PERSONS
SURVEY ZONES AND LIMITS ARE OUTLINED ON MAP

POPULATION DISTRIBUTION TAMPA METROPOLITAN AREA SURVEY

1947

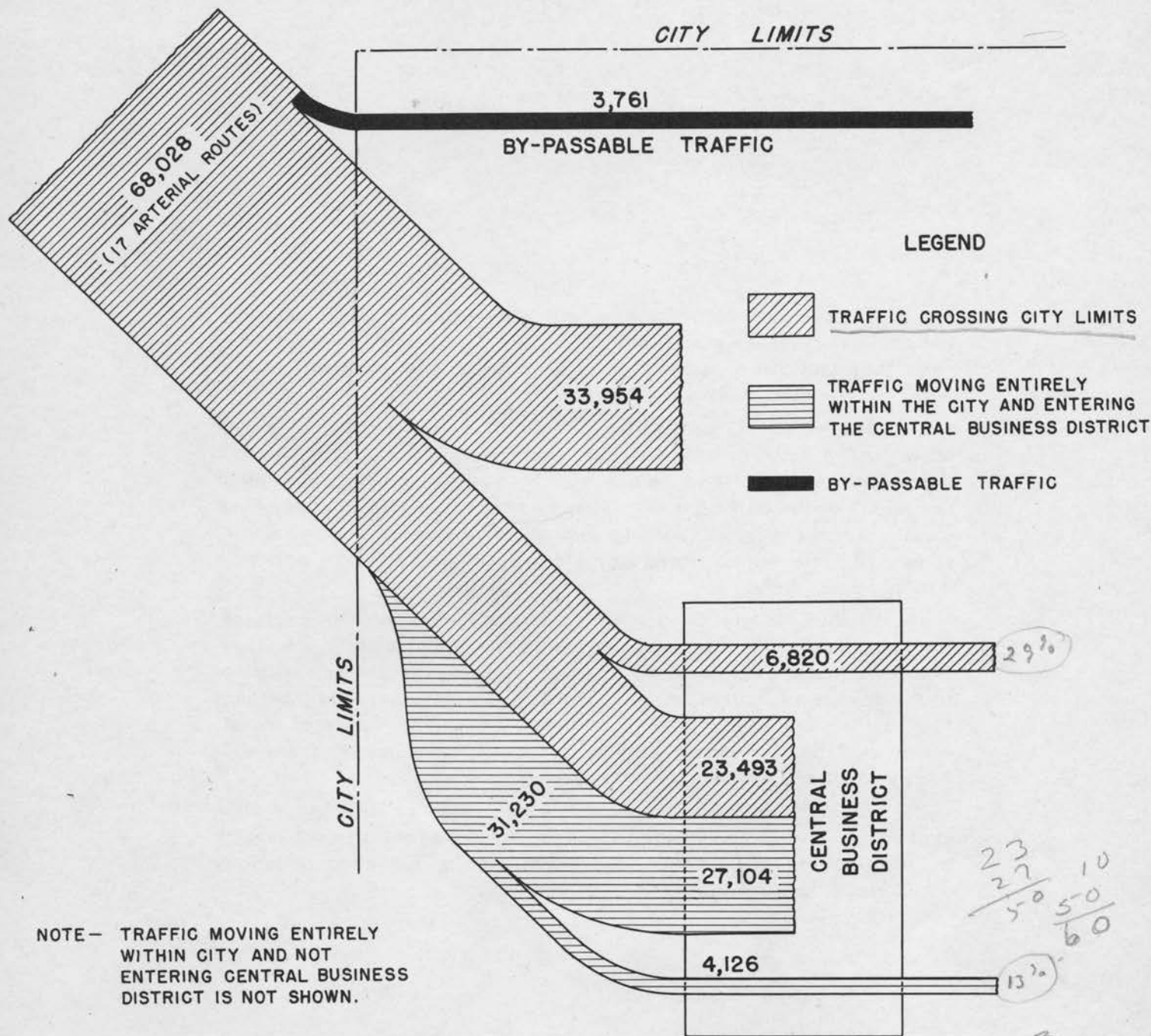
6 5
 6 3 7
 3 2 4
 12 3
 1 7 7

HIGHWAY AND STREET IMPROVEMENTS

Traffic problems of the Federal, State and Local governments in urban areas merge and cannot be separated from each other on any natural basis. Having thought in terms of rural roads for so many years, the inclination of State and Federal engineers on first approaching city problems was to regard urban congestion as a hindrance to the flow of inter-city and interstate traffic and to try to expedite travel by the construction of routes skirting the edge of the urban areas.

While city by-pass routes do have a proper place in a well designed system of traffic arteries, the common impression that such routes constitute a complete or substantially adequate solution is not well founded. The root of the fallacy lies in the fact that on main highways approaching the city, especially the larger ones, a very large part of the traffic originates in or is destined to the city itself. It cannot be by-passed.

The larger the city the larger is the proportion of traffic on the main approach highways that is thus essentially concerned with the city. From records assembled by the Public Roads Administration, it has been estimated, for the population group of cities within which Tampa falls, that 85 per cent of the inbound traffic movements are city bound — only 15 per cent of the movements would be interested in avoiding the urban area.



AVERAGE DAILY
ORIGINS AND DESTINATIONS OF TRAFFIC
IN THE
TAMPA METROPOLITAN AREA
1946

Handwritten calculations:

$$\begin{array}{r} 23 \\ 27 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 10 \\ 50 \\ \hline 60 \end{array}$$

$$\begin{array}{r} 23 \\ 27 \\ \hline 50 \\ 11 \\ \hline 61 \end{array}$$

$$\begin{array}{r} 6820 \\ 4126 \\ \hline 10946 \end{array}$$

Other handwritten notes: 11/61, 20, 50/61

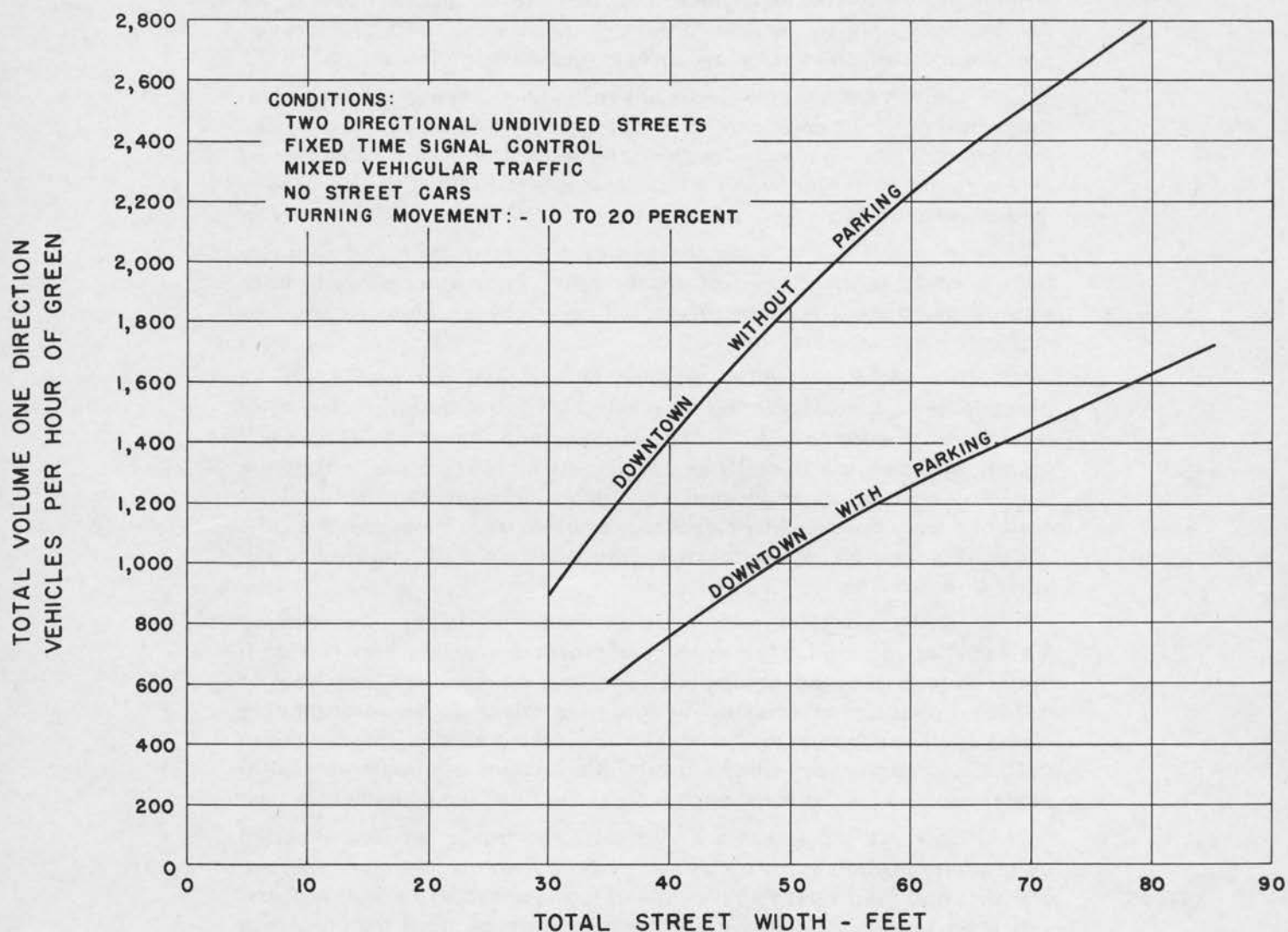
Curb parking entails a most serious restriction on street capacity, becoming progressively more critical in direct proportion to the traffic congestion and hence, reaching its peak in the downtown section where interference and turmoil are at their worst.

The effect of curb parking is almost as serious on the wider streets as on those of narrow width, and reduces the capacity beyond the proportion of the street so utilized, because the operation of getting in and out of the parking areas impede and congest traffic in the travel lanes. In general, curb parking and street intersections at grade in congested areas reduce traffic carrying capacity of a street by approximately 50 per cent.

Delays, congestion and traffic hazards have been in evidence for some time in the Tampa Metropolitan Area. Particularly are these situations found true along the principal highways and streets leading to the downtown business district. Traffic using these routes in traveling to and from sections beyond the metropolitan limits, plus local movements and the downtown parking problems have caused these unhappy conditions which are steadily becoming worse.

One of the most important facts disclosed in these traffic studies and re-affirmed by the Tampa Survey was that traffic converged on principal routes; — hence the importance of providing adequate facilities for those locations.

VOLUMES OF MIXED TRAFFIC THAT CAN ENTER AN INTERSECTION FROM ONE DIRECTION
UNDER AVERAGE CONDITIONS OF TURNING MOVEMENT AND PEDESTRIAN TRAFFIC



VARIATION IN INTERSECTING STREET CAPACITY
WITH STREET WIDTH

The problems involved in selecting the location and determining the designs for municipal highway development are far more complicated than those for rural roads. Costs of such improvements are so tremendous that it is imperative to guarantee against mistakes. This can be done only by the elimination of guess work, and by thorough preliminary traffic and economic surveys and investigations.

Only in the past few years has recognition been given to the fundamentals of traffic engineering. That this recognition is being rewarded is evidenced, as an example, by the development of the so-called limited access routes or throughways which have proved that they can accommodate and facilitate heavy traffic movements within urbanized areas.

In order not to be too shocked at the construction and property costs involved in these types of urban highways, it is necessary to back up and get a clear concept of the relation between highway use and highway improvements.

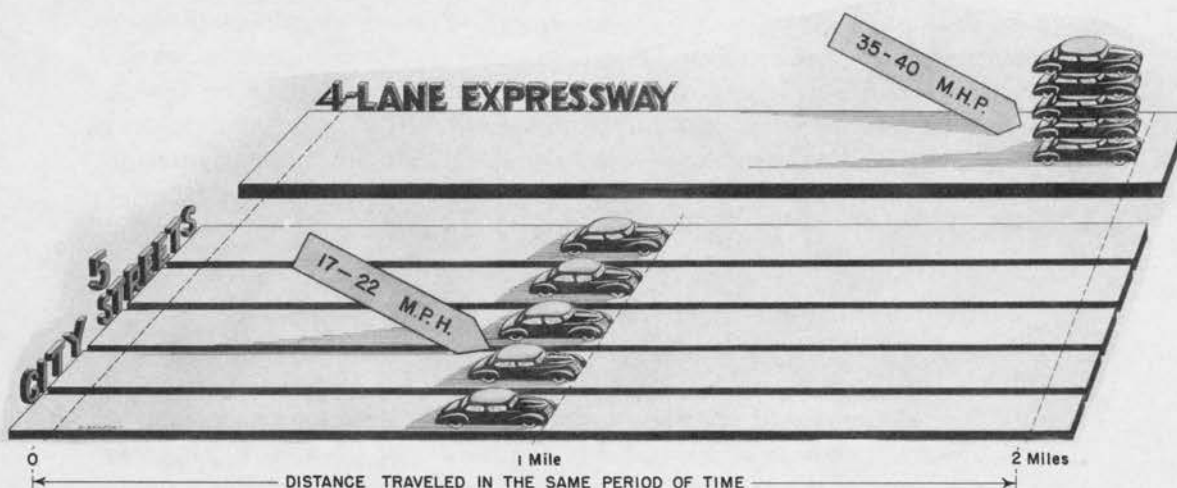
If a roadway facility is to be so designed that traffic will be properly served, consideration must be given to the brief but regularly recurring rush hour periods. Traffic volume during these peak hours will usually approximate from 10 per cent to as high as 15 per cent of the total traffic for an average weekday. However, peak-hour traffic flows are not evenly balanced by direction. So often as to be almost the rule, the peak-hour flow is two-thirds in one direction and one-third in the other direction.

Lane capacity, therefore, is an important factor in estimating the facilities required. The maximum practical working capacity of a traffic lane is reached on facilities carrying an uninterrupted flow of traffic when a higher volume will cause the drivers to be unreasonably restricted. For urban areas the maximum working capacity for a modern multi-lane expressway with no grade intersections approximates 1,500 passenger cars per hour for each lane in the direction of heavier travel.

Plate No. 16 graphically portrays the traffic services provided by a modern urban expressway as compared with a normal city street. Statistics and field surveys have proved that one modern urban expressway with four 12 foot lanes will accommodate as much traffic as five ordinary city streets either 40 feet wide without parking or 68 feet wide with parking. Each motor vehicle can go approximately twice as far on the expressway in the same period of time.

URBAN EXPRESSWAY AND CITY STREET CAPACITIES

- ONE MODERN 4-LANE URBAN EXPRESSWAY WILL ACCOMMODATE AS MUCH TRAFFIC AS FIVE ORDINARY CITY STREETS EITHER 40-FT. WIDE WITHOUT PARKING OR 68-FT. WIDE WITH PARKING.
- EACH VEHICLE CAN ALSO GO APPROXIMATELY TWICE AS FAR ON THE EXPRESSWAY IN THE SAME PERIOD OF TIME.



STATE ROAD DEPARTMENT OF FLORIDA,
DIVISION OF RESEARCH AND RECORDS

LIMITED ACCESS ROUTES OR THROUGHWAYS

While highway design must in all instances be related directly to the traffic requirements at specific locations, it is most important to have some definite standards to follow. The American Association of State Highway Officials have evolved and promulgated several important policies regarding standards of design covering principles of alignment, grade, sight distance, width of right-of-way and pavement, intersection layouts, etc., which are safe guides to follow.

Too often in urban highway developments the tail is permitted to wag the dog. Instead of the design controlling the right-of-way widths the right-of-way determines the design. The temptation to permit this prostitution is understandable because right-of-way costs range from 70 to 300 per cent of construction costs. But it is precisely because the whole improvement is so costly that the design standards must not be lowered, for unless design standards are adequate, the improvement will not provide the necessary relief.

Traffic widths and the number of lanes obviously are not subject to much adjustment to meet right-of-way conditions. Standards for lane widths have been recurrently revised so that now 12 feet is recommended. There can be no denial of the added safety and ease of driving afforded by the greater lateral clearances to traffic in adjoining lanes thus provided. The best features of limited access or throughway design in urban areas can be retained by the inclusion of service roads. This necessary servicing of abutting property owners can be undertaken with no loss to traffic movements on the main route.

For the limited access or throughway type of highway such as is proposed for Tampa, where grade separation at street intersections will be practical in only a few instances, traffic capacities will not reach the volumes that can be handled over the ideal expressway. The throughway such as is proposed is in the nature of an arterial highway or street with partial control of access. For the most part access connections are to be developed in conjunction with a grid type of cross streets wherever feasible major intersections will be separated. On such routes intersection control and the limitation of parking will be necessary and paralleling service streets will be provided where and when required for adjacent property owners.

In the more heavily built up urban areas to meet the anticipated large volumes of vehicles the carrying capacity of each lane of the 4 lane facility must handle 850 vehicles. Without proper consideration of the intersection and parking problems, these capacities will not be reached; in fact, they can not be expected to be greater than volumes in the range of 400 to 500 per lane per hour.

The throughways recommended for Tampa have been located

so as to provide adequate facilities for the major desire lines of movement as was depicted on Plate No. 9.

With the terrain of the city practically at sea level and with but little difference in elevation, grade crossings may not often be eliminated. However, crossings at grade will be limited to specified street intersections, those that carry important traffic volume and are of enough importance to be included in the street grid network of arterial streets.

NORTH-SOUTH ROUTE (Central Avenue)

At present Florida and Nebraska Avenues are utilized as two-way arterial routes for north-south vehicular movements with crossings permitted at every street intersection. As a result, both streets are heavily traveled and without adequate pavement widths, traffic congestion has become acute. Especially is this found true when to this travel is added the local movements to and from the many small businesses and commercial enterprises which line those avenues on both sides for the greater part of their lengths. These streets are required to provide space for curb parking which is deemed so necessary for the business developments. The type of curb parking is usually on the short time in and out basis which contributes greatly to the traffic turbulence.

Adequate improvements to these two avenues would involve considerable street widening and restrictive limitations on parking privileges. Such a program would render useless many thriving businesses, involve right-of-way expenditures beyond all reason and in a large measure destroy the uses for which the streets can best be utilized. Measures of this nature would be too drastic and are not given serious consideration.

A desirable alternative is to project an additional route of the limited access design through the same territory that Florida and Nebraska Avenues serve. On such a route motor vehicles would move with greater ease and efficiency and Florida and Nebraska Avenues could then be returned to their normal usages.

Central Avenue meets the requirements as the best location for serving the greatest number of motorists. The proposed improvements along Central Avenue provide for two lanes of through travel in both directions. On either side of this throughway adequate right-of-way widths provide ample space for the construction of streets to service adjoining property owners. Cross-overs connecting the throughways and the service streets are to be built where needed. A median strip or parkway separates the north and south lanes of travel. Parkways also separate the through lanes from the service streets.

One of the principal features of an expressway is the freedom from grade intersections. Cross traffic is facilitated by means of under or over-passes. Unfortunately the prevailing low, level terrain in Tampa will not permit construction of grade separations without serious damage to adjoining property. Since this would be too costly and at best could not be classed as desirable, it is not recommended that all grade intersections be eliminated, but that crossing of the limited access route be permitted only at intersections with arterial streets, and that these intersections be controlled by signals.

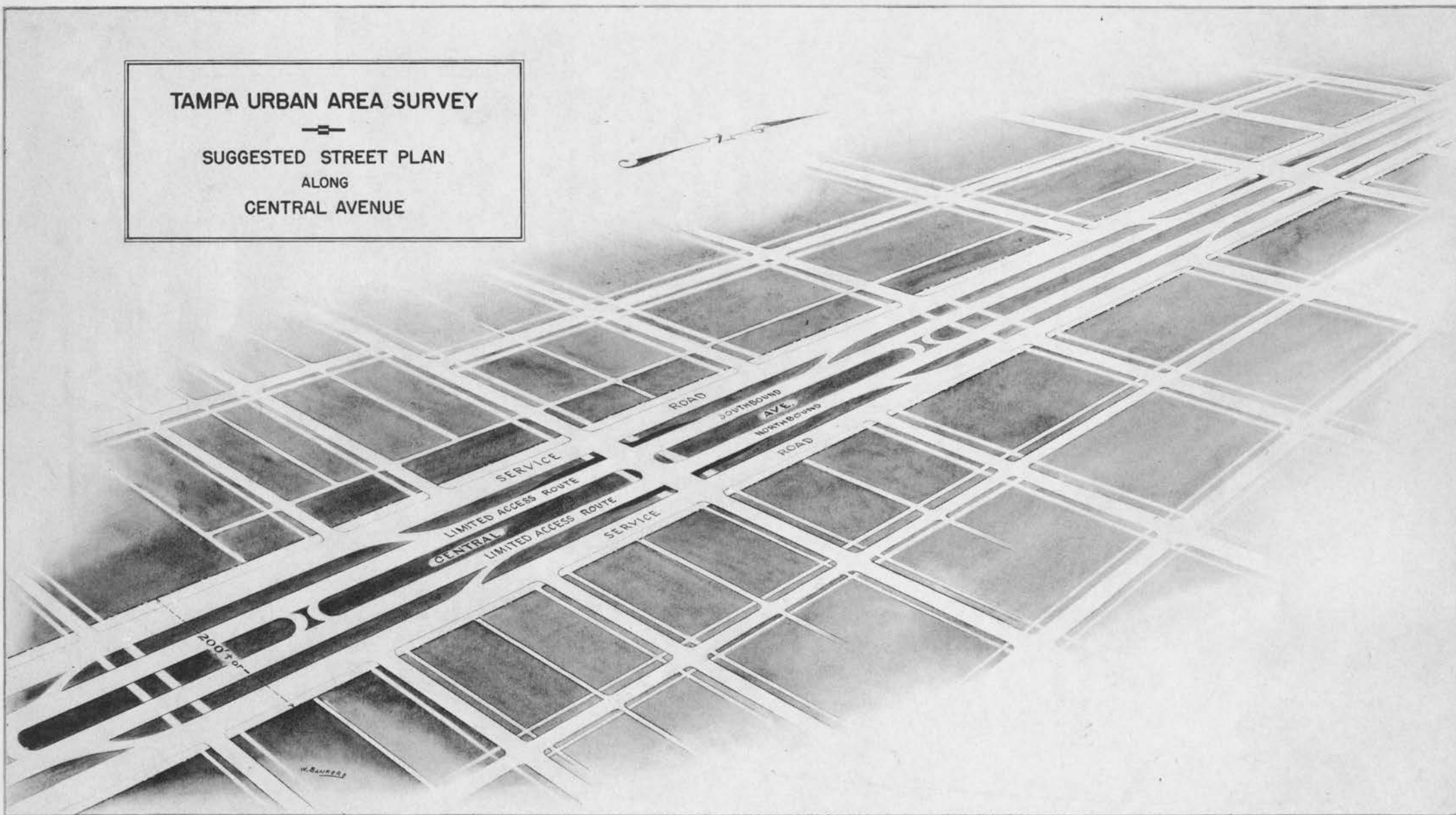
Central Avenue begins as a throughway just north of the Temple Terrace Highway, a short distance north of the present city limits. Connections will be provided between Florida and Nebraska Avenues and an overpass constructed over the Seaboard Air Line Railroad. The Route will continue south along Central Avenue bridging the Hillsborough River. At the intersection of Columbus Drive, proposed as the east-west limited access route, a grade separation is contemplated. Connections will be provided for all turning movements at this important intersection.

Just below 7th Street or Broadway the two lanes of travel will diverge and where the throughways enter the business district southbound traffic will be routed along Pierce Street and Jefferson Street will be limited to northbound traffic. From Washington Street south it is proposed to widen Jefferson Street within the present building line limitations. In all probability parking will have to be restricted at certain locations within the central business district.

This north and south route will connect with main east and west street arteries in the central business district which are proposed along Lafayette and Jackson Streets. The southerly terminus will be at the junction of Jefferson and Platt Streets.

TAMPA URBAN AREA SURVEY

SUGGESTED STREET PLAN
ALONG
CENTRAL AVENUE



EAST-WEST ROUTE (Columbus Drive)

The main urban arteries of travel to and from the east and the south are at present Hillsborough and Broadway Avenues and 4th Street. The same general criticisms and design recommendations apply to these routes as have already been outlined for the north-south route.

Improvements now under way along Hillsborough Avenue are limited to a right-of-way width which makes it inadequate for the limited access type of throughway. The southerly route via Broadway and 4th Street is located through highly developed industrial areas criss-crossed with railroad spurs and sidings. These streets which would normally provide reasonably adequate service to commercial and industrial sites are being required to handle a large volume of traffic that has no business there but simply passes through the area to reach destinations beyond. The conditions are most undesirable and if any improvements are to be made in the Tampa area this section should be given primary consideration.

Travel between the Lakeland-Plant City area and Tampa constitutes the largest year round traffic movement on any rural highway in the State. The greater portion of these movements are now routed along streets through the heavy industrialized areas where railroad crossings and 90 degree street angle turns contribute greatly to the delay and hazards of driving.

The route along Columbus Drive is very similar in design to that proposed for Central Avenue. It will connect with U. S. 92 (Hillsborough Avenue) at the present junction with U. S. 41, and will continue along the present location southerly to a junction with State Roads 574 and 60. From this point it is projected due west along Columbus Drive, crossing over Central Avenue, and continuing thence west to North Boulevard. From North Boulevard Columbus Drive would continue westerly with a modified street design as one of the major street arterial routes.

Railroad separations are to be provided over the Atlantic Coast Line Railroad and the Seaboard Air Line Railroad where these railroads cross the facility. Street crossings at grade are to be limited to intersections of streets included in the grid system of arterial streets.

TAMPA URBAN AREA SURVEY
—S—
PROPOSED PLAN AT INTERSECTION
OF
COLUMBUS DRIVE AND CENTRAL AVE.



THE SOUTH-WEST ROUTE

An ideal solution for facilitating the heavy southwesterly flow of traffic presents itself in connection with the current agitation for removal of the ACL tracks from downtown Polk Street and their westerly extension to Port Tampa.

The main shops of the ACL were originally located at Port Tampa which was afforded passenger and freight service. Since then, in the interest of economy, the shops have been relocated in East Tampa and the passenger service abandoned. Freight service is continued, however, handling primary petroleum products from tankers unloaded at Port Tampa.

The freight line runs through one of the most promising residential areas around Tampa. From the standpoint of desirable city development the few industries now located along the ACL tracks in Southwest Tampa could well be transferred to the industrial area in Southeast Tampa.

Notwithstanding a considerable investment of several millions in its terminal at Port Tampa, the Railroad might find it economical to abandon the Port Tampa track and locate its terminal in the waterfront Southeast Tampa dock and industrial area, as recommended in the able survey and report which was prepared for the City by Simon-Sheldrick Company of Jacksonville.

This would permit the acquisition of the ACL right-of-way for use as a limited access route in the area, which would be of much greater value to the entire metropolitan area than is the railroad.

A substantial consideration for this right-of-way, together with other concessions and benefits the City is in position to offer, might well influence the ACL to fall in with the plan, which would effect one of the greatest steps of progress in Tampa's history.

The proposed south-west route would tie in at Cleveland Avenue where the north-south route, along the present Willow Avenue intersects the railroad right-of-way. Access from the central business district and Bayshore Boulevard would be limited to arterial streets in the grid pattern.

As stated at the beginning of this particular discussion this plan would be the ideal solution. Realizing that perhaps it could not be effectuated immediately or conceivably not at any time, we are suggesting as an alternative a less desirable though expedient plan in the hopes that if adopted it will be considered temporary only.

Probably because it is discouraging to forsake a plan which is obviously best and seek a less desirable solution, the selection of an alternate route for Southwest Tampa proved difficult. It should be an integral part of the over-all plan, appropriately connecting with limited

access routes of similar design and should not tend to funnel more traffic into the already congested downtown area.

A logical location for the route at its northerly end would have been South Boulevard Avenue. But in its course south this street runs through the Fair Grounds where additional right-of-way could not be procured, and where it is closed to traffic while the State Fair is in operation. Congestion in this location is already bad and the proposed use would make it intolerable.

The location finally selected will extend from Columbus Drive at its intersection with North Boulevard, cross the Hillsborough River over a new structure and angle through blocks where right-of-way costs would not be excessive, to the intersection of Gray Street. From here it runs south between Orleans and Oregon Streets to Swann Avenue.

Beyond this point and to Bayshore Boulevard (a distance of about four blocks) utilization of two parallel one-way streets a block apart is suggested. By routing south-bound traffic over the westerly street and north-bound over the east street the congestion and turbulence at the intersection with Bayshore Boulevard will be greatly reduced.

This proposal contemplates use of Bayshore Boulevard and Gandy Boulevard to the east end of Gandy Bridge as a part of the limited access route system. The facilities thus developed would continue to be useful even though or when the limited access route could be transferred to the ACL right-of-way.

The estimated costs of improvements for the three limited access routes as proposed are:

ROUTE	LENGTH (in miles)	ESTIMATED COSTS		
		ROADWAY	RIGHT-OF-WAY	TOTAL
North-South (Central Ave.)	7.90	\$ 4,108,000	\$1,622,000	\$ 5,730,000
East-West (Columbus Drive)	8.50*	2,350,000	2,400,000	4,750,000
South-West (Bayshore Blvd.)	8.80	3,675,000	1,000,000	4,675,000
TOTALS	25.20	\$10,133,000	\$5,022,000	\$15,155,000

*2.7 miles of construction outside urban area. Remaining mileage within urban area.



BAYSHORE BOULEVARD

STATE MAINTAINED ROUTES

To complement the proposed limited access thoroughways there is being recommended a system of State Maintained connecting links within the limits of the urban area which will require revision, changes and additions to the presently maintained connections.

There are now 10 routes under the jurisdiction of the State Road Department leading into and out of Tampa's Metropolitan Area. In actual usage these maintained highways in the urban area become for the most part the major and more important arteries for the city. As they approach the city local traffic is attracted in ever increasing numbers. By the time they converge on the central and downtown districts traffic volumes have become so large that, with curb parking and cross street movements, traffic congestion results, which seriously impairs the usefulness of the facilities.

Traffic congestion has been defined as a condition resulting from a retardation of movement below that normally necessary for contemporary street users. Congestion is due to three general causes: (1) the inability of the streets to hold a sufficient number of vehicles and to pass them at an adequate speed; (2) the including in the traffic stream of elements which hamper its freedom of flow; (3) the improper or inadequate direction and control of traffic.

Reasonably good results can be expected to the street arteries by (1) widening where necessary and usually within the existing building lines; (2) appropriate traffic light control; (3) in some instances recourse to a system of one-way streets; (4) re-routing; (5) restrictions on curb parking even to the extent of no parking at all between certain locations or forbidden during rush hours.

Provisions should be made on all of these additional State maintained connecting links where congestion occurs for pavement widths sufficient to provide at least two lanes of moving traffic in both directions in addition to any parking spaces. Where the right-of-way widths are narrow and additional widths cannot be obtained except at excessive cost, the two lanes of travel in both directions should be maintained even if this requires restrictions to, or the elimination of curb parking.

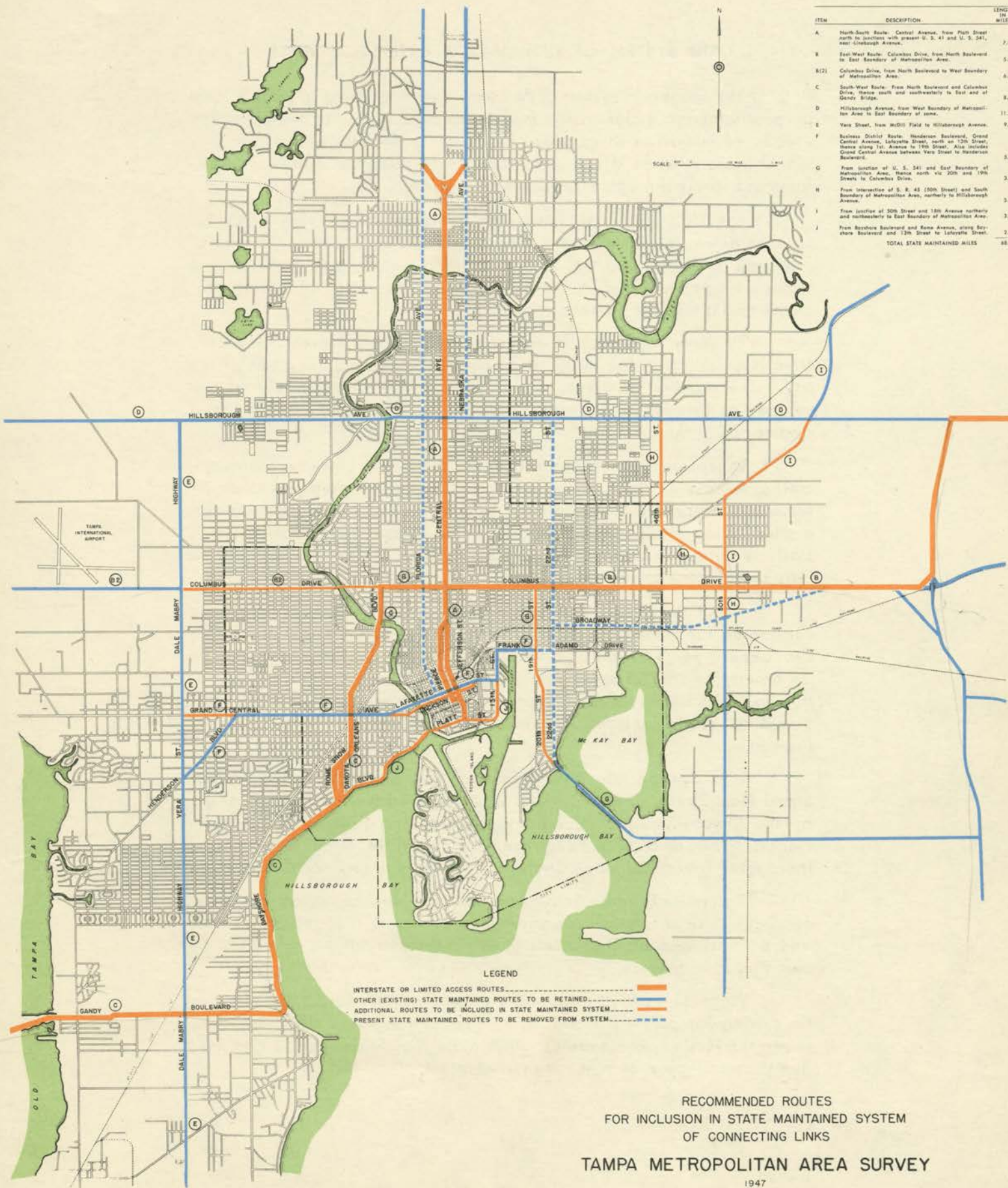
In a few specific instances one-way traffic movements will aid in solving traffic problems. The installation and correct timing of traffic signals to be placed only at intersections where they may be expected to accomplish some good is a feature in itself that, if properly handled, will furnish additional worthwhile results. Within the borders of the Tampa Metropolitan Area as delimited in this survey there are 53.2 miles of roads and streets under State Maintenance. In the overall recommended plan of improvements the State Maintained mileage will total 68.1 miles, representing an increase of 14.9 miles.

**TABULATION OF RECOMMENDED ROUTES AND MILEAGES
OF STATE MAINTAINED CONNECTING LINKS
WITHIN URBAN AREA LIMITS OF TAMPA**

ITEM	DESCRIPTION	LENGTH IN MILES
A	North-South Route: Central Avenue, from Platt Street north to junctions with present U. S. 41 and U. S. 541, near Linebaugh Avenue.	7.9
B	East-West Route: Columbus Drive, from North Boulevard to East Boundary of Metropolitan Area.	5.9
B(2)	Columbus Drive, from North Boulevard to West Boundary of Metropolitan Area.	6.0
C	South-West Route: From North Boulevard and Columbus Drive, thence south and southwesterly to East end of Gandy Bridge.	8.8
D	Hillsborough Avenue, from West Boundary of Metropolitan Area to East Boundary of same.	11.5
E	Vera Street, from McDill Field to Hillsborough Avenue.	9.1
F	Business District Route: Henderson Boulevard, Grand Central Avenue, Lafayette Street, north on 13th Street, thence along 1st Avenue to 19th Street. Also includes Grand Central Avenue between Vera Street to Henderson Boulevard.	5.6
G	From junction of U. S. 541 and East Boundary of Metropolitan Area, thence north via 20th and 19th Streets to Columbus Drive.	3.8
H	From intersection of S. R. 45 (50th Street) and South Boundary of Metropolitan Area, northerly to Hillsborough Avenue.	3.1
I	From junction of 50th Street and 18th Avenue northerly and northeasterly to East Boundary of Metropolitan Area.	3.7
J	From Bayshore Boulevard and Rome Avenue, along Bayshore Boulevard and 13th Street to Lafayette Street.	2.7
TOTAL STATE MAINTAINED MILES		68.1

TABULATION OF RECOMMENDED ROUTES AND MILEAGES OF STATE MAINTAINED CONNECTING LINKS WITHIN URBAN AREA LIMITS OF TAMPA

ITEM	DESCRIPTION	LENGTH IN MILES
A	North-South Route: Central Avenue, from Platt Street north to junction with present U. S. 41 and U. S. 541, near Lindeburg Avenue.	7.9
B	East-West Route: Columbus Drive, from North Boulevard to East Boundary of Metropolitan Area.	5.9
B(2)	Columbus Drive, from North Boulevard to West Boundary of Metropolitan Area.	6.0
C	South-West Route: From North Boulevard and Columbus Drive, thence south and southwesterly to East end of Gandy Bridge.	8.8
D	Hillsborough Avenue, from West Boundary of Metropolitan Area to East Boundary of same.	11.3
E	Van Street, from 9000 Field to Hillsborough Avenue.	0.1
F	Business District Route: Henderson Boulevard, Grand Central Avenue, Lafayette Street, north on 13th Street, thence along 1st Avenue to 19th Street. Also includes Grand Central Avenue between Van Street to Henderson Boulevard.	5.6
G	From Junction of U. S. 541 and East Boundary of Metropolitan Area, thence south via 20th and 19th Streets to Columbus Drive.	3.8
H	From Intersection of S. E. 43 (20th Street) and South Boundary of Metropolitan Area, northwesterly to Hillsborough Avenue.	3.1
I	From Junction of 50th Street and 18th Avenue northwesterly and northwesterly to East Boundary of Metropolitan Area.	3.7
J	From Bayshore Boulevard and Rome Avenue, along Bayshore Boulevard and 13th Street to Lafayette Street.	2.7
TOTAL STATE MAINTAINED MILES		66.1



GRID SYSTEM OF CITY MAJOR ARTERIAL STREETS

The usual grid system of city streets was designed to serve a local purpose and the major traffic movement on any one of them consists usually of numerous short trips. However, a minority of the trips originating along these streets extend for a considerable distance, downtown or entirely through or across the urban area.

The delaying interruptions of intersections in every block for such an extended trip add to the motorist's cost in time lost, extra gasoline used and wear and tear on his car, to say nothing of the wear and tear on his patience, which usually results in a lowering of driving efficiency and a tendency to take chances.

To serve this group of extended trips, arterial streets protected from intersecting traffic must be supplied to connect all sections of the city. The number of streets in the grid pattern which should be developed as arterial streets will depend on the volume of extended trips originating in the area.

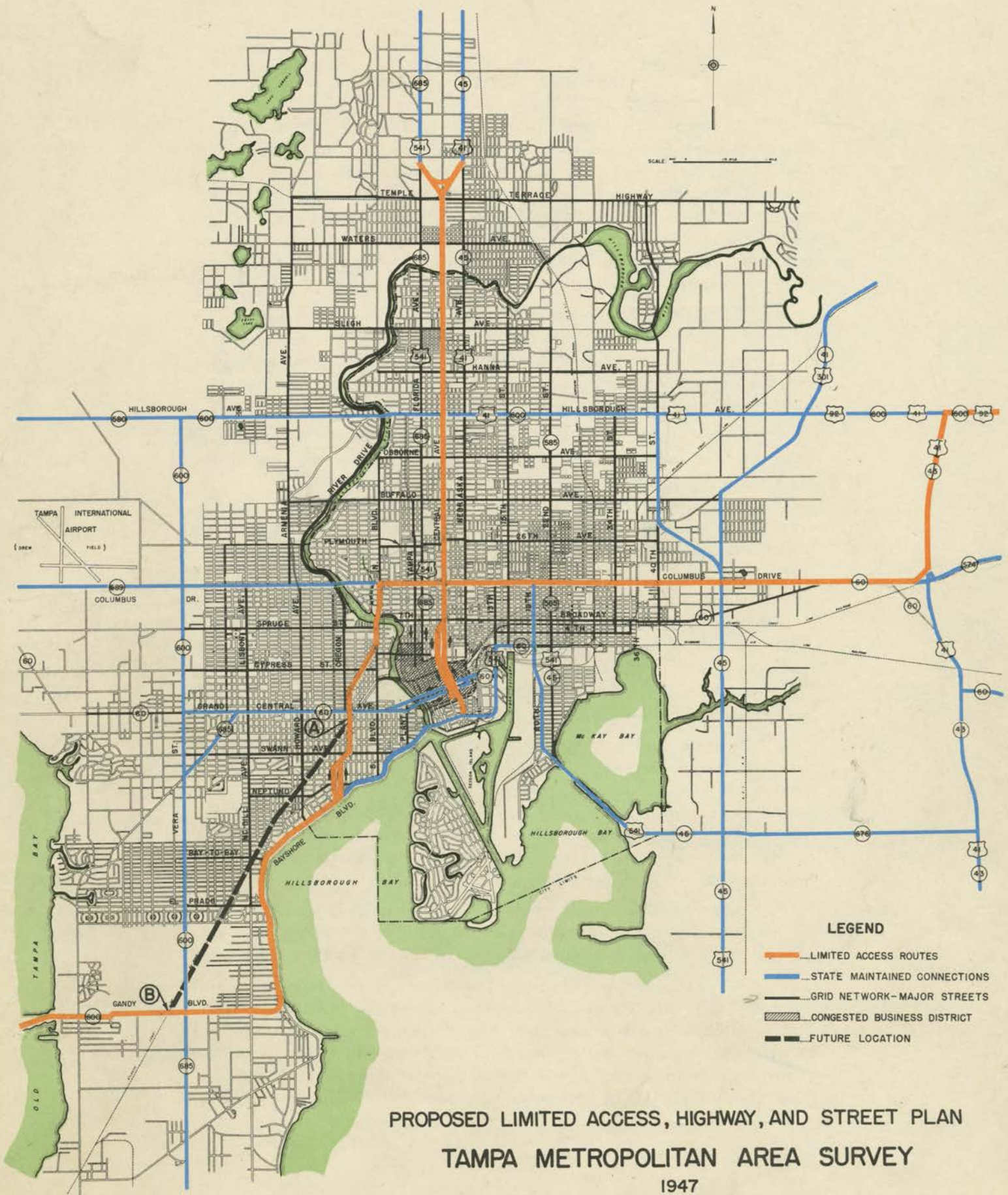
Except at intersections with other arterial streets and highways, traffic flowing on the grid network will be uninterrupted. At these intersections appropriate signal or signs controls should be placed in operation. Stop signs will be erected at all minor street crossings and traffic entering or crossing any street included in the network will be required to come to a full stop.

All of the streets included in the network will not, of course, be considered for immediate improvements. Some of them will require no changes for years to come. It would be well for the City to inaugurate an orderly priority of street improvement program with due consideration to immediately needed improvements. Later street improvements would be made in locations where developments are under way or impending.

It is appropriate that the report call attention to the "Major Street Plan-City of Tampa" which was prepared for the City of Tampa by the Simons-Sheldrick Company, a consulting firm at Jacksonville, Florida. This is a very comprehensive report in three sections and thoroughly covers the many angles so necessary in any city master plan.

Reference is made to this "Master Plan" for the reason that, after an analysis of the needs for street improvements, this report indorses and has included practically all of the recommendations submitted by that firm of engineers.

Plate 21 shows the ultimate overall street and highway system for solving Tampa's traffic problems. The color legend differentiates between the limited access routes, other State Maintained connecting links and the grid system of major or arterial streets.



ONE-WAY STREET SYSTEM

A number of streets approaching and in the central business district are recommended for conversion to one-way traffic operation. Traffic movements will be greatly expedited since one-way directional carrying capacities can be expected to increase volumes as much and more than 50 per cent. One-way streets will aid materially in handling peak load movements and there will be less internal friction. One-way operations virtually eliminate the most serious types of accidents, such as head-on collisions and opposite direction side-swipes.

Comparatively unrestrained access to the central business district of Tampa is provided only from the north. The other three sides are confined by water barriers. Railroad industrial tracks and spurs serving the industrial areas in immediate proximity to these waterways further complicate vehicular traffic problems.

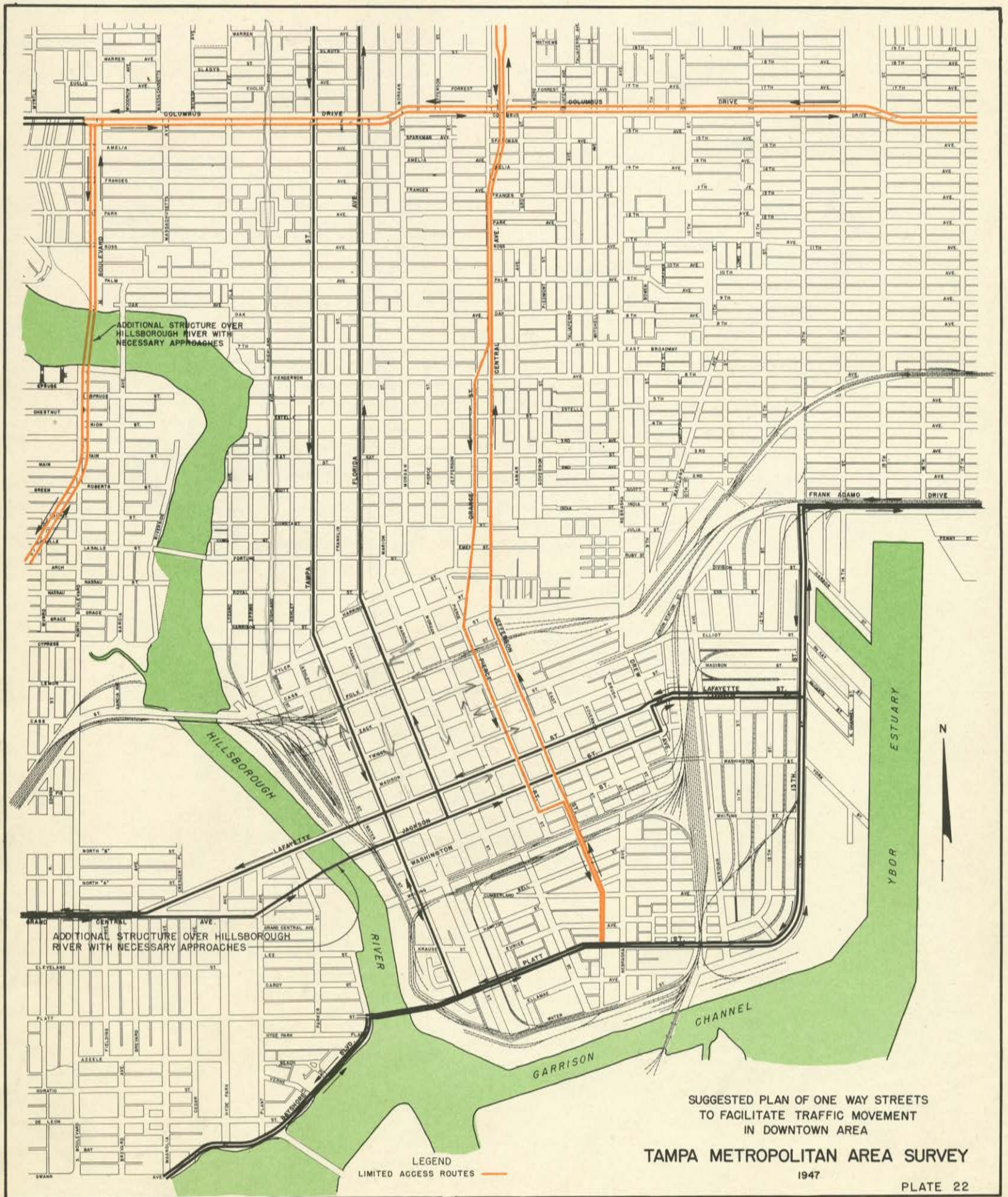
Traffic is funnelled into the business district from the west over three bridges spanning the Hillsborough River. From the east traffic must wind around streets adjacent to the water terminals and is required frequently to cross railroad tracks serving these same terminals. From these bottlenecks congestion often occurs. A partial solution is possible by converting some of the main streets into one-way thoroughfares.

Under such a proposal an additional structure will be required over the Hillsborough River by an extension of Jackson Street westerly to a junction with Grand Central Avenue. Lafayette Street would be used for west bound traffic and Jackson Street for east bound. Following this suggestion will materially aid east-west movements as well as relieve a serious bottleneck in the vicinity of the Lafayette Street Bridge.

To cope with north-south traffic Tampa Street can be converted to south bound movements as far south as Jackson, where two-way movements may be resumed. Florida Avenue can be used for north bound movements. At or near Buffalo Street both Tampa Street and Florida Avenue should continue as two-way streets. With the limited access route proposed along Central Avenue, north bound and south bound traffic would be amply cared for.

Later it will probably become desirable to increase the number of one-way streets. Only minor widening operations within the right-of-way limits will be necessary for streets in the downtown area.

While the selection of certain streets for one-way movements will improve the functional use of downtown streets, a revision of traffic signal installations will be required. At such a time the signals might well be arranged to permit better timing for varying traffic loads. A central control operating several signals would permit adjustments to meet unusual conditions. Use of pedestrian control signals should be extended.



ADDITIONAL STRUCTURE OVER
HILLSBOROUGH RIVER WITH
NECESSARY APPROACHES

ADDITIONAL STRUCTURE OVER
HILLSBOROUGH RIVER WITH
NECESSARY APPROACHES

LEGEND
LIMITED ACCESS ROUTES —

SUGGESTED PLAN OF ONE WAY STREETS
TO FACILITATE TRAFFIC MOVEMENT
IN DOWNTOWN AREA
TAMPA METROPOLITAN AREA SURVEY
1947
PLATE 22

BY-PASS ROUTES

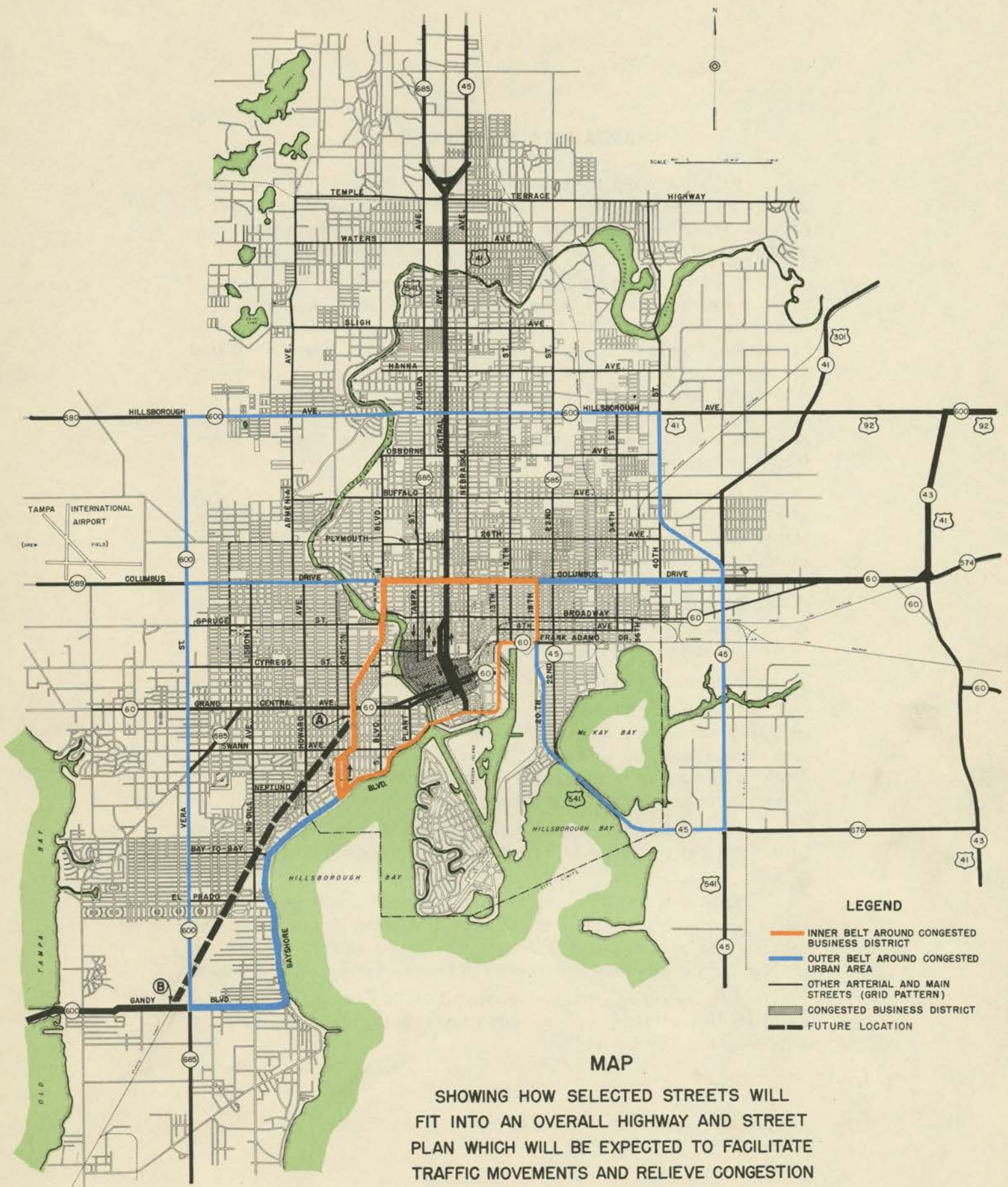
Although it was stated elsewhere in this report that by-pass routes will not solve the problem of urban congestion, there is still an important place for them in any comprehensive plan for handling highway traffic in any metropolitan area.

The accompanying map shows how the proposed system of limited access, State Maintained and major arterial street routes will provide ample facilities for by-passing the downtown business district and the adjacent congested area.

It will be noted that there are inner and outer belt lines on the east, north and west for the greater facilitation of these by-passable movements.

As an example:

There is a heavy volume of traffic entering the metropolitan area on State Routes 60 and 600 from the Lakeland-Plant City direction, a major portion of which is destined to the downtown or adjacent area but with a remaining substantial volume having destinations on the peninsula west or southwest of Tampa. With these by-passing belt lines it will not be necessary for any of such traffic to come nearer the congested area than Columbus Drive or Hillsborough Avenue, one of which each motorist will select depending upon his ultimate destination or the location of any intermediate stop he may desire to make. In addition to providing convenient, safe and fast by-pass routes to the benefit of such by-pass travelers, they will remove up to 15% of the traffic from the congested central business streets.



TAMPA METROPOLITAN AREA SURVEY

1947

RAILROAD TRACKS AND TERMINALS

As is too often the case, many cities and towns that owe their growth and sometimes their very existence to the pioneering railroads in previous years have expanded to such an extent that these same railroads present a serious handicap to future desirable developments.

It would not be too difficult to formulate plans for improvements to be carried out in future years which would eliminate these evils. But quite often, these face-lifting operations involve costs that run into unreasonable figures—into many thousands of dollars. These plans and ideas often can inflict undue hardships and as a result of too many conflicting interests they never pass the planning stages. Until such time in the future when these ideal plans do not appear too radical, practical remedies short of the ideal solution can be advanced that have possibilities of accomplishment.

In serving the docks and port facilities railroad tracks and spurs effectively surround the business district on three sides. Tracks leading to the Port Tampa terminals traverse the heart of the business district along Polk Street. A cluster of dray and warehouse tracks in the vicinity of Whiting Street present another adverse situation. These lines bisect the business district from east to west and present serious traffic problems. Reasonable measures can be recommended which will materially improve conditions in the downtown area.

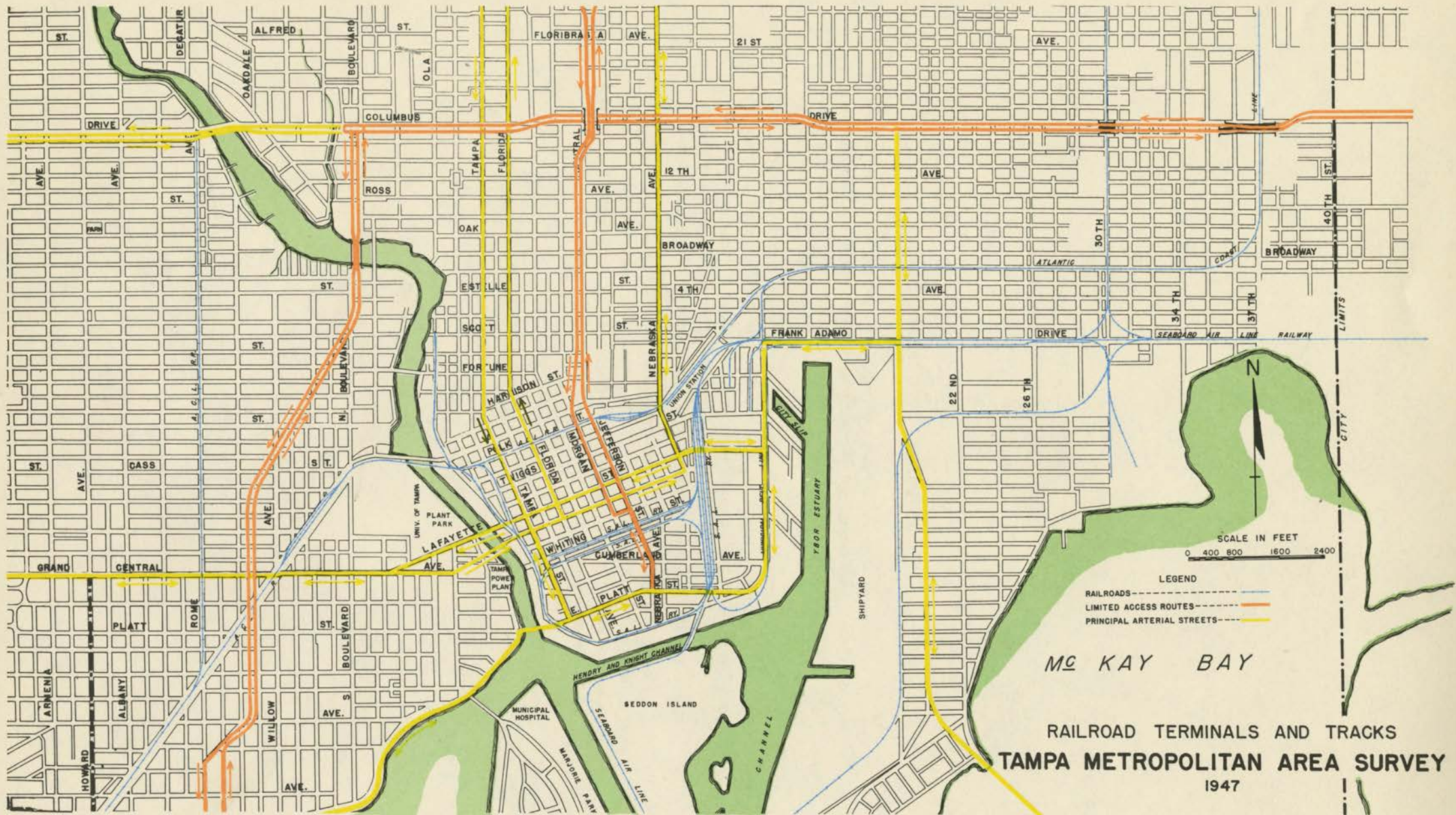
Several plans for improving these conditions are suggested:

(1 and 3) Remove ACL tracks on Polk Street between Ashley and Jefferson Streets. Construct on new location along Columbus Drive with connections to existing ACL tracks at 37th and at Rome Streets. Track to be located in parkway between divided lanes. A railroad lift span is required over the Hillsborough River.

(2) Remove dray and warehouse tracks in vicinity of Whiting Street and place at location acceptable to Railroads in eastern section of City.

(2 and 3) Make such changes and additions in SAL and ACL tracks via and in the vicinity of Meridian and Water Streets as may be necessary to provide for ACL freight movements to Port Tampa. Remove ACL tracks on Polk Street between Jefferson and Ashley Streets or

(3) Permit ACL track now located on Polk Street to remain but positively limit all trains and switching movements to between the hours of midnight and 6:00 A.M.

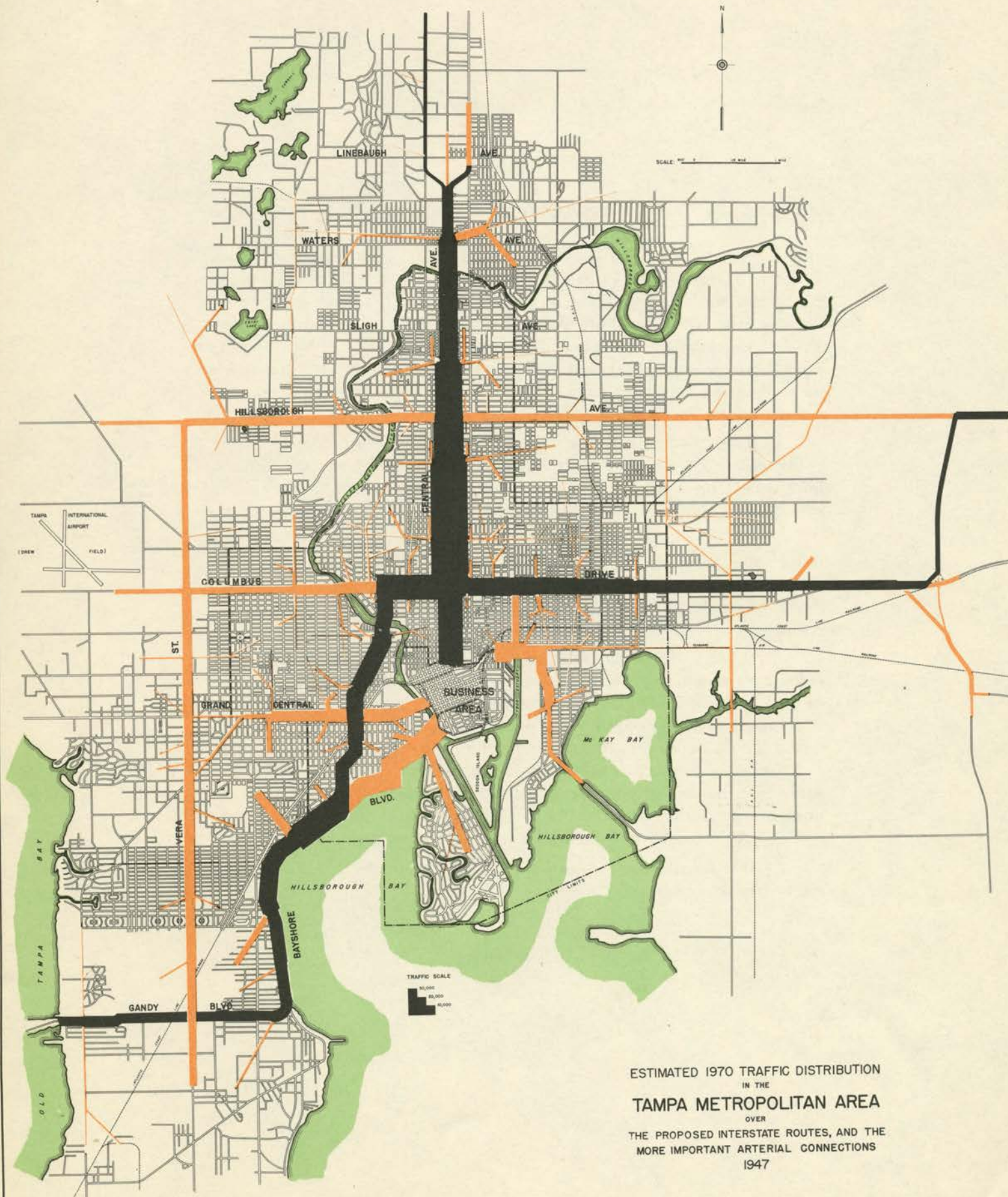


ESTIMATED 1970 TRAFFIC

The estimated 1970 traffic distribution over the proposed limited access routes was based on the estimated population for Tampa and Hillsborough County together with an increase in external traffic movements.

The estimated urban travel takes into account the additional auto drivers that could be expected from the anticipated population gain by 1970 as well as an anticipated decrease in the number of persons per vehicle which indicates a proportionately greater number of motor vehicles. Tourist travel is also expected to increase steadily.

Estimated future traffic volumes as depicted on this map are essential in the determination of adequate design standards. Improvements should be made that will satisfy the traffic requirements for the life of the improvements.



ESTIMATED 1970 TRAFFIC DISTRIBUTION
IN THE
TAMPA METROPOLITAN AREA
OVER
THE PROPOSED INTERSTATE ROUTES, AND THE
MORE IMPORTANT ARTERIAL CONNECTIONS
1947

RIVERSHORE DRIVE

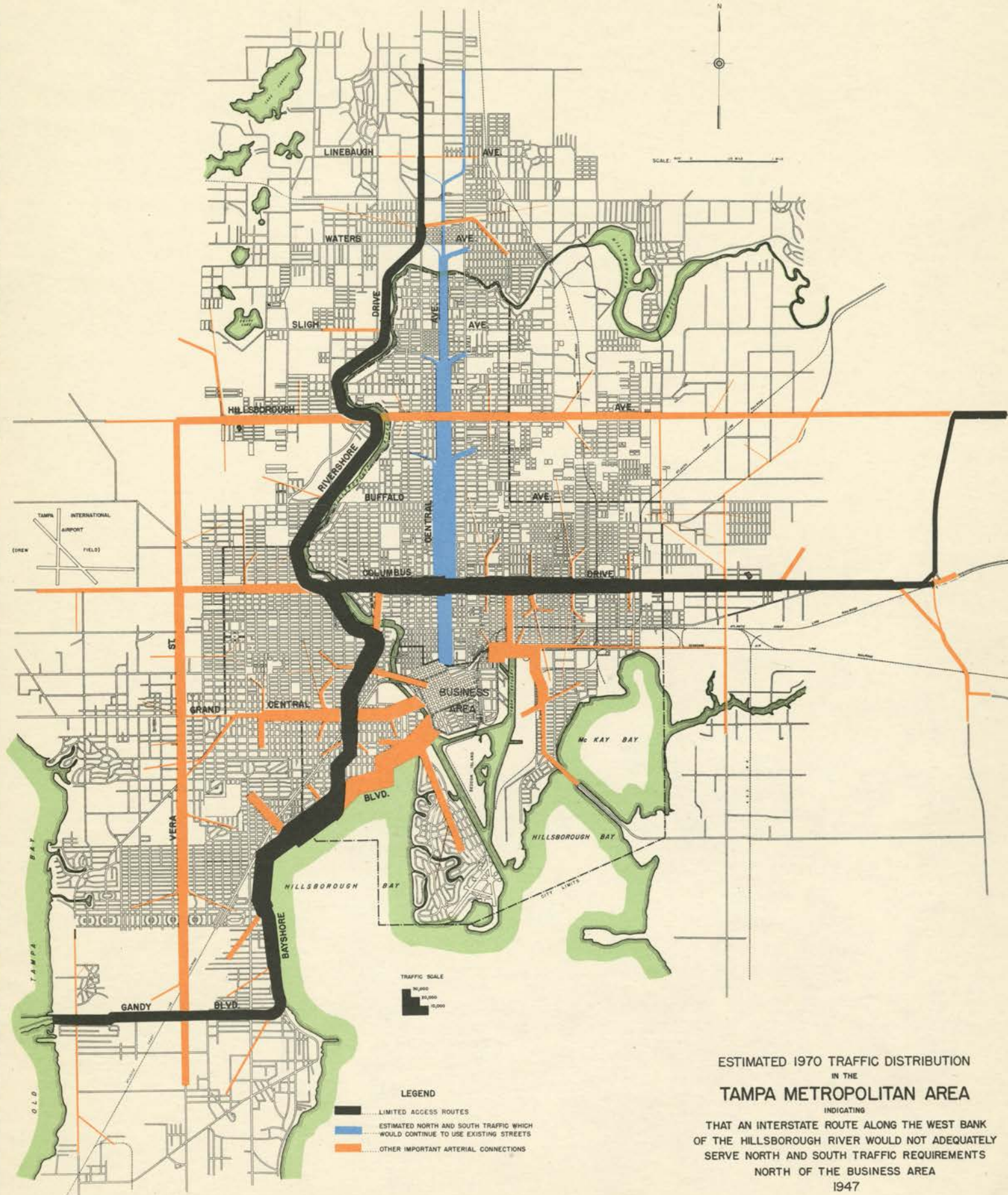
For a number of years certain agencies, especially the Garden Clubs of Tampa, have been interested in a river front drive extending along the west side of the river from Sulphur Springs on the north to a connection with Bayshore Boulevard. As a parkway drive a boulevard of this type has much merit and much of the right-of-way lies in a rural area now undeveloped. Its completion would afford the tourist as well as the citizen of Tampa with a scenic waterfront drive throughout the entire City from north to south.

River borders prove ideal locations for limited access routes because physical conditions and not arbitrary regulations automatically limit access on one side and eliminate crossings except where bridges are located. No existing right of access would have to be terminated.

Yet such a location for the north-south route would only partially solve Tampa's traffic problems in its northerly areas. The green traffic volume band indicates the traffic that will still remain, for which the existing street system is inadequate. Additional routes will still be required.

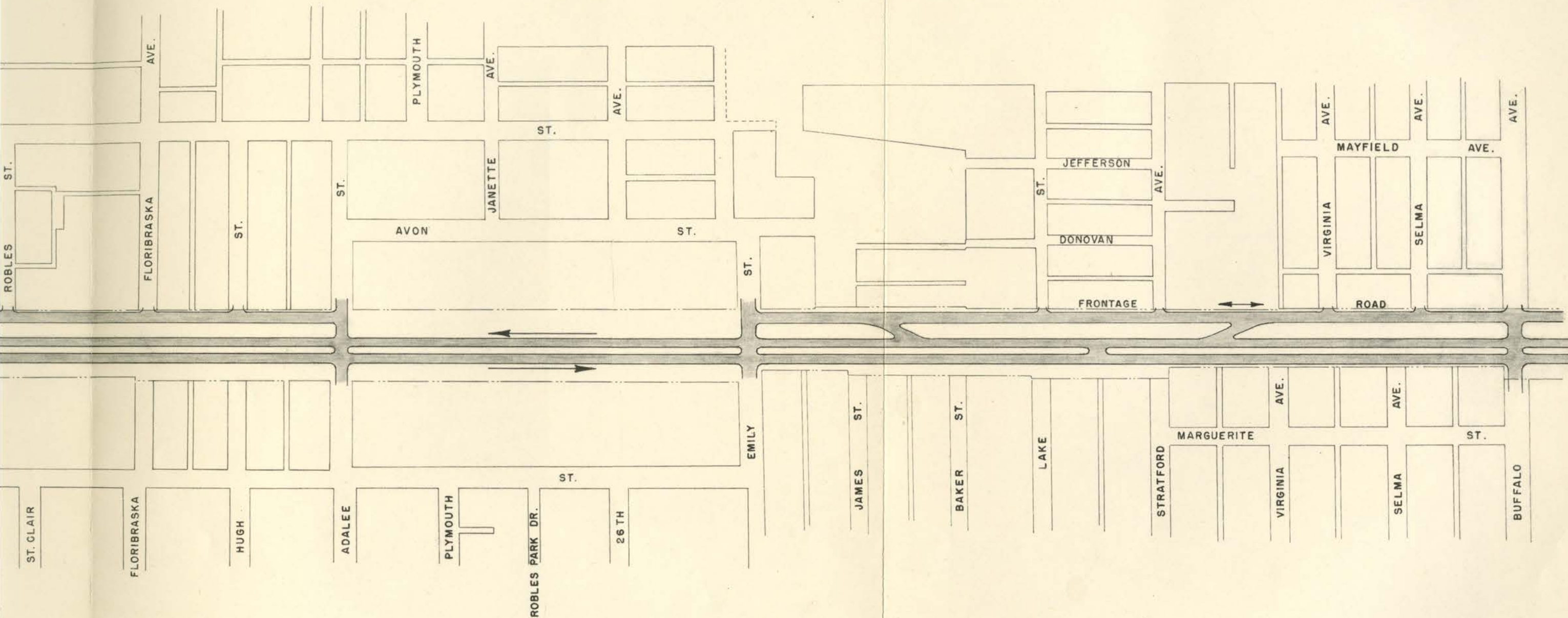
There undoubtedly will be continuing activities toward promoting a parkway along the west shores of the Hillsborough River. At some not too far distant date such a location will be a most desirable addition. The metropolitan area should expand greatly to the north and west and it would be wise to lay the foundations now by acquiring necessary rights-of-way for such a parkway before such costs become prohibitive. Already a number of homes are located along this river front. The locations are desirable, they are not too far from the business district and it will only be a matter of time before the entire area becomes filled up.

This location is suggested for inclusion in the grid network of major city street arteries.

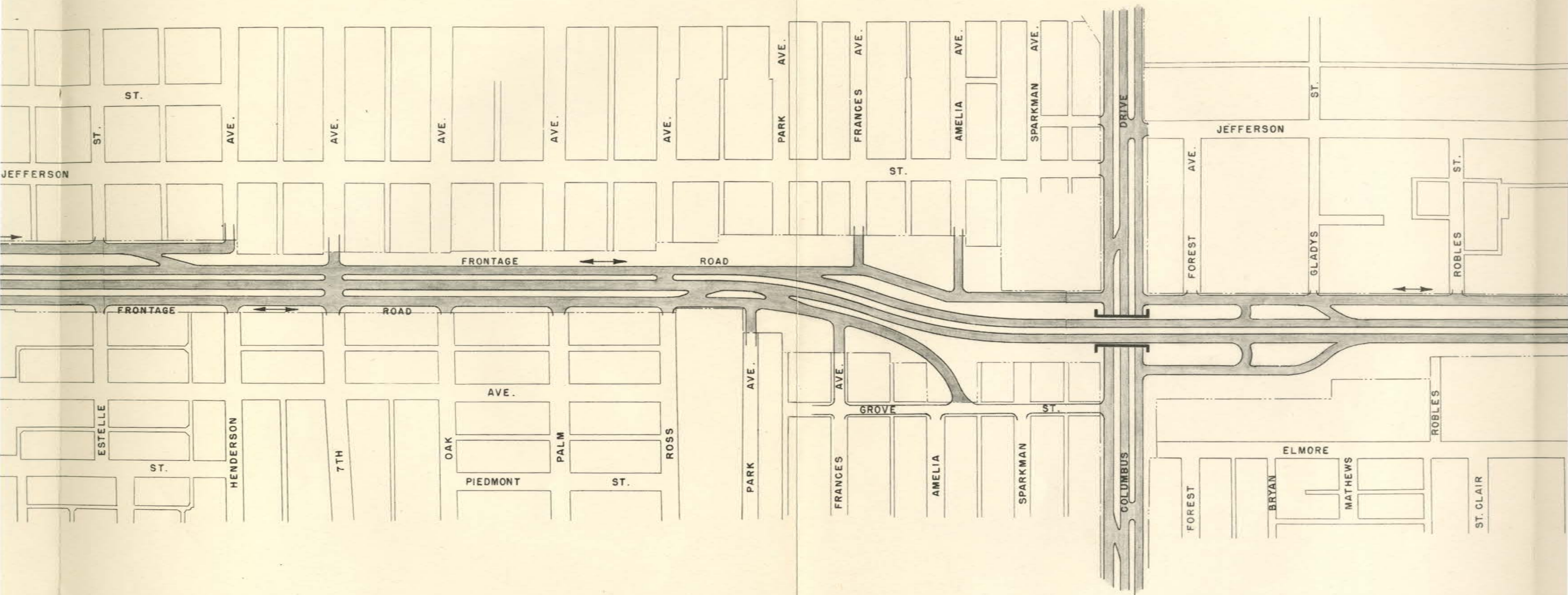


ESTIMATED 1970 TRAFFIC DISTRIBUTION
IN THE
TAMPA METROPOLITAN AREA

INDICATING
THAT AN INTERSTATE ROUTE ALONG THE WEST BANK
OF THE HILLSBOROUGH RIVER WOULD NOT ADEQUATELY
SERVE NORTH AND SOUTH TRAFFIC REQUIREMENTS
NORTH OF THE BUSINESS AREA
1947



SUGGESTED DESIGN
ON THE
INTERSTATE SYSTEM
PORTION OF NORTH AND SOUTH SECTION - TAMPA
FROM CASS STREET TO BUFFALO AVENUE



SCALE IN FEET



