11-1-1957

Location and Economic Study for Interstate Route Tallahassee

Wilbur Smith and Associates

LOCATION AND ECONOMIC STUDY FOR

Wilbur Smith and Associates

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LOCATION AND ECONOMIC STUDY

for

TALLAHASSEE

prepared for

FLORIDA STATE ROAD DEPARTMENT

by

Wilbur Smith and Associates
NEW HAVEN, CONNECTICUT

NOVEMBER, 1957

Wilbur Smith and Associates

TRAFFIC — PARKING — TRANSIT — HIGHWAYS

495 ORANGE STREET
NEW HAVEN, CONN.

November 1, 1957

Mr. Wilbur E. Jones, Chairman
State Road Board
State Road Department of Florida
Tallahassee, Florida

Dear Mr. Jones:

We submit herewith our report on "A Location and Economic Study for the Interstate Route in the Tallahassee Area." The investigations and report were undertaken in accord with our agreement dated May 28, 1957. The entire project has been most challenging and has involved many unusual and, we believe, unique approaches, since detailed investigations were made of the economic impacts of the proposed routes on businesses, and broad planning factors were thoroughly investigated in addition to the conventional approaches employed in expressway location studies.

We have recommended the development of an east-west line to serve as the section of the Interstate Route in the Tallahassee area which will pass just south of the Capitol Center along an alinement roughly parallel to the Seaboard Air Line Railway. This location was found to be, by far, the best after completing detailed analyses of traffic, location, economic, and planning factors. In this connection, we have thoroughly considered both present conditions and needs as well as those projected to 1975. The recommended location for the expressway will permit complete flexibility in planning extensions of the Interstate Route both to the East and to the West of the Tallahassee area. The total length of the line investigated is approximately six miles. It is our understanding, however, that you plan to consider for initial construction only the portion from east of the Dale Mabry Municipal Airport at Lipona Road to Magnolia Drive — approximately four miles. We estimate that this portion of the route will cost a total of approximately $9,681,000.

We wish to acknowledge the valuable assistance and cooperation given us by all members of your Department. We are especially grateful for the cooperation given us by Mr. James E. Nelson, Jr., member, State Road Department of Florida, and by Mr. Richard H. Simpson, former member, State Road Department of Florida. The local coordinating committee also gave us valuable support in the work. Many local organizations including both governmental and civic groups furnished us information and assistance during the study, which we gratefully acknowledge.

We are pleased to have had the opportunity of working for you in this most interesting and important investigation. We believe that the report clearly demonstrates the values to be derived from exhaustive investigations of the economic and planning factors in the development of expressway locations in urban areas. The proposed route will be a very important segment in the over-all transportation plan for the Tallahassee area, and we sincerely hope that its development can proceed in accord with our recommendations.

In conclusion, we should like to point out that while we have taken into account immediate and long range plans for the area, it is important that the local officials and your department consider this major transportation facility in developing all future plans for the city and its environs.

Respectfully submitted,

WSS:mjh

WILBUR S. SMITH — CERTIFICATE No. 6272 — STATE OF FLORIDA — REGISTERED ENGINEER

Wilbur S. Smith

ACKNOWLEDGEMENT OF TECHNICAL ASSISTANCE

In addition to the assistance and cooperation given by State, County, and City Officials, acknowledgement is made of the technical advice and assistance of the following:

Prof. Samuel C. McMillan
Asst. Dean, School of Business Administration
University of Conn., Storres, Conn.

Mr. Lawrence S. Waterbury
Consulting Engineer
New York, N. Y.

Mr. L. R. B. Atwater
General Manager
Traffic and Trade, Inc.
New Haven, Conn.

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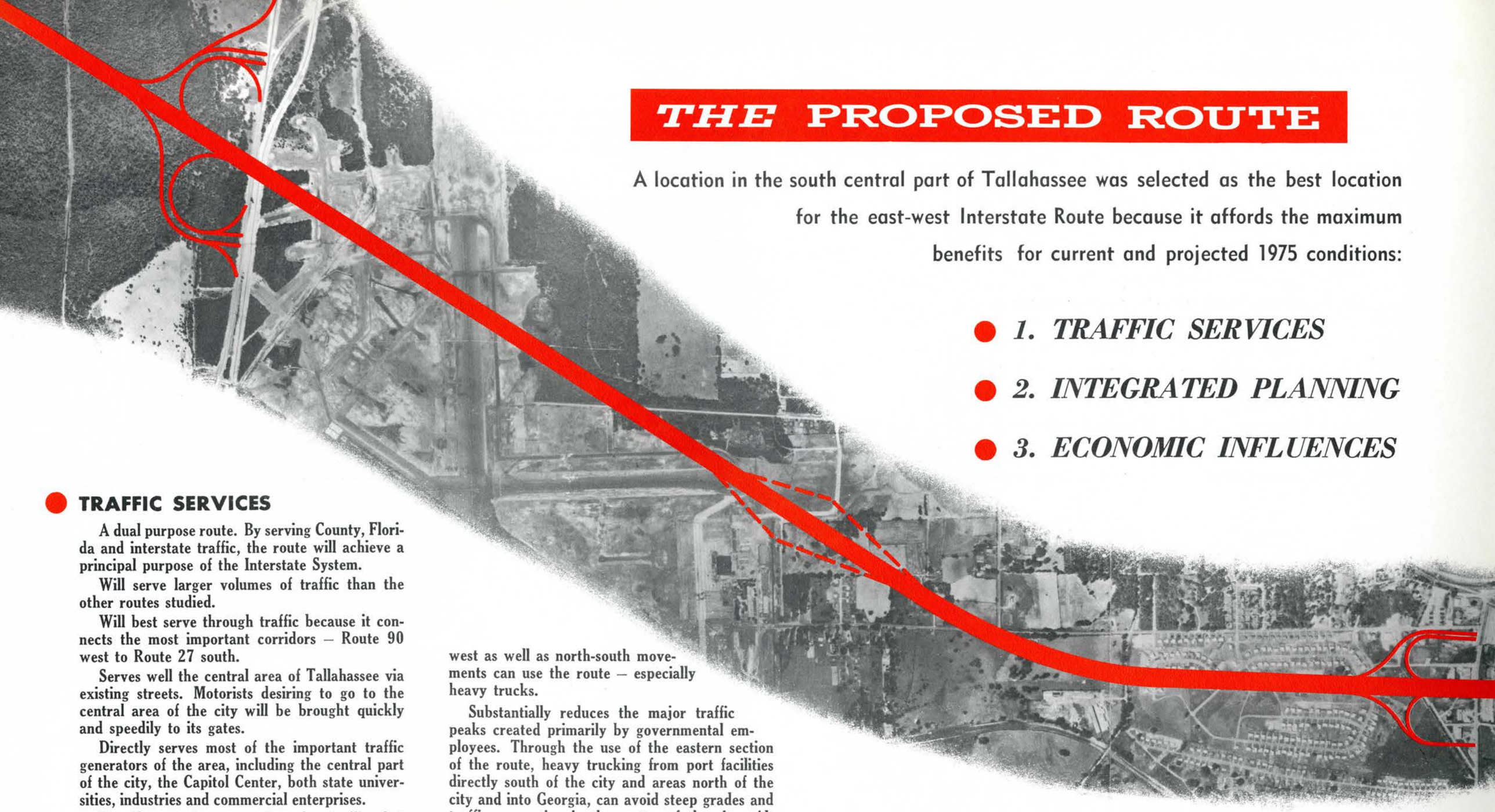
THE PROPOSED ROUTE

A location in the south central part of Tallahassee was selected as the best location for the east-west Interstate Route because it affords the maximum benefits for current and projected 1975 conditions:

- *1. TRAFFIC SERVICES*
- *2. INTEGRATED PLANNING*
- *3. ECONOMIC INFLUENCES*



TRAFFIC SERVICES

A dual purpose route. By serving County, Florida and interstate traffic, the route will achieve a principal purpose of the Interstate System.

Will serve larger volumes of traffic than the other routes studied.

Will best serve through traffic because it connects the most important corridors – Route 90 west to Route 27 south.

Serves well the central area of Tallahassee via existing streets. Motorists desiring to go to the central area of the city will be brought quickly and speedily to its gates.

Directly serves most of the important traffic generators of the area, including the central part of the city, the Capitol Center, both state universities, industries and commercial enterprises.

Provides maximum services for traffic that might be developed in a national emergency. Best route for defense purposes.

Provides maximum opportunities for traffic having no desire to stop in the city, to by-pass. East-west as well as north-south movements can use the route – especially heavy trucks.

Substantially reduces the major traffic peaks created primarily by governmental employees. Through the use of the eastern section of the route, heavy trucking from port facilities directly south of the city and areas north of the city and into Georgia, can avoid steep grades and traffic congestion in the center of the city. Although an east-west route, many north-south traffic movements can be partially served.

Produces the maximum separation between slow and fast traffic.

Provides
maximum services
for corridor movements.
Local trips can confine greater
part of total travel to the expressway.

INTEGRATED PLANNING

The route produces maximum social, economic and historical effects. It fits well the city's zoning and land use plans.

Designed for the future needs of Tallahassee as well as for the rapid movement of interstate and defense traffic.

The Route disrupts fewest residences — about seventy-five per cent less than the North Central Route.

Construction will remove some slum and substandard housing areas, thus fitting conventional re-development objectives.

Excellent service will be provided the proposed Industrial Park on the site of the present Airport, thereby encouraging industrial expansion.

Will provide excellent interchange and integration with the city's railroad facilities, producing a plan of coordinated transportation. Industrial and warehousing sites will be afforded rail and super-highway services.

Will fall generally between the Capitol Center, business district, and commercial and industrial strips, thus creating a natural and desirable barrier between different land uses.

Full utility will be made of the "Capitol Entry" afforded by the new Apalachee Parkway. This approach and the fine visibility it affords will attract visitors.

Fits the long-range Capitol Center plans.

Excellently adapted to other roadway improvement plans, including a north-south by-pass to the east of the city and improvements of north-south streets in the heart of the city.

Will require a minimum development of feeder and service streets.

With the rapid growth of the city, labor forces must be attracted from increasingly great distances. The route will achieve this in an east-west direction. It will, in effect, extend the city's suburban area.

Complete flexibility is afforded in the alinement of extensions for completion of the Interstate Route, both to the east and to the west of the Tallahassee area.

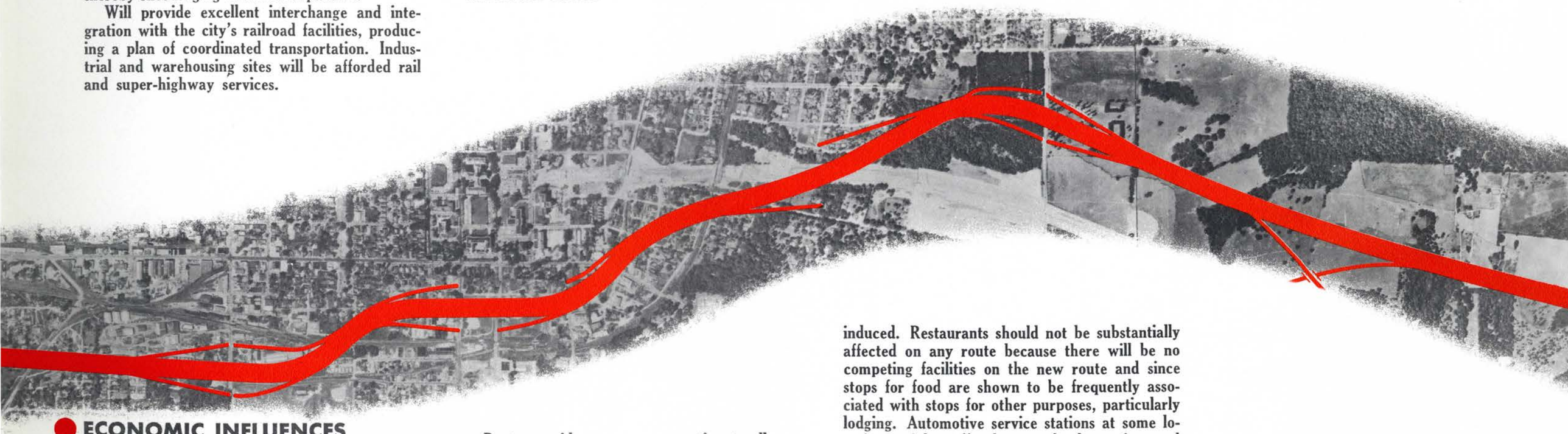
Maximum services will be provided existing and proposed industrial and commercial activities.

The design standards, providing a controlled access high-speed route, will not allow business developments directly on the route. Motorists will be required to leave the road for all services — gasoline, food, lodging, etc.

With control of access, highway investments will not be spoiled by land uses that adversely effect road capacity.

The parts of the city traversed are well suited to terminal or parking developments.

Proper design and provision of planting areas will make the route an aesthetic asset to the city.



ECONOMIC INFLUENCES

The route will provide important business values to the central area of the city. This area will be made more accessible to a larger segment of the metropolitan market; undesirable traffic having no reason to be on local streets will be largely removed; travel times to the central part of the city will be improved and a more favorable competitive position with new shopping centers will result.

Route provides an easy connection to all motels, restaurants, and service stations, including direct access to those on West Tallahassee Street. Interchanges are well located for signs directing traffic to establishments on existing routes.

Route will cause few negative effects on businesses along existing route corridors. Overall, it is expected to benefit these businesses. Motels should not suffer because traffic will be brought close to existing motels and more traffic will be induced. Restaurants should not be substantially affected on any route because there will be no competing facilities on the new route and since stops for food are shown to be frequently associated with stops for other purposes, particularly lodging. Automotive service stations at some locations might suffer losses; the losses incurred by the proposed route will be the minimum for any of the east-west routes examined.

The route will pass through much open land and rapid development of this land, in uses compatible with the city's over-all plans, can be expected.

Land values in the corridor will be rapidly appreciated. Added tax income will thus be available to the city.

While the route is more expensive than others studied, it does not appreciably exceed the cost of other routes through the city. It provides many services and benefits which more than offset the added cost.

It puts the city's principal businesses and institutions in sight of the traveler. This produces minimum effects where limited access highways approach cities.

INTRODUCTION

To provide better transportation, *all* ingredients for a better city must be weighed. Roadways must be a part of an *over-all* planned development. It cannot be contended that any one route, no matter where placed nor to what standards constructed, can in itself control the shape, and the growth, and the utility of a city. But, it can be a major controlling force — a force to be related to, and a force that can be directed with or against other forces that are constantly at work on cities.

Tallahassee has made great strides of accomplishments since it was designated as the Capital of Florida in 1823. Located about 170 miles west of Jacksonville and 200 miles east of Pensacola, it has become a principal transportation terminal point between these cities. From rail transportation, since the first railroad was built in 1832, to the present highway network, the influence of Tallahassee in transportation has been evident. In addition to being a major stopping point for traffic between Pensacola and Jacksonville, Tallahassee also serves as the gateway to the Mississippi Valley area from central and southern Florida as well as interchange points for traffic to and from the southwestern states.

Transportation services of the city are furnished by the Seaboard Air Line Railroad, by the Georgia, Florida and Alabama Railroad and by the Atlantic Coast Line Railroad. The city is served by two major airlines: Eastern Airlines and National Airlines. A new airport is now being planned and it is expected that construction on it will begin in the near future. The Greyhound Lines and the National Trailways are the basic inter-city bus services afforded the city. These two companies operate on a regular schedule with approximately 100 inter - city buses through Tallahassee each day. Inter-city trucking facilities are noteworthy. Approximately seven trucking companies have terminals in or near the city, and over-night trucking services are provided to such key cities as Pensacola, Tampa, Jacksonville, Atlanta, Savannah, Birmingham, New Orleans and Mobile. As will be discussed at great length in this report, the city also has unusually good major highway services.

The city limits have been extended on several occasions until the area within the present corporate limits of the City of Tallahassee is approximately 11.9 square miles. The population growth has also been rapid, increasing from 5,600 in 1920 to over 40,000 in 1957.

The growth of Tallahassee during the past 35 years has been due, in large part, to the increase in the business of the State Government, and to the development of the two universities, Florida State University, and Florida Agricultural and Mechanical University located in the city.

Tallahassee has developed into a major wholesale and retail center that attracts a trade population of approximately 163,000 people. While the Tallahassee area has experienced rapid growth up till now, it has not matched the growth in other areas in southern and central Florida. In the foreseeable future, it is anticipated that the growth of the city will equal and possibly exceed the present rate of development of some other Florida cities. The excellent climate combined with the railroad and highway facilities of Tallahassee will be important factors in this growth.

The dynamic character of the City's growth is somewhat reflected by the building activities currently underway. Besides the large shopping centers currently being developed, there is major building activity in the central area of the city. This activity includes two new office buildings, a major building for new retail stores and expansions of many businesses, as well as civic expansions.

As the city has grown and the urbanization trend has increased, people have insisted on the automobile. Thus far, not much has been done to adjust the city for the conditions that have resulted.

With the anticipated influx of population to the Tallahassee area, a corresponding increase in motor vehicle registration and use can be expected. The city's location as a

major interchange point of the Tallahassee segment of the new East - West Interstate Highway through Florida is important. It is important that this route become an integral part of the future planning and development of the city. The officials of the City and the State realized the need of a comprehensive study considering traffic services and economic impacts on business and community in the location of the new roadway.

In connection with the development of locations and functional designs for the Tallahassee segment of the Interstate Highway, the State Road Department undertook extensive traffic investigations. They also made studies of feasible locations for the proposed route, taking into account traffic services, physical and topographic conditions, costs and relationships of routes to the community. Following suggested alinements, it became apparent that many local views differed, and that there was a divided opinion as to the best location. As a result, a local committee was formed to study the data made available to them, and to take steps to plan the best location for the route. This committee consisted of representatives of the City Government, the County, and the State Road Department. In addition to public officials, the committee included membership from civic and business groups having direct interests in the over-all planning of the community and particularly in highway facilities. The committee soon agreed that there was need for a comprehensive study, and that such study must take into account not only the conventional factors in route planning and location, but also factors of area planning and economic impacts on businesses. As a result, the present studies were undertaken.

Authority and Scope of Study

This survey was authorized by the Florida State Road Department upon recommendation of the local committee. On May 28, 1957, an agreement was reached for performance of the work.

Under the terms of the agreement, the scope of the work to be undertaken was generally described as follows:

The study was to include the geographic area about the City of Tallahassee approximately nine miles square. The basic purpose of the study was to determine the best location for the construction of an East-West section of the interstate highway. It was prescribed that the work would consist of two basic parts. One had to do with the analysis of travel data, both present and projected, in the determination of the most feasible location of a route based on conventional traffic and highway development factors. The other phase of the work was to deal with economic considerations, especially the economic impact of the proposed routes on businesses located on existing roads and on the central business district of Tallahassee.

Lines were to be examined directly through the city, on a by-pass location to the north, and on a by-pass location to the south. In each case, several alternates were to be examined to select the best location to the north, through the city, or to the south of the city. After determining the best locations for each of the three potential routes, each was to be compared in terms of traffic services, economic factors, and planning considerations. Also to be taken into consideration were topographic conditions, land uses, connectors to existing routes, and costs.

The study was somewhat unique in that emphasis was placed on the economic aspect. It was understood that this phase would involve economic investigations to determine the traffic generation characteristics of typical businesses along existing highways. The travel characteristics of customers were to be related to the origin and destination data and to other basic traffic information as well as to travel patterns. Through traffic and local traffic were to be considered separately in relating traffic characteristics to businesses. Trends in business volumes by common types of businesses were to be determined for the area. Every attempt was to be made to relate it to market areas of typical businesses involved.

Another part of the study had to do with the collection of basic traffic generation characteristics of businesses as reported in other studies for other states.

After all factors had been studied and comparisons made, specific location and functional plans were to be recommended. For the recommended route, the geometrics of design, approximate grades, interchanges, basic drainage require-

ments, typical cross-sections and approximate right-of-way limits were to be given. Design criteria prescribed by the U. S. Bureau of Public Roads and the Florida State Road Department were to be followed in connection with the location and route planning studies. Cost estimates were to be made for the recommended route, including cost of right-of-way as prepared from available data on property assessments. Finally, benefit comparisons were to be undertaken, together with a summary of the relative traffic relief afforded existing roads and streets and the improvements and accessibility by automobile which the recommended route would provide.

Plan of Study

Under the broad plan of studies, several fields of urban endeavor were involved: to some extent at least, urban land economics, marketing, city planning, engineering design, and traffic engineering were included.

In addition to the economic investigations, the study was aimed at a very careful analysis of the basic planning factors in Tallahassee and the adjacent area as they relate to major highways. These included the study of effects of different route locations on the expansion of the city and the orderly development of existing city plans. They also include the study of relationships of expressways to property values and land uses adjacent thereto.

While "before" and "after" information has been reported on the economic and business effects of various types of roadways on communities, the study herein reported attempts to evaluate and predict the effects which the recommended route in Tallahassee will produce.

In undertaking the investigations, it was assumed that the rural portion of the interstate route would extend from the Tallahassee area to the south of U. S. Route 90 and that it would extend on the west in a slight northwesterly direction.

Origin-destination data were made available by the Florida State Road Department. They were used in conjunction with independent traffic volume and classification counts made on all major highways entering Tallahassee. This information was in turn supplemented by contacts with interests, both civic and business, which would be affected by the location of the new roadway. It was felt that the views and desires of local groups were important considerations, since the major roadway project will have a pronounced effect on the future growth and expansion of Tallahassee.

Cooperative Action

Through the local planning committee, arrangements were made for excellent cooperation throughout the study. This cooperation was particularly valuable in the collection of field data and in the procurement of background material. Conferences were held with city officials, county officials, and with business groups. In many instances, individuals were able to provide pertinent facts and to suggest sources of other information that was helpful in completing the report. The Tallahassee Chamber of Commerce provided invaluable contacts with business agencies and with individual operators of automotive businesses so that their full cooperation was given.

The State Road Department furnished all available basic information and authorized the procurement of all other information considered necessary for an objective study.

Plan of Report

In addition to the introductory material, the report is divided into three basic parts.

Part One discusses traffic and planning considerations. Both present conditions and anticipated conditions are given. Part Two presents the economic and business factors with particular emphasis placed on the relationships of the automotive businesses to traffic and route locations. The final portion of the report, Part Three, describes the routes studied and gives the recommendations. In this part, the standards of traffic service and other comparisons of services of the three alternate alinements are presented. The cost and suggested program of development of the recommended route are included. Functional plans showing the preliminary engineering detail for the rec-

ommended route are included as the last item under Part Three. In the final pages of the report, basic reference data are given as Appendices. This plan of presentation is used to properly emphasize the planning and economic investigations and findings in relation to the route studies and recommendations. Much of the information contained in the parts on planning and economic investigations go considerably beyond the scope of work that is normally undertaken in conventional route studies in urban areas.

Future Planning Should Consider Expressway

In selecting, locating and planning the route, consideration was given to over-all area planning. When the route is approved, it behooves the local planners to recognize the route in all their future plans. Integration certainly will not end with the adoption of the route nor even with the completion of the route.

Part I

TRAFFIC AND PLANNING CONSIDERATIONS

Chapter I - Present Traffic Conditions

Chapter II - Planning Factors

Chapter III - Future Traffic Requirements

Chapter I
PRESENT TRAFFIC CONDITIONS

Available data were collected, and additional studies were undertaken so that all information needed for a thorough objective approach was procured. The comprehensive origin-destination survey provided basic data concerning travel desires and trip patterns. Travel speed and delay studies and volume classification counts gave additional information in evaluating the present traffic pattern in Tallahassee.

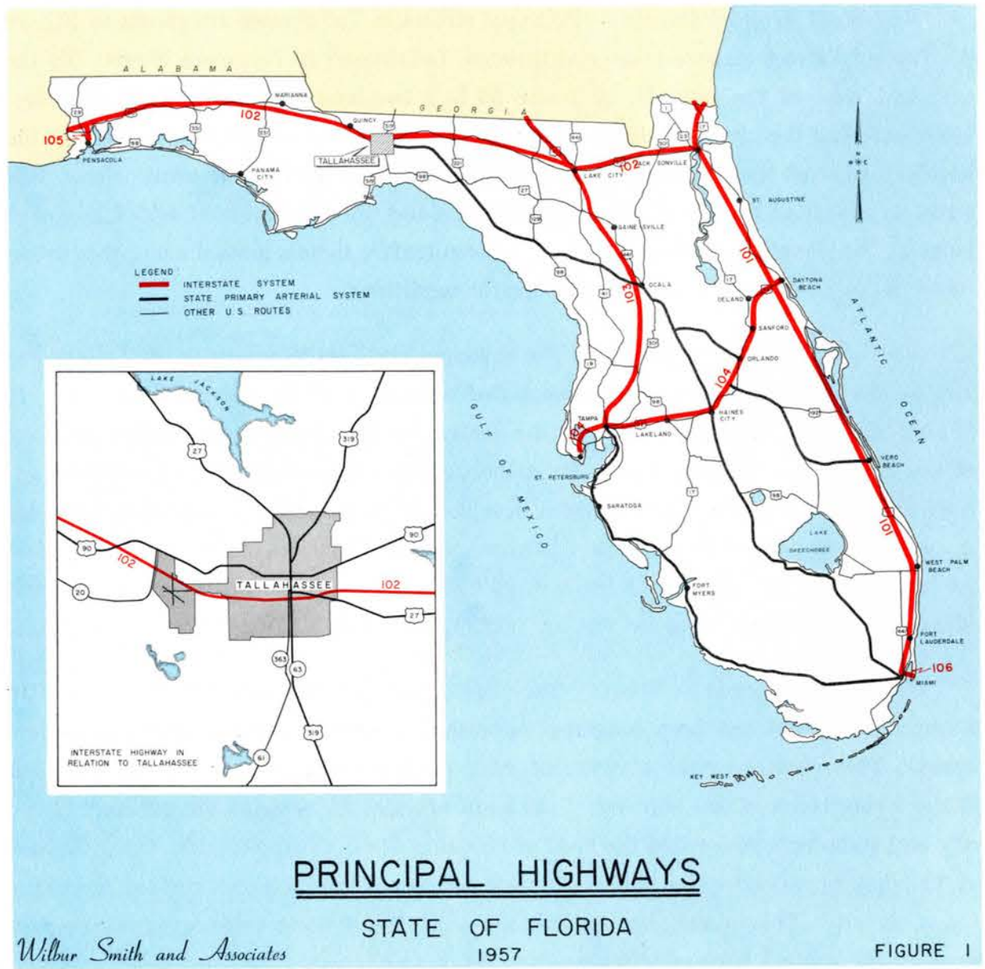
Highways and Principal Arterial Streets

The city and secondary areas are served by a comprehensive network of highways. These connect to a basically good street system.

State and Federal Highways — There are three major U. S. numbered highways — U. S. Routes 27, 90, and 319 — and several state highways including, Florida Routes 20 and 61 that serve Tallahassee. These five routes are depicted on Figure 1. As shown, Tallahassee is in the corridor of the interstate route which generally parallels U. S. Route 90 extending from Jacksonville to Mobile, Alabama. The first north-south segment of the interstate route connecting this east-west route will be near Lake City.

In addition to being served by one of the principal east-west interstate highways, Tallahassee has excellent highway service provided by other major state roads.

U. S. Route 27 approaches the city from the southeast and enters Tallahassee on Lafayette Street; this traffic is then routed up Monroe Street and leaves the city in a northwesterly direction. U. S. Route 90 is the primary east-west route and upon entering the east city limits, immediately north of the railroad, continues on Tennessee Street directly through Tallahassee and emerges on the west as the principal route to Pensacola. U. S. Route 319, originating on the southwest Gulf Coast at Apalachicola enters Tallahassee on Monroe Street and swings northeasterly to connect to Thomasville, Geor-

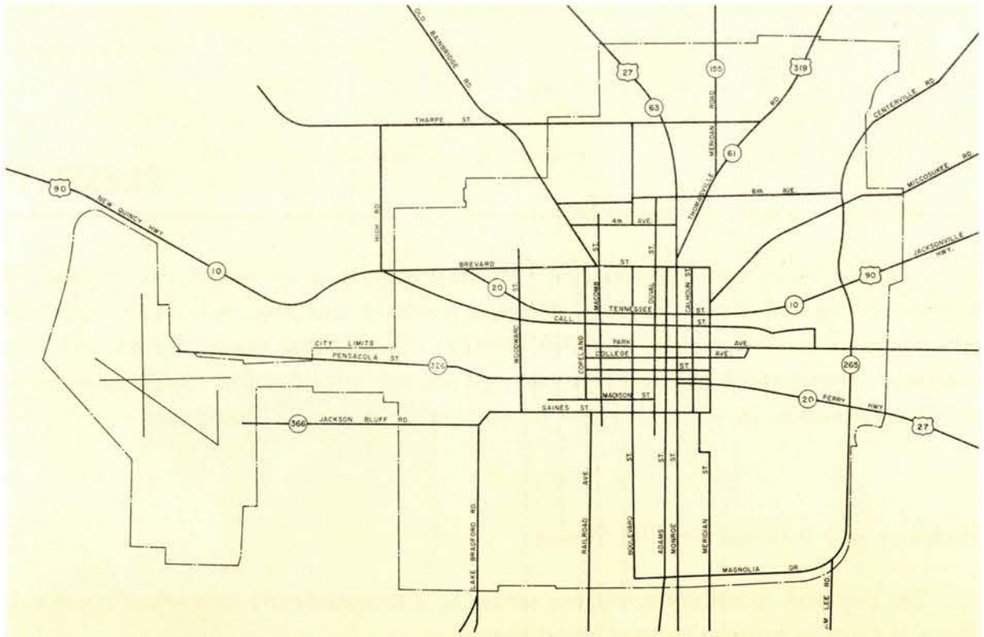


gia and points northeast. State Road 20 is an east-west route which connects U. S. Route 90 to U. S. Route 231. The termini of this route that serves traffic between Tallahassee and Panama City are U. S. Route 90 west of the Tallahassee city limits and U. S. Route 231, 25 miles northeast of Panama City. State Route 61, although not as important as the previous routes, provides service to and from the city and Leon County. Beside the major highways mentioned above, and shown in Figure 1, other state secondary roads offer local service into neighboring communities adjacent to Tallahassee.

East-West Arterial Streets — Principal streets in Tallahassee are shown in Figure 2. The only direct east-west arterial through Tallahassee is Tennessee Street. To the east and west of the city, U. S. Route 90 is a two-lane roadway in good condition. Upon entering the city the highway becomes Tennessee Street and passes through the northern edge of the Tallahassee business district. Vehicular movement along this street is expedited by curb parking prohibitions and the delineation of added approach lanes at the signalized intersections. The seven traffic signals located along this urban street serve adequately under normal traffic conditions.

North-South Arterial Streets — The principal north-south artery in the Tallahassee area is Monroe Street which is the designated routing of U. S. Routes 27, and 319. It is also one of the principal streets in the central business district. The traffic capacity of this roadway is adequate except for a short section from south of the Seaboard Railroad underpass to Gaines Street, which provides only one moving lane in each direction. A construction project is underway, however, which will correct this condition and allow for at least two moving traffic lanes in each direction. In the central business district, Monroe Street widens to allow for six traffic lanes, and a parking lane on each side.

Due to a steep grade on Monroe Street directly south of the capital buildings, traffic flowing northward has been congested because of heavy trucks being forced to very low speeds. These vehicles have also caused some damage to pavements. In consideration of the inadequacies of this segment of the main north-south arterial, the officials of the city and state have recognized the need of planning for a circumferential truck by-pass of Tallahassee which ideally could tie into the proposed interstate network in the vicinity of the city. This would also preclude the necessity of these vehicles having to pass through the central business district.



PRINCIPAL STREETS

TALLAHASSEE , FLORIDA

Wilbur Smith and Associates 1957 FIGURE 2

Other Local Streets — Although there is only one principal north-south artery and one principal east-west artery in Tallahassee, some of the other local streets have an important function in transporting vehicles.

Adams Street is a principal street in the central business district, and provides direct access from the south of the city to the Capitol and other State Office Buildings, besides many retail establishments in the central business district. Traffic on this facility is controlled by signals through the downtown area and sufficient roadway capacity is available for two moving traffic lanes in each direction.

Pensacola and Gaines Streets are well used streets that service the area west of the business district. Pensacola Street serves Florida State University and the Munici-

pal Airport, and Gaines Street the principal industrial area of the city. Brevard Street is another through route which offers a good connection between North Monroe and West Tennessee Streets. Magnolia Drive, although not a designated State highway, provides good travel time and functions as a connector between U. S. 319 to the south, U. S. 27 to the east, and U. S. 90 to the northeast as well as to the Miccosukee Road.

These streets are, for the most part, two-lane roadways in good condition that serve without serious congestion existing traffic volumes.

Vehicular Volumes

Data on vehicular volumes are basic to many parts of the over-all study. They are essential to a proper determination of street sufficiencies; they show the extent to which streets can be expected to accommodate added flows in the future; and, all of the economic and business factors must be related to the quantity of traffic movement. Valuable data on vehicular volumes were available for the Tallahassee area from the Florida State Road Department. Additional data were collected as a part of this study. Locations of survey stations, including those used for volume counts, are shown in Figure 3.

Central Business District Volumes — Vehicular volume flows are depicted graphically on the principal streets in the central area of Tallahassee in Figure 4. It will be noted that at 1957 levels, the most heavily traveled streets are Tennessee Street in an east-west direction, and Monroe and Adams Streets, north-south. From an average volume of approximately 13,000 vehicles per day west of Duval Street, Tennessee Street traffic volumes increase to a maximum of over 15,000 vehicles per day at Adams Street, and then decrease to just over 10,000 per day east of Calhoun Street. On Park Avenue the maximum volumes are only about 9,000 vehicles per day. College and Pensacola Streets are the next most heavily traveled east-west thoroughfares; and, the heavy volume points on these are in the magnitude of 5,000 vehicles per day.

Monroe Street carries a volume, between Tennessee and Call Streets, of almost 15,000 vehicles per day. Throughout the central business district, the volumes are sustained at a higher level on Monroe than any other streets.

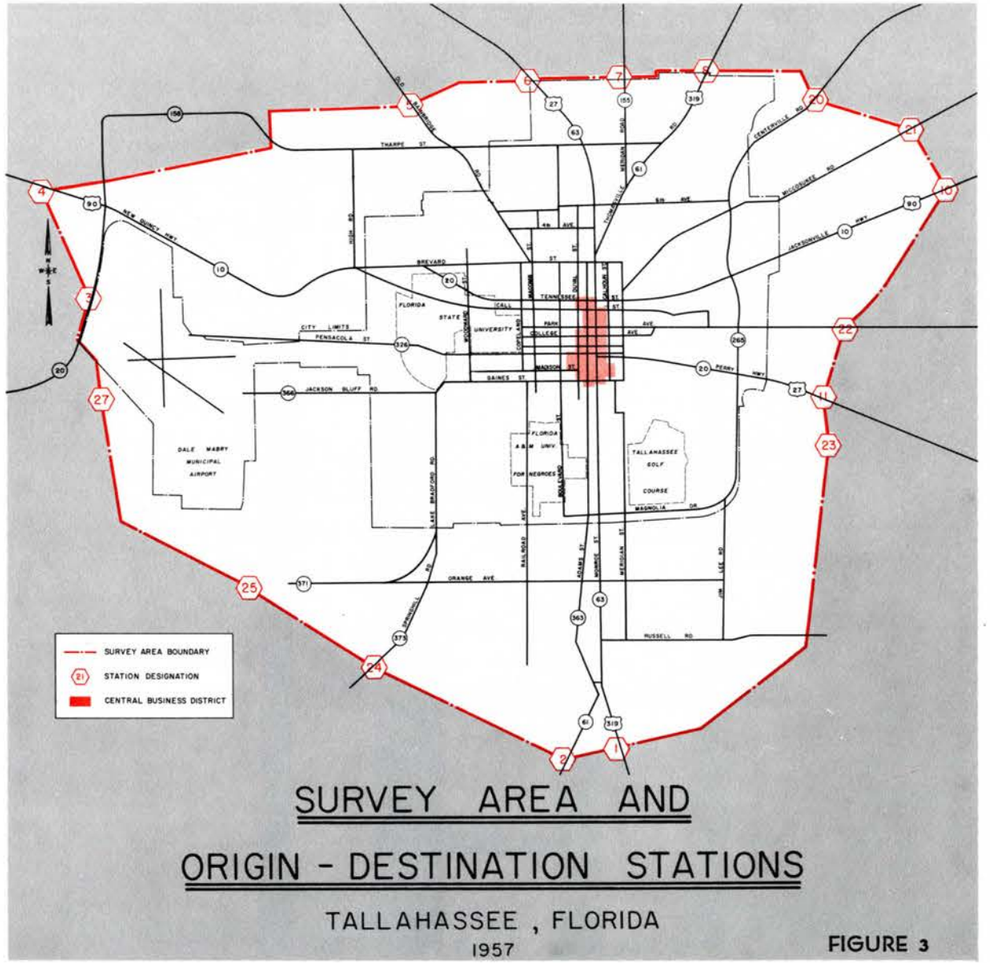


FIGURE 3

Adams Street is another principal north-south facility with traffic volumes ranging from 6,500 south of Pensacola Street, to a maximum of about 9,000 at Park Avenue. Proceeding northward the volumes drop more rapidly so that north of Tennessee Street, Adams Street accommodates about 6,000 vehicles per day.

The various types of vehicles on a typical street within the central business district are presented in Table I. It is significant to note that over 90 per cent of the vehicles are passenger cars, of which almost 84 per cent are local.

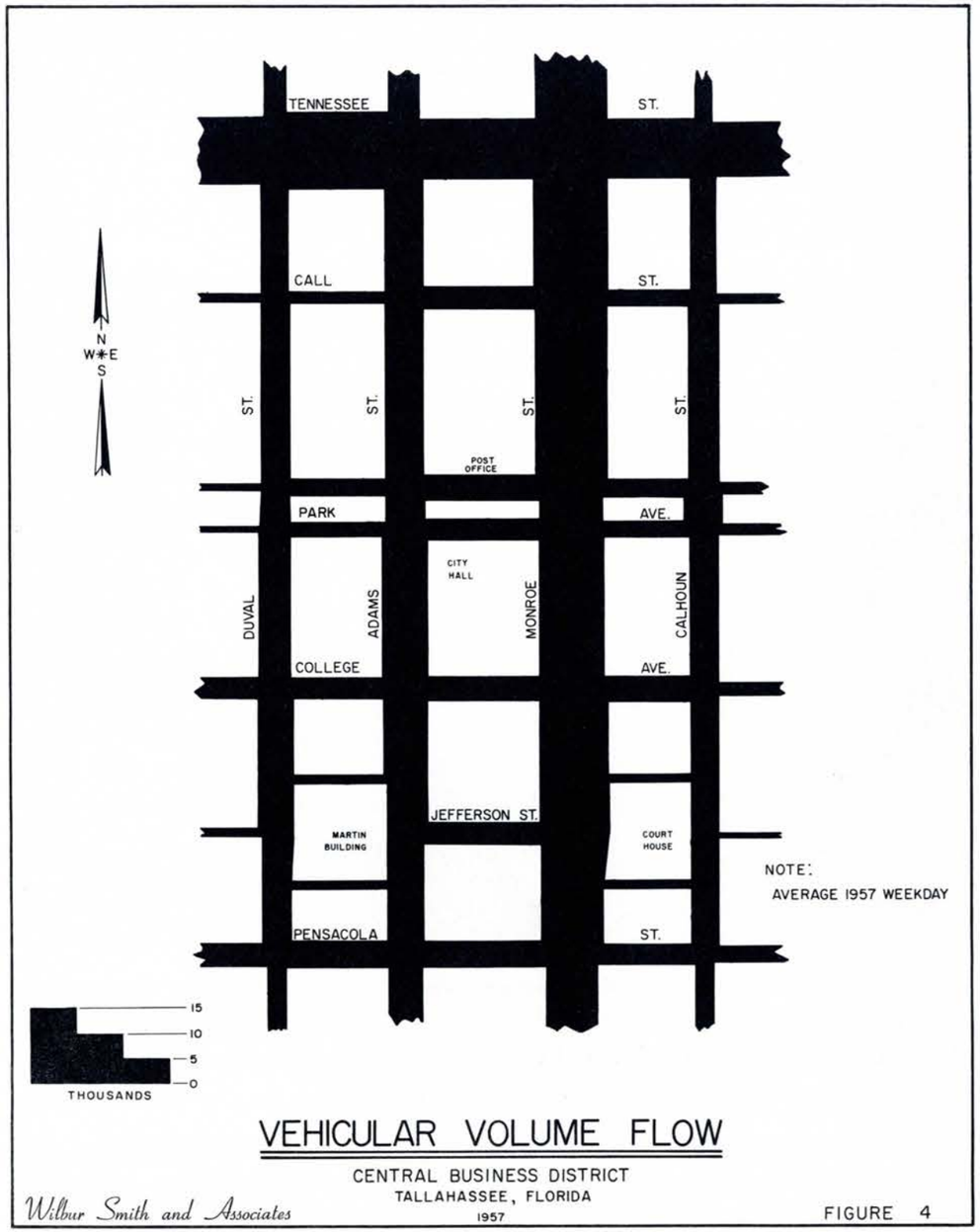


TABLE I

VEHICLE CLASSIFICATION

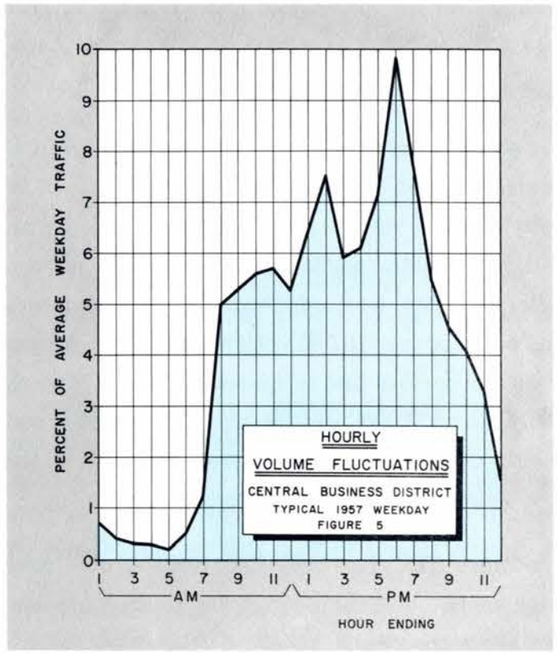
(Monroe Street — South of Tennessee Street)

1957

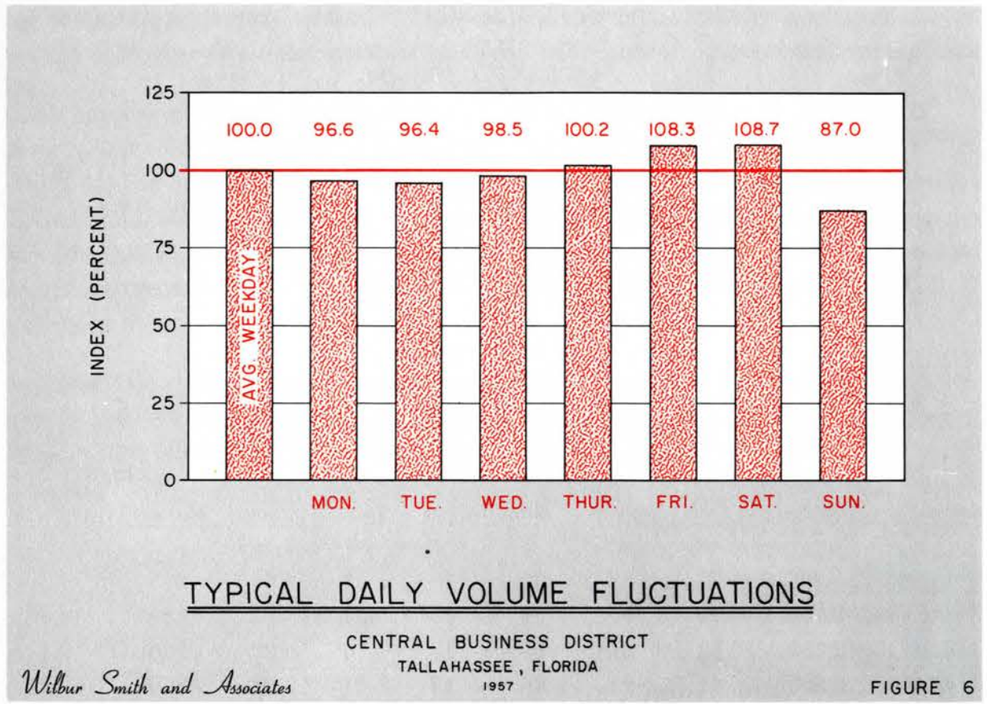
	Passenger Cars			*Trucks*			*Buses*	
	Local	*Out of State*	*Total*	*Trucks 2 Axle*	*3 or More Axles*	*Total*		*Total*
Volume	12,225	1,065	13,290	1,031	167	1,198	79	14,567
Per Cent	83.9	7.3	91.2	7.1	1.1	8.2	0.6	100.0

The most significant point in the pattern of traffic in the central business district of Tallahassee is that none of the streets carry extremely heavy volumes, and the apparent congestion and traffic problems are not as real, as reflected by the actual volume figures, as they often appear in driving about the city.

Hourly Variations — At several traffic count stations in the central area of the city, the volumes have been summarized graphically by hours. These are shown in Figure 5. It will be noted that the morning peak is of short duration, and generally occurs around 8 A. M. The afternoon peak is of more sustained duration, and has values equal to those of the morning. The characteristic of persons driving home for mid-day meals is also reflected in the hourly volume patterns.



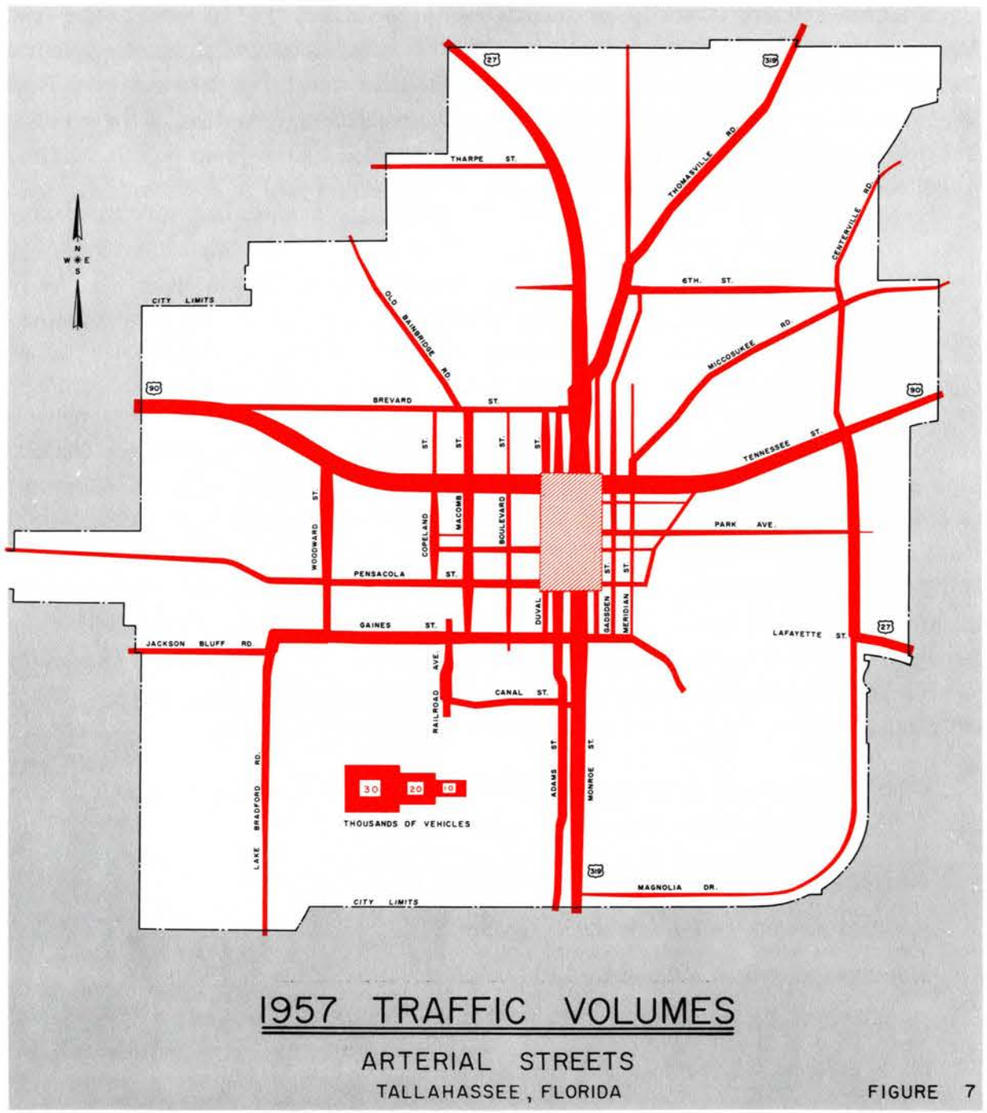
Daily Variations — Figure 6 depicts daily traffic volume fluctuations in the central business district of Tallahassee. Each day of the week is expressed as a percentage of the average weekday traffic. Volumes are slightly below average during the early part of



the week but increase slightly to an average on Thursday. Peak periods occur on Friday and Saturday with the peak traffic period between 8 and 9 per cent above the average weekday traffic. As expected, Sunday volumes reflect a decided decrease.

Volumes Outside Central Business District — Figure 7 shows average 1957 weekday traffic volumes on principal streets outside the central business district.

Only two streets outside the central business district were recorded as having daily volumes in excess of 10,000 vehicles, and, as could be expected, these routes were Monroe Street, the principal north-south artery, and Tennessee Street, the only direct east-west artery. North of the central business district, between Tennessee Street and the intersection of U. S. 27 and U. S. 319, the traffic volumes on Monroe Street range between 14,000 and 15,000 vehicles daily, which is the heaviest concentration in Tallahassee outside the central business district. Between the intersections with U. S. 319 and Tharpe Street, the volumes along Monroe Street average about 8,500 vehicles. The volumes decrease rapidly, however, north of this point to around 4,700 at the northern city



limits. The volumes on Monroe Street south of the central business district, decreased from 9,000 vehicles just north of Oakland Avenue to only 5,400 at the southern city limits.

Tennessee Street presently accommodates approximately 11,000 vehicles between Magnolia Drive and the western city limits. This represents a somewhat distorted picture for east Tennessee Street, since Route U. S. 27 traffic was being detoured over East Tennessee Street between Magnolia Drive and Monroe Street at the time of the surveys. The increase over expected normal volumes is evidenced by the jump in volume from 5,800 vehicles along Tennessee Street east of Magnolia Drive to 8,500 vehicles west of Magnolia Drive.

Thomasville Road, or U. S. Route 319 north is the third principal street or highway in Tallahassee serving Meridian Road traffic and the commercial area near the northeastern city limits. Average 24 hour traffic volumes range between 5,500 vehicles at the city limits to 9,200 near the intersection with Monroe Street.

Gaines Street is the fourth principal street outside the central business district. This street south of the downtown area, and west of Monroe Street, provides service to the industrial area located along the railroad, and also connects with Jackson Bluff Road to serve the municipal airport. Volumes range from 6,500 vehicles per day west of Adams Street to 9,100 west of Woodward Street. Woodward Street ranks next in importance as a local street, making connection between Tennessee Street and Lake Bradford Road. It serves as the principal distributor for Florida State University as evidenced by the 8,500 daily vehicles between Jefferson and Call Streets. Other daily volumes along this street range between 4,500 and 6,800 vehicles.

Other local streets carrying over 5,000 vehicles a day are listed below in relationship to their importance in the over-all street system:

Adams Street — 6,100 to 3,800 vehicles.

Railroad Avenue — 7,200 to 4,000 vehicles.

Macomber Avenue — 7,000 to 3,100 vehicles.

Lake Bradford Road — 5,700 to 2,600 vehicles.

Sixth Street — 5,400 to 2,300 vehicles.

Volumes at External Stations — Traffic volumes at each of the external cordon stations were recorded by mechanical counters and tabulations regarding hourly and daily variations were ascertained. In addition to the machine counts, manual classification counts were made to determine the composition of the traffic stream.

Table II shows the traffic volumes at the 17 external survey stations for an average weekday by type vehicle. The peak hour traffic volume is also given.

U. S. Route 27, as recorded at stations 6 and 11, carried the highest average weekday traffic volume. Forty-one hundred vehicles, and 4,700 vehicles, respectively, were recorded at these stations during a 24-hour period. U. S. Route 27 also had the greatest percentage of out-of-state passenger cars, with 28 per cent of the total traffic stream being attributed to this classification. Other U. S. Routes — U. S. Route 90 and U. S. Route 319 — carried daily volumes as recorded at stations on the cordon line of

TABLE II

VOLUMES BY TYPE OF VEHICLES

1957 Average Weekday — External Stations

Survey Station	*1957 Average Weekday Traffic*	*Passenger Cars*			*Trucks*			*Peak Hour*	
		Local	*Foreign*	*Total*	*Light*	*Heavy*	*Total*	*Volume*	*Per Cent of ADT (1)*
		%	%	%	%	%	%		
1	3,000	61	12	73	18	9	27	275	9.2
2	2,700	71	9	80	19	1	20	270	10.0
3	2,200	59	21	80	13	7	20	200	9.1
4	3,600	54	22	76	13	11	24	300	8.3
5	1,000	70	2	72	26	2	28	125	12.5
6	4,100	58	27	85	13	2	15	400	9.7
7	1,700	82	2	84	15	1	16	200	11.7
8	3,200	63	16	79	17	4	21	350	10.9
10	3,000	64	15	79	15	6	21	250	8.3
11	4,700	56	29	85	11	4	15	500	10.6
20	600	68	4	72	27	1	28	75	12.5
21	300	87	—	87	13	—	13	35	11.6
22	400	88	5	93	7	—	7	40	10.0
23	1,100	80	—	80	19	1	20	125	11.4
24	400	68	1	69	28	3	31	61	15.2
25	1,100	69	4	73	21	6	27	125	11.4
26	800	69	2	71	26	3	29	85	10.6
27	700	73	—	73	24	3	27	70	10.0

(1) Average Daily Traffic.

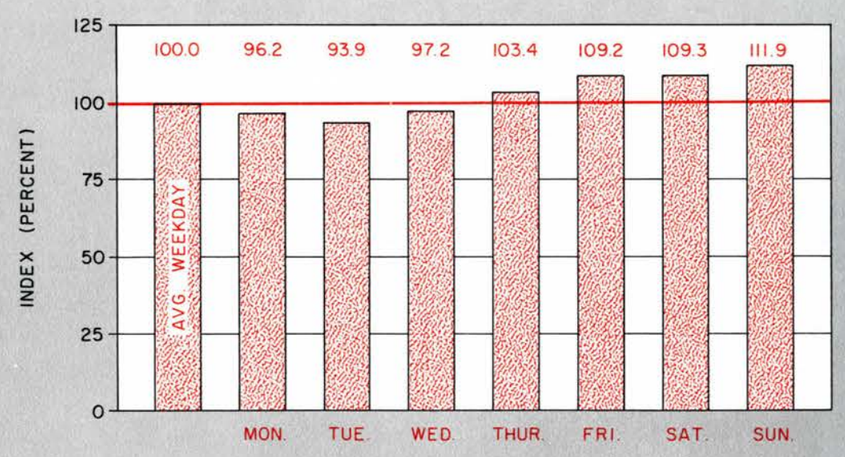
NOTE: Buses at external stations, less than 1 per cent, included in heavy truck classification.

3,000 vehicles or greater. Out-of-state passenger cars represented an average of 14 per cent of the total traffic stream on U. S. Route 319 and about 18 per cent on U. S. Route 90.

With the exception of State Route 20, which carries approximately 2,200 vehicles a day, volumes on other routes as measured at the survey area limits are generally below 1,000 vehicles a day.

The greatest volume of trucks, approximately 800 and 600, respectively, were recorded on U. S. Route 90 West and U. S. Route 319 south. These volumes represented a total of both light and heavy truck classifications.

Peak hour traffic flow at each station as presented in Table II represent present volumes which are below practical capacity for the given roadway, and allow for efficient movement of vehicles.



TYPICAL DAILY VOLUME FLUCTUATIONS

EXTERNAL STATIONS
TALLAHASSEE, FLORIDA
1957

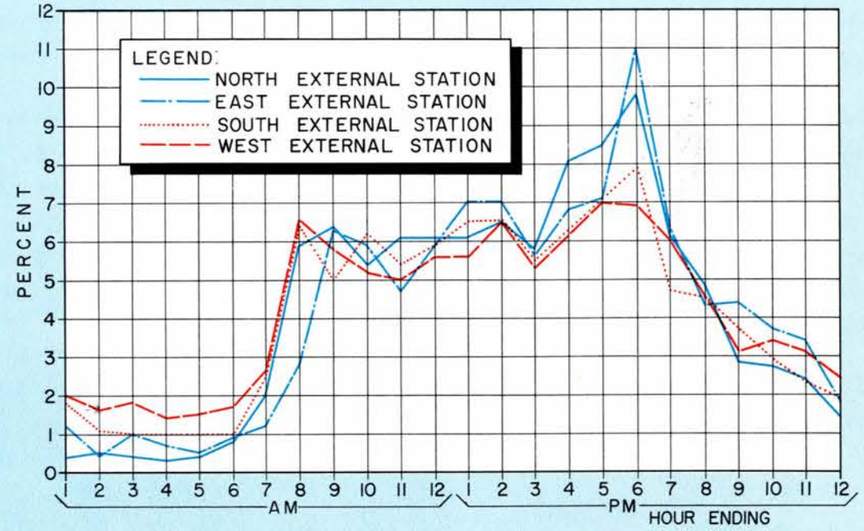
Wilbur Smith and Associates

FIGURE 8

Figure 8 shows a typical daily volume fluctuation that is representative of the external stations on the major highways. This pattern of daily fluctuation follows that for other areas in that the volumes remain below average the first of the week, then rise to reach a peak on the weekend.

Figure 9 shows the hourly variation at typical external stations. An examination reveals that the peak hour occurs between 5:00 P.M. and 6:00 P.M., and represents 7 to 11 per cent of the total daily traffic volume.

Special Traffic Loads — From manual classification counts made on major routes it was determined that during peak hours as much as one-fourth of the traffic volume on the routes in the vicinity of the city consists of state employees. The per cent of employees on seven principal routes are shown in Table III. The proportion of vehicles on state business is correspondingly increased while the Florida State Legis-



1957 TYPICAL HOURLY VOLUME FLUCTUATIONS

EXTERNAL STATIONS
TALLAHASSEE, FLORIDA
1957

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FIGURE 9

TABLE III

PER CENT OF GOVERNMENT EMPLOYEE TRAFFIC

Seven Highway Stations

Stations		*Total Traffic*[1]	*Gov't. Traffic*	*Per Cent*
1.	Route 90 W.	7,440	760	10
2.	Route 90 E.	3,665	526	14
3.	Route 27 N.	5,045	603	12
4.	Route 319 N.	3,458	328	10
5.	Route 27 E.	6,704	798	12
6.	Route 319 S.	5,398	768	14
7.	Route 363 S.	4,117	699	17

[1]Sixteen hour count at City Limits.

lature is in session and further emphasizes the importance of State and Local Government activities as a prime traffic generator in Tallahassee. With the close proximity of Government buildings to the central business district, problems of traffic congestion arise, particularly during the peak traffic periods.

Additional major traffic generators close to the central area of Tallahassee are the two State Universities; one located along Tennessee Street and the other in the area south of Gaines Street. In addition to the heavy traffic loadings created by these institutions under normal conditions, there are also extreme peak traffic periods which take place during various university events. The peak periods are, of course, abnormal during the athletic events at the stadium. With the construction of a new stadium this situation will become more aggravated.

To conveniently serve the peak traffic conditions of these major generators it is imperative that a new route be located so as to best serve these areas.

Travel Speeds

To determine vehicular speeds throughout the Tallahassee study area, numerous speed and delay runs were made, both during peak and off-peak traffic hours. From these data, it was possible to compute the various time contours from a common point in the business district of Tallahassee to other points along major arterial routes. An iso-

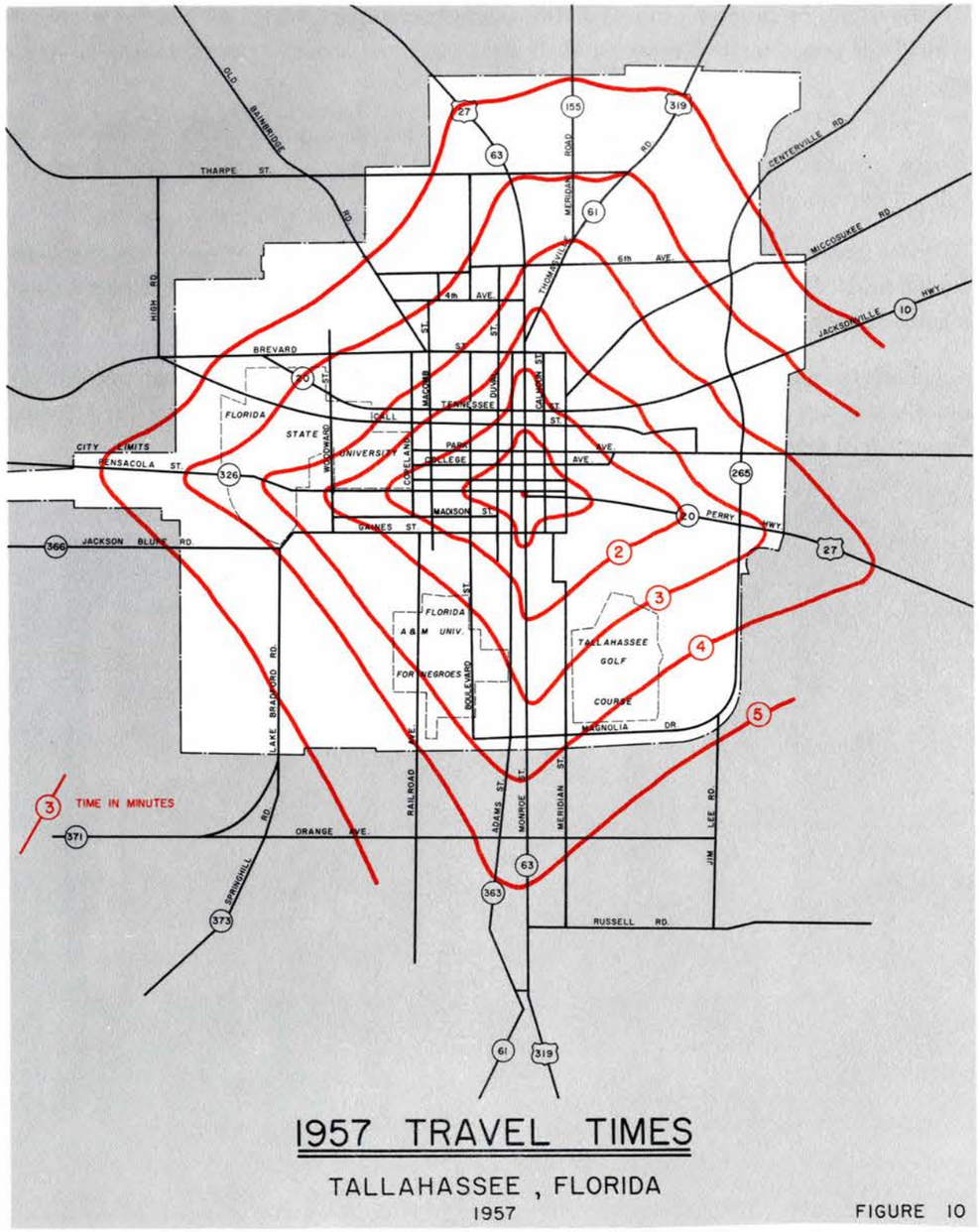


FIGURE 10

chronical map is presented in Figure 10, which graphically presents travel times by one minute increments for off-peak 1957 conditions. The relative fluency of traffic movements throughout the entire metropolitan area are easily discernible. From a common point, located at the intersection of Pensacola Street and Monroe Street, it requires approximately six minutes to reach the northern city limits. The eastern and southern city limits may be reached from this point in approximately four minutes; whereas, it requires almost ten minutes to reach the Municipal Airport. It must be remembered, however, that the values shown are average and represent a composite of many different speed and delay runs over the principal routes. The time required could vary substantially from the average values shown.

The uniformity in the time contours is quite apparent. This is somewhat unusual from that of most cities since usually the time contours tend to increase rapidly as the distance from the center of the downtown area increases. The fluent traffic movement within the central business district of Tallahassee does not cause great increases in the time contours as travel to the outlying areas is made.

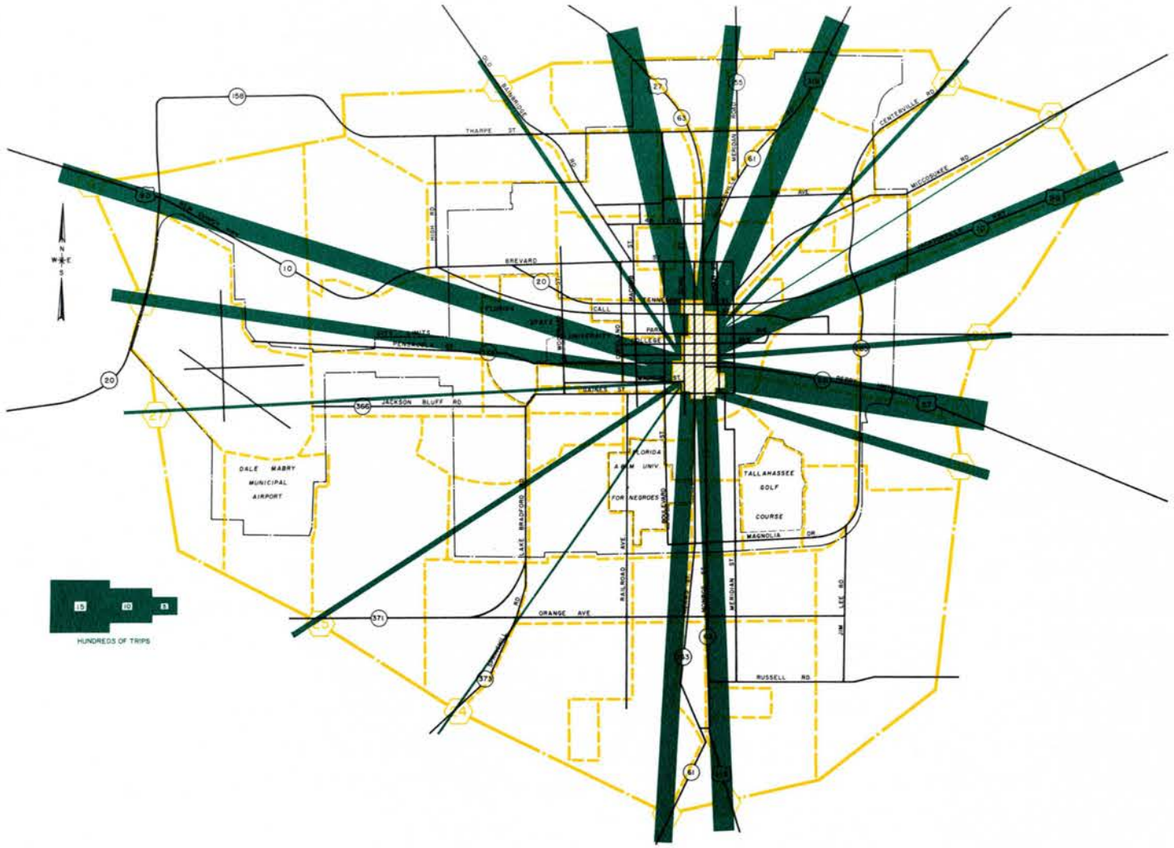
Little difference could be noted in the time contours recorded for peak traffic periods as compared to off-peak conditions, except within the central area of the city. The dispersion of traffic away from the central area enables much faster driving conditions even during the relatively short peak traffic period.

To determine the composition of speed and delay characteristics, a number of time runs were made on both north-south and east-west streets through the central area of Tallahassee. It was noted that typical average speeds through the central area approach 16.5 miles per hour except at several congested locations. In the areas, adjacent to the downtown area, average speeds of approximately 22 miles per hour were recorded on principal routes. The principal causes of delay were signals and parking; although, some pedestrian delays were observed at several intersections in the downtown area.

Travel Patterns — 1957

After an analysis was made of the origin and destination data, a number of desire line charts were prepared to illustrate graphically the principal traffic movements in and through the Tallahassee area. These charts are discussed and presented subsequently.

Distribution of Trips from External Stations to the Central Business District — As shown in Figure 11, there is a wide distribution of trips to the central business district from the various external stations. It is obvious, however, that the principal movements to the central business district are from the stations located along the major routes.



1957 DESIRE LINES
TOTAL VEHICLES
EXTERNAL STATIONS - C B D
TALLAHASSEE, FLORIDA
1957

Wilbur Smith and Associates

FIGURE 11

The large volumes from U. S. Routes 27 north and 319 north and from along U. S. Route 90, both east and west, are easily discernible. The smallest volumes of traffic destined to the central district were recorded at stations 21 and 24.

From the figure, the importance of the central area of Tallahassee is clearly indicated.

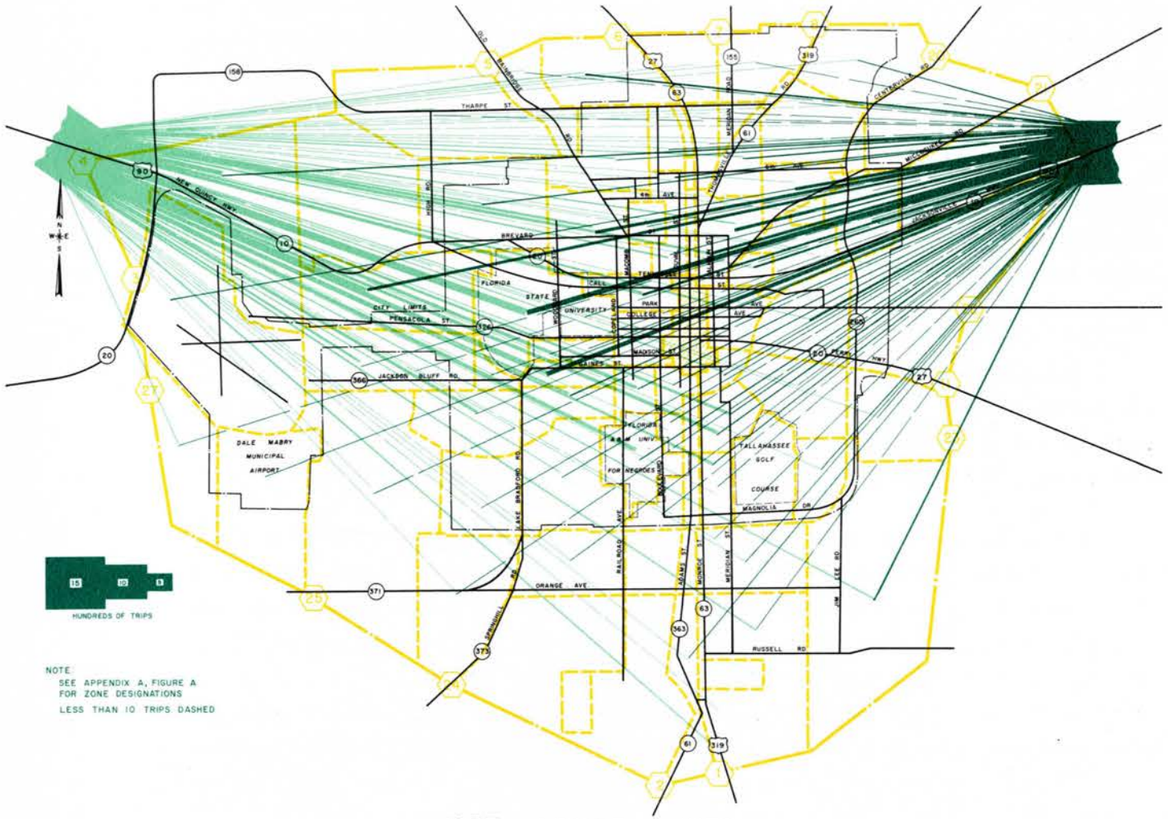
Distribution of Vehicular Trips from External Stations to Internal Zones — As shown in Figure 12 the movements from External Station 4 and External Station 10 to internal zones are graphically depicted. The trip distribution from both stations create a sunflower pattern of the movements to the various zones. Trips to the central business district have been excluded from this illustration. It is apparent that the heaviest movements are to the zones immediately adjacent to the central business district from both Station 4 and Station 10. Movements to the zones located on the periphery of the survey area are relatively light.

The generating characteristics of the zones located in the western and northwestern sections, as well as those located in the northeastern section, are quite apparent. It is also noted that a number of relatively short trips; that is, trips from the external stations to the zones immediately inside the survey area, are being made.

The distribution of trips from External Stations 11 and 23 and from External Stations 1 and 2 are presented in Figure 13. The distribution is depicted between the external stations and internal zones. Movements to the central business district have been excluded. As indicated in the previous illustration, the generating characteristics of the zones located immediately west of the central business district are apparent. The large generating characteristics of the zones located immediately south of the central business district in the Capitol area are also noted. As expected, the zones located at the perimeter of the survey area generated relatively small volumes. Of particular importance are the number of trips that are required to traverse the central business district to reach their primary destinations.

External to External Movements — The external to external movements for the total vehicular trips in 1957 are graphically depicted in Figure 14. The large east-west movement between Stations 11 and 4 and between Stations 11 and 6 are most apparent. The heavy movements over U. S. Route 27 and U. S. Route 90 are also clearly shown. Most of the other external stations are accommodating reasonably light volumes and the distribution from the various stations to other stations are not too substantial. Again, the large number of trips which must traverse the central business district are emphasized.

Total Distribution of Trips at External Stations — A composite of the distribution of movement at the various stations is depicted in Figure 15 for external to internal movements and for external to external, or through movements. From this illustra-



1957 DESIRE LINES
TOTAL VEHICLES
EXTERNAL STATIONS 4 AND 10
INTERNAL ZONES
TALLAHASSEE, FLORIDA
1957

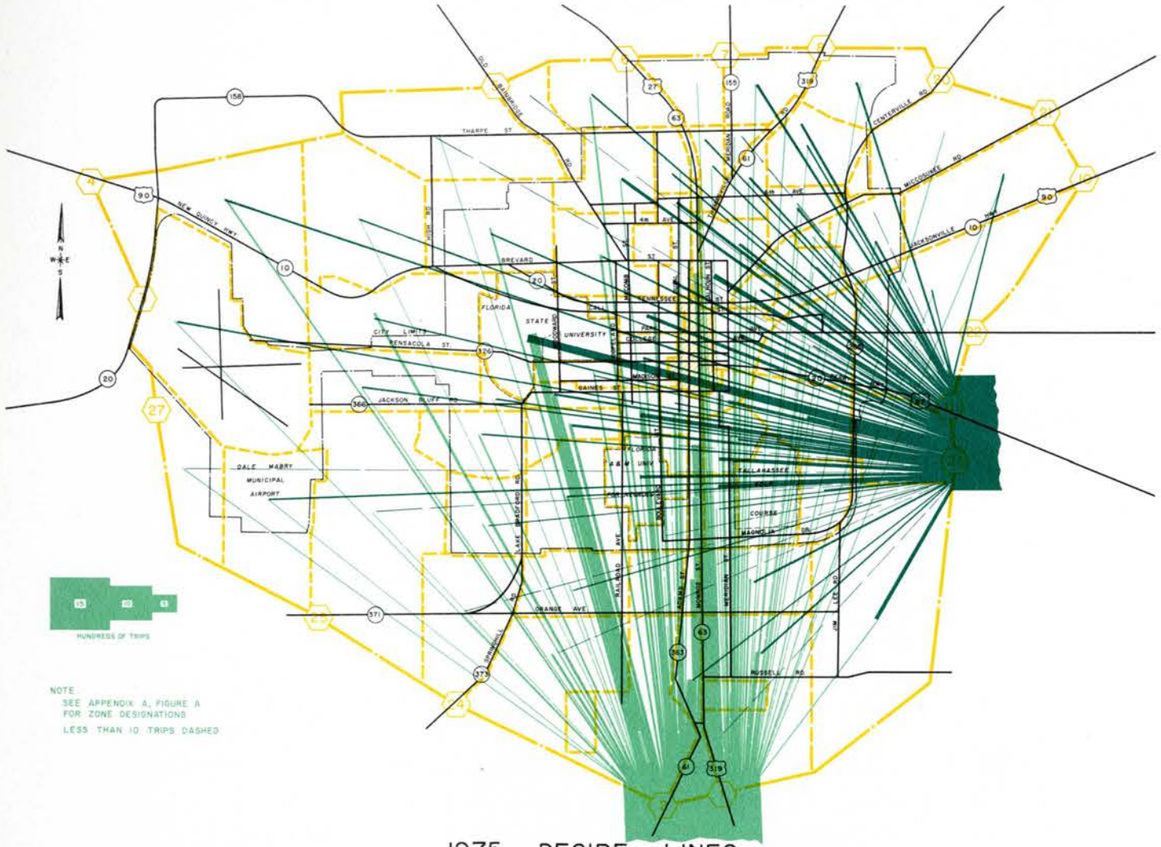
Wilbur Smith and Associates

FIGURE 12

tion, it is apparent that the heaviest trip movements occur at stations located on the major highways.

East-West Traffic Movements

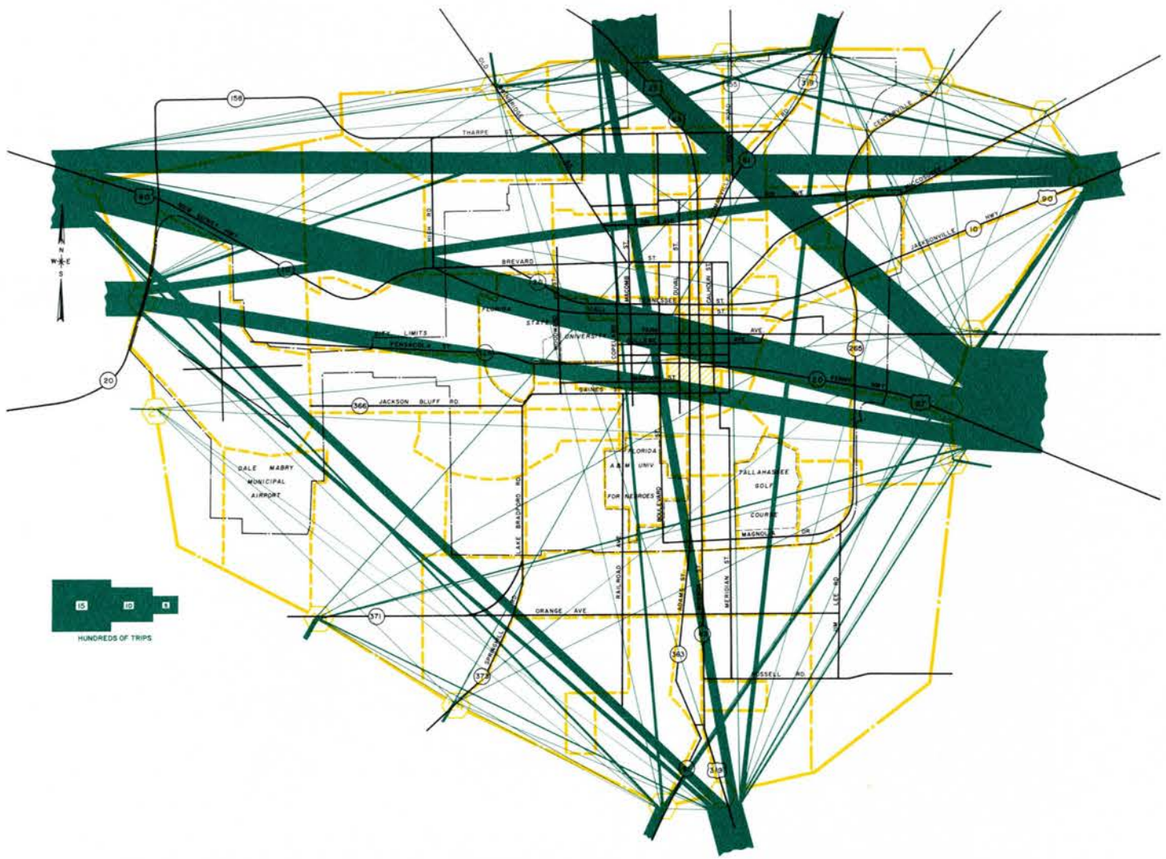
Traffic volumes on U. S. 90 were obtained from the origin-destination studies and indicated that at a point approximately two miles west of the city limits 3,585 vehicles were recorded in a twenty-four hour period. Of the total number of vehicles, 1,107 were destined to pass through Tallahassee and 566 had the central business district as their objective. Volume classification counts indicated that 52 per cent of the total number of vehicles were of Leon County registration, 8 per cent were from Jefferson, Wa-



1975 DESIRE LINES
TOTAL VEHICLES
EXTERNAL STATIONS 1&2 AND 11&23
INTERNAL ZONES
TALLAHASSEE, FLORIDA
1957

Wilbur Smith and Associates

FIGURE 13



1957 DESIRE LINES
TOTAL VEHICLES
EXTERNAL STATIONS - EXTERNAL STATIONS
TALLAHASSEE, FLORIDA
1957

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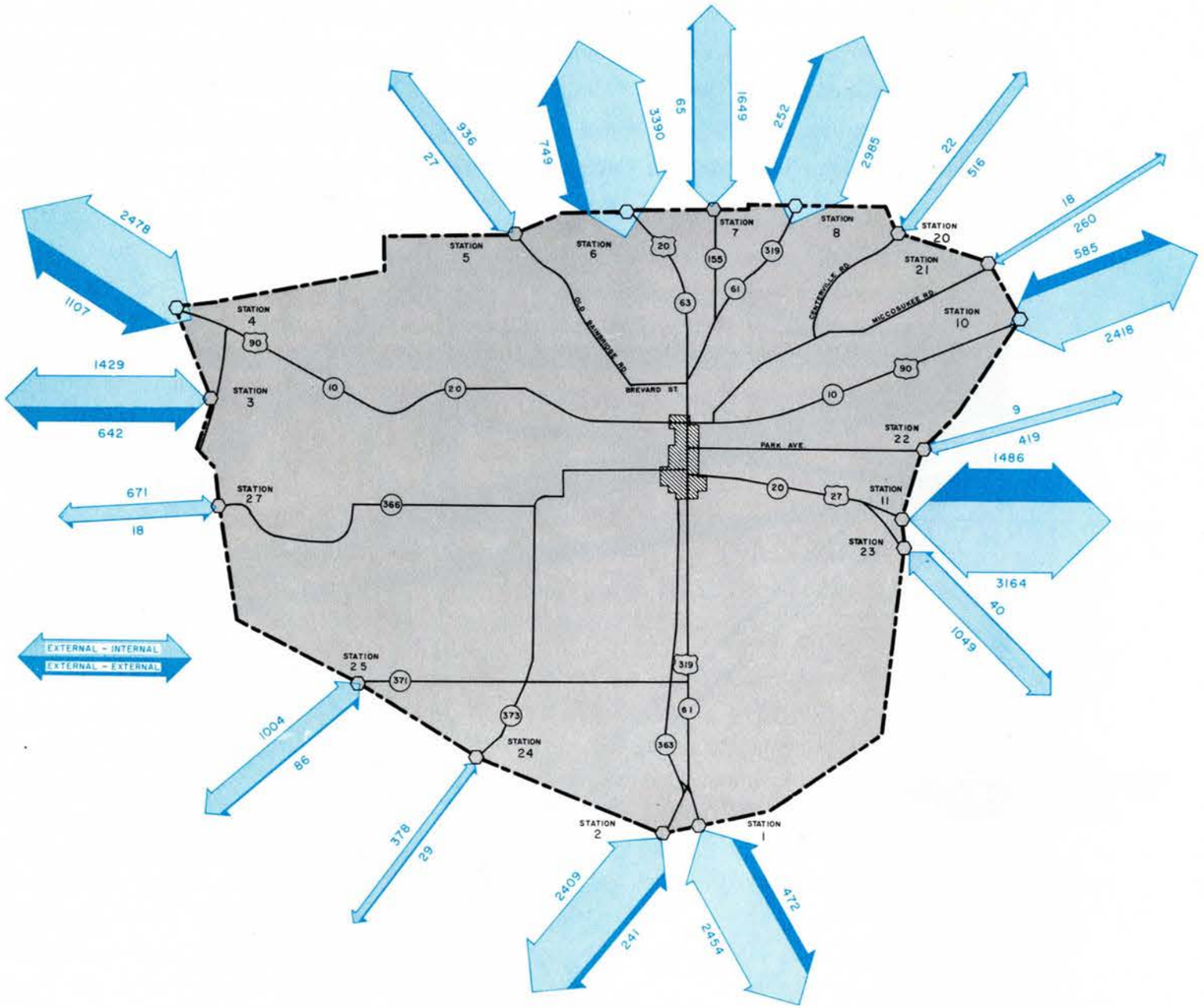
FIGURE 14



DISTRIBUTION OF VEHICULAR TRAFFIC

AT EXTERNAL STATIONS

TALLAHASSEE , FLORIDA

1957

Wilbur Smith and Associates

FIGURE 15

kulla, Liberty and Gadsden Counties, 19 per cent carried registrations of other Florida counties, and 21 per cent were from out-of-state. The proportional origin of traffic on the major routes in Tallahassee are presented in Table IV.

TABLE IV

PROPORTIONAL ORIGIN OF TRAFFIC ON MAJOR HIGHWAYS

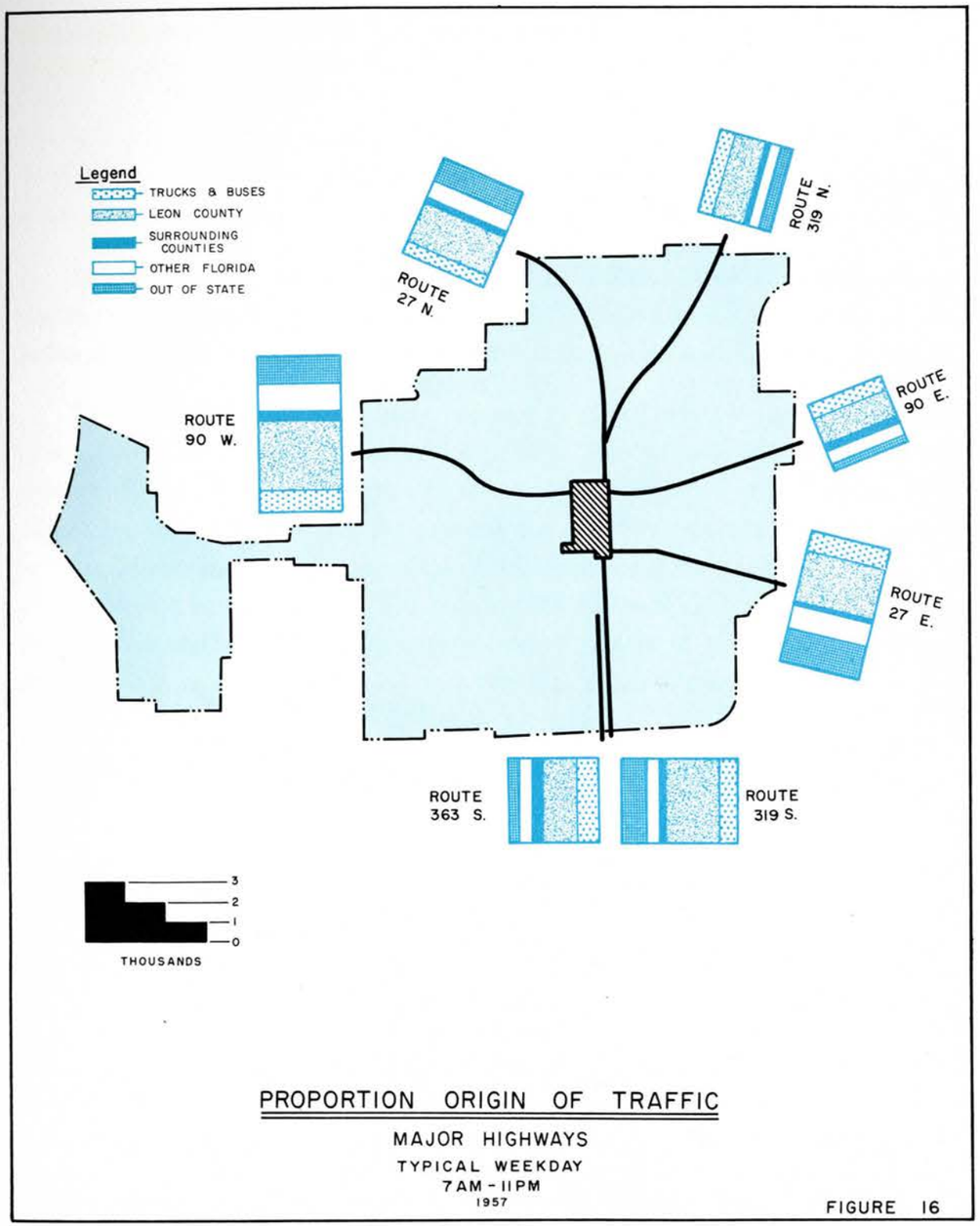
Cars and Light Trucks

JUNE, 1957

Location	*Leon*	*Out of State*	*Rest of State*	*Surrounding Counties*	*Total*
All Major Routes:					
Per Cent	53.5	19.9	17.9	8.7	100.0%
Route 90 West					
Per Cent	52.3	18.7	20.6	8.4	100.0%
Route 90 East					
Per Cent	55.0	15.8	20.3	8.9	100.0%
Route 27 North					
Per Cent	46.2	24.0	19.3	10.5	100.0%
Route 319 North					
Per Cent	57.1	21.5	12.4	9.0	100.0%
Route 27 South					
Per Cent	45.7	29.9	21.3	3.1	100.0%
Route 63 South					
Per Cent	59.8	21.3	12.3	6.6	100.0%
Route 363 South					
Per Cent	64.6	11.3	15.1	9.0	100.0%

At a point approximately one mile east of the city on U. S. Route 90, a volume of 3,003 vehicles was recorded with 585 through trips and 621 trips destined to the central business district. Classification of these vehicles revealed that 55, 9, 20, and 16 per cent were from Leon County, the surrounding counties, other Florida counties, and out-of-state, respectively.

For all major routes entering the City of Tallahassee, the composition of traffic volume is broken down into 53 per cent Leon County; 9 per cent



PROPORTION ORIGIN OF TRAFFIC

MAJOR HIGHWAYS

TYPICAL WEEKDAY

7AM - 11PM

1957

FIGURE 16

surrounding counties; 18 per cent other Florida counties and 20 per cent out-of-state, see Figure 16.

These data provide a picture of the east-west traffic volumes and composition of these volumes which are potential to the proposed East-West Interstate Highway link in Tallahassee.

Traffic Requirements

The Tallahassee area has a higher percentage of route trips destined to the city than most other cities of comparable size — 83 per cent. To best serve these motorists, any new facility must provide adequate and easy access to the central business district, the Capitol Buildings, and other principal areas of attraction in Tallahassee. The volume of through trips exceeds 30 per cent of the total traffic on only two major highways in the city, Route 27 southeast and Route 90 west. Route 27 east carries, by far, the highest volume of through trips, accounting for about one-fourth of all the through traffic on highways approaching the city. It is from this analysis of through traffic that the percentage of people bound for Tallahassee is derived.

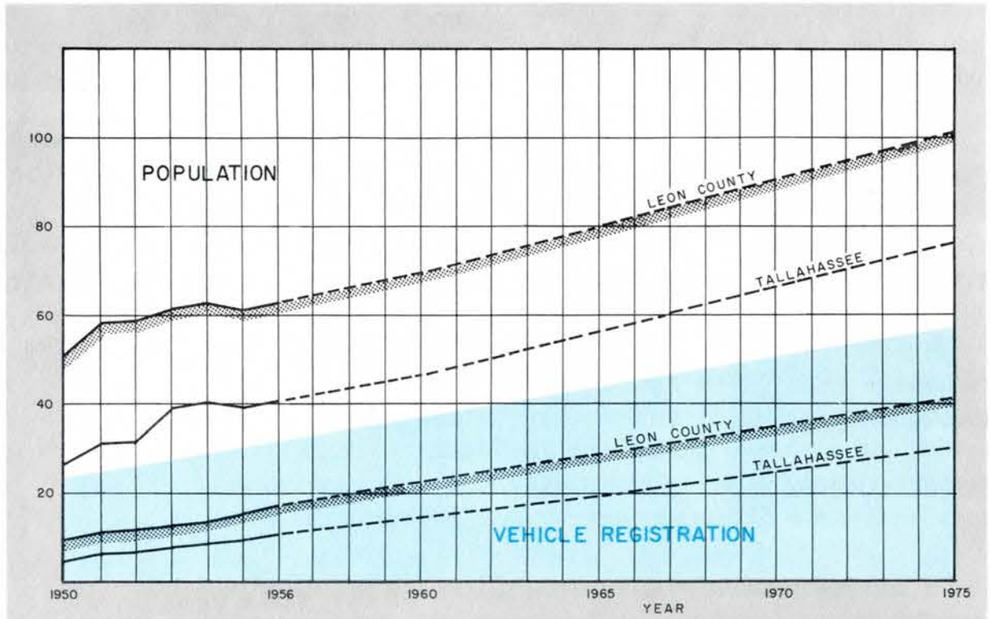
As a major interchange point for traffic on its several highways, the largest "interstate movement" in the area is between Routes 90 west and 27 east. Travelers to and from the central and southern counties in Florida make connections with the east-west route in Tallahassee. With these motorists presently having to go through the central business district and thereby adding to downtown traffic volumes, a tie-in with the interstate network outside of the city would be desirable, if not a necessity, in view of anticipated increases in future traffic volumes.

Chapter II
PLANNING FACTORS

In planning, each geographical area presents a different set of conditions, necessitating individual consideration. Since general knowledge of traffic and economic influences cannot be safely applied, detailed studies were undertaken in Tallahassee.

To properly plan major highway facilities in urban areas, it is necessary to take into account basic factors of land use, population distributions, and the over-all components of metropolitan planning. In this study, the collection of information had as one of the principal objectives the procurement of basic materials on anticipated future conditions and future transportation requirements of the Tallahassee area. These data serve two basic functions: (1) they provide the best basis for projecting travel patterns into the future — 1975; and, (2) many factors of route location and route services must be closely associated with city and regional planning.

The data contained in this chapter, together with those in subsequent chapters present a sound basis for route planning.



POPULATION AND VEHICLE REGISTRATION
LEON COUNTY AND
CITY OF TALLAHASSEE

FIGURE 17

Population Trends

The population in Leon County has shown a 12 per cent increase from 1940-45, a 45.5 per cent increase from 1945-50, and an increase since 1950 of 14.5 per cent. In the City of Tallahassee, there was a very rapid increase in population between 1945 and 1950 — 56.9 per cent. Between 1950 and 1955, the increase was 39.9 per cent. This increase of almost 40 per cent in the city since 1950 compares with a predicted increase from 1950-60 of 16 per cent for the nation as a whole[1]; further reflecting rapid growths in Florida. Population trends and projections for Tallahassee and Leon County are presented in Table V and are graphically depicted in Figure 17. While a portion of this rapid growth in the city is the continued movement of rural population to the urban areas[2], the major part of the increase is a result of the movement of

[1]"U. S. A. in New Dimensions," Thomas R. Carskadon and George Souce, The Twentieth Century Fund, Inc. 1957.

[2]Estimated as a 10 per cent cut in rural farm population for the decade 1950-60.

TABLE V

POPULATION AND VEHICLE REGISTRATION TRENDS

Tallahassee and Leon County, Florida

Population (000's)

Area	*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*	*1960*	*1965*	*1970*	*1975*
Tallahassee	27.2	34.6	35.8	39.4	40.1	39.4	40.9	46.8	56.6	66.3	76.1
Rest of County	24.4	23.6	22.9	22.1	22.4	21.6	21.8	22.6	23.6	24.6	25.6
TOTAL COUNTY	51.6	58.2	58.7	61.5	62.5	61.0	62.7	69.4	80.2	90.9	101.7
Motor Vehicle Registration — All Vehicles (000's)											
Tallahassee	4,610	6,212	6,667	7,817	8,496	9,633	10,935	14,763	19,930	25,305	30,685
Rest of County	4,446	4,615	4,650	4,814	5,224	5,796	6,440	7,953	9,391	10,621	11,846
TOTAL COUNTY	9,056	10,827	11,317	12,631	13,720	15,429	17,375	22,716	29,321	35,926	42,531
Vehicle Ownership Ratio — All Vehicles											
Tallahassee	5.90	5.57	5.37	5.04	4.72	4.09	3.73	3.17	2.84	2.62	2.48
Rest of County	5.49	5.11	4.92	4.59	4.29	3.73	3.23	2.84	2.51	2.32	2.16
TOTAL COUNTY	5.70	5.38	5.19	4.87	4.56	3.95	3.60	3.06	2.74	2.53	2.39

TABLE VI

POPULATION TRENDS AND PROJECTIONS — STATE OF FLORIDA

Year	*1915*	*1920*	*1925*	*1930*	*1935*	*1940*	*1945*	*1950*	*1955*	*1965*	*1975*
Urban Areas	407,416	465,350	745,803	901,627	992,870	1,191,105	1,440,107	1,758,209	2,100,000	3,350,000	5,300,000
Rural Areas	514,202	503,120	517,075	566,494	613,972	706,309	809,958	1,013,096	1,300,000	1,900,000	2,600,000
TOTAL	921,618	968,470	1,262,878	1,468,121	1,606,842	1,897,414	2,250,065	2,771,305	3,400,000	5,250,000	7,900,000

people into the Tallahassee area from other states. Considering the rapid development of the southern sections of Florida, it can be predicted that the Leon County area will experience a greater rate of increase in the near future. The population of Leon County is anticipated to increase to 101,700 people by 1975, an increase of 62 per cent over its present population of 62,700. By comparison, the population of Tallahassee is expected to almost double from its present 40,900 to approximately 76,100 by 1975. The concern of farsighted local and State officials to provide an adequate roadway network to handle this great increase is well founded.

Population trends for the State of Florida from 1915 to 1975 are presented in Table VI. Florida is increasing in population at the highest rate of any big state. It is estimated that by 1970, the population will have increased about 65 per cent from the present time. This compares with the average rate expected for the United States of about 25 per cent. By 1975, it is anticipated that the urban and rural area population will reach about 5,300,000 and 2,600,000, respectively. This, of course, indicates a total population of about 7,900,000 persons.

Distribution of People

Detailed population values are presented in Appendix B for the various zones within Tallahassee and Leon County for the years 1956 and 1975. As can be seen, many of the zones are expected to experience substantial population increases, particularly the zones in the northeastern section. Other zones can anticipate modest increases and some are expected to remain almost constant. Also presented in Appendix B are the 1956 and estimated 1975 values relative to dwelling units in Tallahassee and Leon County. As expected, increases in dwelling units coincides with the anticipated population trends. The number of occupied dwelling units for the period 1950-1975 is shown in Table VII.

Motor Vehicle Registrations

As a correlary to population increases is the estimated increase in motor vehicle registration. A summary of motor vehicle registration trends for Tallahassee and Leon

County is presented in Table V for the period 1950-1975. It is noted that there are presently approximately 10,935 vehicles registered in the City of Tallahassee which is expected to increase to 30,685 by 1975. Similar increases are anticipated for the remainder of Leon County. At present, there are 6,440 vehicles in Leon County outside the City of Tallahassee, which is expected to increase to about 11,846 by 1975.

Also shown in Table V are the vehicle ownership ratio estimates for Tallahassee and the remainder of Leon County. With the increasing number of two-car families, coupled with the expected rise in living standards, the vehicle ownership ratio is predicted to drop from its present 3.60 persons per vehicle to about 2.39 persons per vehicle by 1975 within Leon County. In the City of Tallahassee, there are presently 3.73 persons per vehicle which is expected to decrease to about 2.48 persons per vehicle by 1975. The anticipated growth rates of vehicle registrations are graphically shown in Figure 17. Detailed tabulations relative to motor vehicle registrations by the various zones within Leon County and the City of Tallahassee are presented in Appendix B, for the years 1956 and 1975.

TABLE VII

TRENDS IN RETAIL SALES, DWELLING UNITS AND LABOR FORCE

Leon County, Florida

Area	*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*	*1960*	*1965*	*1970*	*1975*
					Retail Sales ($000)						
Tallahassee	38,924	42,231	45,537	48,844	55,663	67,041	74,199	94,856	120,311	145,766	171,221
Rest of County	2,441	2,648	2,855	3,051	2,604	3,063	3,406	7,033	11,840	16,647	21,454
Total County	41,365	44,879	48,392	51,895	58,267	70,104	77,605	101,889	132,151	162,413	192,675
					Occupied Dwelling Units						
Tallahassee	7,275	9,479	9,808	10,889	10,900	10,912	11,100	13,000	15,944	18,676	21,743
Rest of County	5,586	5,591	5,602	5,631	5,660	5,678	5,730	5,982	6,297	6,608	6,919
Total County	12,861	15,070	15,410	16,520	16,560	16,590	16,830	18,982	22,241	25,284	28,662
					Employed Labor Force — Non-Agricultural — Place of Residence						
Tallahassee	9,155	11,674	12,071	13,290	13,527	13,284	13,746	15,770	19,088	22,340	25,645
Rest of County	8,216	7,937	7,718	7,443	7,543	7,280	7,301	7,627	7,949	8,305	8,640
Total County	17,371	19,621	19,789	20,733	21,070	20,564	21,047	23,397	27,037	30,645	34,285
Out-of-County	355	400	404	423	430	420	487	477	552	625	700
					Employed Labor Force — Non-Agricultural — Place of Work						
Tallahassee	11,376	13,811	14,063	15,072	15,380	14,981	15,551	17,731	21,216	24,646	28,051
Rest of County	6,350	6,210	6,130	6,084	66,120	6,003	5,983	6,143	6,373	6,624	6,934
Total County	17,726	20,021	20,193	21,156	21,500	20,984	21,534	23,874	27,589	31,270	34,985

Labor Force

Trends in labor force are shown in Table VII. It is noted that the resident employed labor force in Tallahassee in 1956 was 13,746, with an additional 1,805 making up the total number of people employed in the city. This resident labor force is expected to increase to 25,645 by 1975 with the total number employed in Tallahassee rising to 28,051. The employed labor force in Leon County is anticipated to be approximately 34,985 in 1975 with the area in Leon County outside of Tallahassee containing only 20 per cent of the county labor force. In 1956, the number of persons employed in Leon County amounted to 21,534 with 28 per cent working outside Tallahassee. This fits the pattern of rapid growth for Tallahassee and a movement of workers from the rural areas in Leon County to the metropolitan center. These 21,534 gainfully employed people in Leon County resulted in a payroll of which manufacturing accounted for just seven per cent. This compares with a percentage for manufacturing in Hillsborough County of 21 per cent, with other Florida Counties having as much as 25 per cent.

It is expected that the development of the industrial park at the site of the present airport will bring better balance to the Tallahassee economy. With an anticipated industrial and employment growth in the future, workers must be attracted from greater distances. Suburban housing areas will tend to expand farther and farther from the center of the city and places of employment, with a subsequent substantial increase in miles traveled to and from work. Use of a convenient high-speed local roadway network could reduce this travel time considerably and serve as a major inducement to recruitment of workers.

Detailed employment values by zones for Tallahassee and Leon County for the years 1956 and 1975 are presented in Appendix B.

Sources of Revenue

At present, there are four important sources of income for the city. The Government payroll, based on 3,600 employees, amounts to $10,800,000 with the combined payroll of the two State Universities accounting for $8,253,202. Another important source of income is an estimated $8,000,000 annual tourist business. The Elberta Box

Company is reported to have one of the largest payrolls in the area. The city lies within a region of great natural resources including timber, agriculture and some minerals.

The retail market covers a wide area because of the absence of nearby competitive cities. It has been estimated that the retail trade area population exceeds 165,000 persons. This trade area offers a source of revenue for the city that far exceeds the estimates that might be based on city or county populations alone.

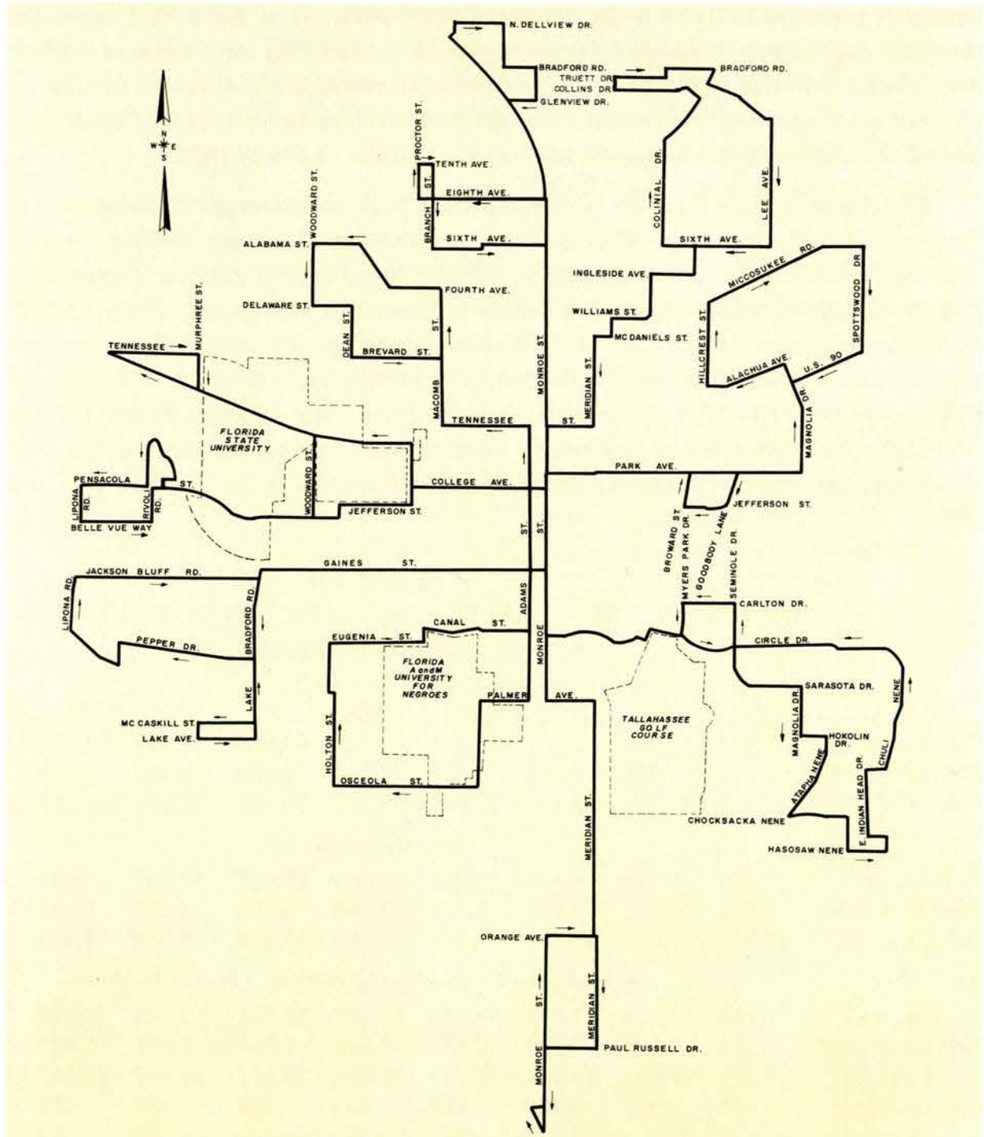
The revenue sources of the city have potential which support the general growth potentials that have been forecast in populations and registrations.[3]

Public Transportation

Because of its size and street pattern, Tallahassee has no current need for a large mass transportation system. At the present time, passenger cars are the major mode of transportation with 10,935 automobiles registered in the city in 1956. Because of the fluency of traffic movements throughout the metropolitan area and within the central business district of Tallahassee, it is apparent that trip movements are principally made by privately owned vehicles. This, of course, precludes the necessity for a comprehensive mass transit system within the Tallahassee metropolitan area.

It was not considered the purpose of this report to analyze the present or future mass transportation facilities within the Tallahassee area; however, serious consideration was required to properly integrate the transportation services within the study area. At the present time, there are approximately 12 bus units providing the local mass transportation services within the Tallahassee area. The five present routes are graphically depicted in Figure 18. It is obvious that the routes are well dispersed throughout the city and are designed to best serve passenger demands. As would be expected, all routes converge on the central business district. Most of the present schedules operate on 60-minute headways although the routes to the northeastern and northern sections of the city operate on 20-minute and 30-minute headways, respectively. The extension of the Monroe Street route to the most northern sections of the city operates only four times daily.

Tallahassee, like most American cities, has experienced continued decreases in mass transportation riders since the conclusion of World War II. With the improvement of



EXISTING TRANSIT ROUTES

TALLAHASSEE, FLORIDA

1957

FIGURE 18

[3]Basic data on revenue sources procured from the Tallahassee Chamber of Commerce.

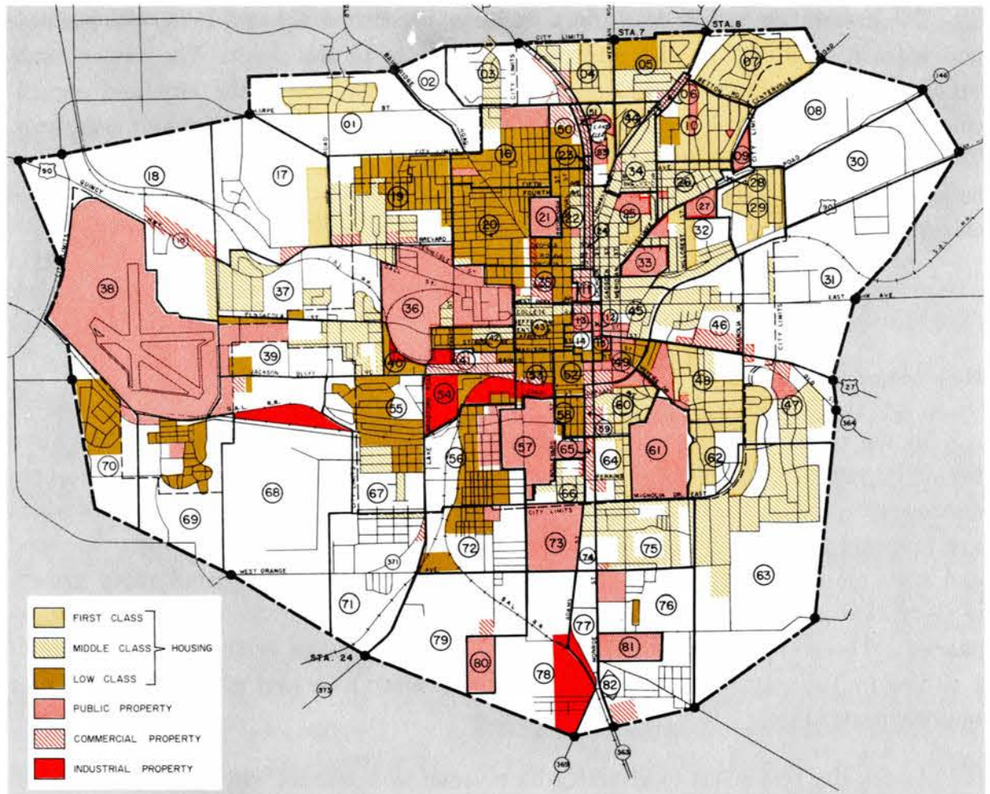
accessibility to the downtown area and more adequate parking or terminal facilities, it is unlikely that mass transportation will experience substantial increases in future years. It is, however, believed that with the improved route facilities that mass transportation might well establish express-type routes and, consequently, serve the central business district needs more adequately than at present. It is anticipated that by 1975 the daily passenger loadings will approximate 4,800 persons. Obviously, most of these trips will be to the central business district where parking facilities will likely be inadequate and where the major concentration of generators is located. It cannot be anticipated that many of the 1975 trip demands to the outlying areas or intra-zone movements can be served by mass transit.

Land Use

In cities the size of Tallahassee, there has been no serious deterrent to suburban or horizontal expansion — travel times are not great, and congestion is not bad. The expressway or the developments that speed travel movements to the central business district will bring a resurgence of people to the central business district. Ultimately, land uses will be largely controlled by transportation and access.

General land use patterns for the survey area are depicted in Figure 19. From the illustration, it is quite apparent that the area north and northeast of Tallahassee is largely devoted to middle and upper value housing. Building, in general, except for approximately 140 new units recently constructed in the southern portion of the city, has been heaviest in this northern section, with some expansion to the northeast and northwest areas. This trend in new housing construction is a combination of many factors. Among these is the fact that the area north of Brevard Street has long been a choice residential section with many beautiful homes, and it seems reasonable to expect that as long as land is available in this area, construction of homes will continue. Another consideration is that the important Indian Head area of housing has about reached its limit of expansion, which will tend to cause potential buyers of homes in this choice residential section to seek homes in comparable housing areas in other parts of the city. Detailed tabulations relative to dwelling units are presented in Table B-V, Appendix B.

The major areas of decay in Tallahassee lie generally to the south. These sections have developed into several compact pockets of very low-income housing, generally along Gaines Street, south of the city. "Smokey Hollow" and an area along Tennessee Street, east of the city, comprise the largest of these depressed sections.



PRESENT LAND USE

TALLAHASSEE , FLORIDA

1957

FIGURE 19

Railroads and industrial development are principally in the southern part of the city and have already broken the continuity of land use development in that area. Wholesale warehouses and light industry have tended to settle near the railroads, and it is reasonable to expect that future industrial and commercial development will locate in this general area and in the proposed Industrial Park.

The present pattern of land use is expected to continue through 1975, with business and industry south of the city and residential areas to the north. The present suburban areas can be expected to continue their expansion inside the city and significantly increase outward from the city limits in the northeast and northwest quadrants. To best serve these expected developments, a roadway network of maximum service to both residential and commercial interests must be developed and integrated with the existing highways and arterial streets.

New Major Generators

In the proposed plans for Tallahassee, it seems inevitable that there will be a number of important major traffic generators developed in future years. Plans have been developed regarding the abandonment of the present Muncipal Airport properties which are proposed for development as an Industrial Park. Plans have also been discussed and made relative to the proposed Capitol Center. With the anticipated rapid growth in all of Florida, it is obvious that the State's governmental facilities must be rapidly expanded. These expansions will require new office buildings and other governmental facilities in Tallahassee. These will logically be made as a part of the Capitol Center improvements.

As the city sets about to diversify its revenue sources and employment opportunities, numerous new commercial enterprises are apt to result. These will each be located with regard to transportation and terminal facilities. New shopping center areas and other developments of this kind appear likely within the next few years.

In the determination of a route location satisfactory to accommodate the present and future traffic services, all of the proposed major generators must be carefully considered.

Roadway Systems

In the Tallahassee area, there are several distinct road systems, each of which has an important relationship to the prosperity and development of the area. Within the city there are basic street facilities which serve the joint purposes of moving traffic through the city, or through sections of the city as well as moving people to and from their places of residence and places of employment, merchandising, etc. There is also a system of county roads under the general direction of the county commission. These roads serve important land service functions, and in many areas provide the main feeder services for the more important streets and highways. The street and highway systems were graphically presented in the previous chapters.

The arterial streets, such as Monroe, Tennessee, and Adams presently accommodate the city's heaviest traffic volumes, and tend to serve a greater variety of motorists than most other streets. They serve through traffic as well as local traffic and both the private passenger vehicle and the truck. They also intermingle pedestrians with vehicular traffic.

Within the area, there are several classes of State highways. Some of these are the most important Federal Aid Highways; others are secondary routes supported only with state funds and, as has been previously pointed out, a major east-west roadway will become a segment of the National System of Interstate and Defense Highways.

In planning a new highway, it is necessary to take into account not only the direct services which that roadway will provide, but especially the services that must be coordinated with the present locations and operations of other roadway facilities. While it was not within the scope of this report to develop a complete system of city, county, and state highways for the area, every attempt was made to ascertain the future road plans of the city, county, and state highway agencies so that the interstate route could be best located and designed to serve the route developments which are anticipated, providing a coordinated roadway system.

Chapter III
FUTURE TRAFFIC REQUIREMENTS

With automobile transportation growing so rapidly, and with the unusually high growth rates of travel in Florida, it is apparent that planning of highways and highway expenditures must contemplate traffic requirements of the future. This has been generally recognized and in the enactment of the Federal Aid Highway Act, the Congress prescribed that the Interstate System of Highways must be planned for 1975 traffic levels. Because of this, it was necessary to use the planning data and estimates of the future patterns of city and county development to fabricate a pattern of travel desires which is likely to be anticipated in 1975.

Method of Travel Projections

To develop a likely pattern of travel for 1975 for the Tallahassee area of Leon County, it was necessary to develop land uses and trends in population distributions between 1957 and 1975. To assist in this, a firm specializing in such work[4] was employed to provide certain basic information. From the anticipated distributions of land use and persons, it was necessary to analyze the different variables which affect travel according to the magnitude of each of the origin and destination survey zones. The origin and destination survey completed by the Florida State Road Department, provided very valuable information on travel characteristics in the Tallahassee area. The projection methods employed required the analyses of all variable factors of the individual zones, and the developments likely to occur in the individual zones. As Tallahassee continues to develop, the central business district will continue to grow in importance and will become the focus of more and more vehicles. Industrial areas of the city, which are just now beginning to develop, will likely accelerate and will become important generators of employment in the entire area. More and more workers will be attracted to the industrial and commercial businesses of the city, and an increase can be expected in trip generation by workers. Residential areas of the city will also grow rapidly, and will increase requirements for more vehicle trips and for more adequate terminal facilities.

The methods used for developing 1975 travel patterns for the Tallahassee area were similar to those that have been employed recently in projections in Tampa, Miami, Washington, Omaha, and other cities served by the consultant. Relationships are established between travel times and trip generation between all of the survey zones, differentiating between mode of travel and trip purposes. As previously indicated, the basic origin and destination data available from the survey conducted by the State Road Department, provided the necessary information on characteristics to enable the projection of generation factors on a basis comparable to the generation which is now found in the Tallahassee area. Assuming a reasonable roadway development and improvements, travel times were estimated between all of the origin and destination survey zones at 1975 levels. From the previously discussed projections of population, employment, motor vehicle registration, retail sales distributions, and land uses, the traffic generation of each zone was estimated and the amount of travel between all pairs of zones was calculated. In the analysis, all types of trips were considered, including the principal class of trip generated from the dwelling unit to the place of employment. The other types of travel are considered social, recreational, shopping, and business. It is expected that a large part of the travel in Tallahassee will continue to be between residences and the central business district. It will attract workers, shoppers, and persons on business missions.

In the projection of travel, consideration was also given to anticipated changes in basic working and living conditions, which are likely to occur by 1975. These include higher vehicle ownership per family, shorter work weeks, continued shift from mass transportation to private automotive transportation, continued tendencies to spread residential areas over more sparsely populated areas, and a continued major growth of Florida.

[4]Traffic and Trade, New Haven, Connecticut.

Basic curves adjusted for the anticipated changes were prepared as a statistical base for trip generation and zone to zone travel projections.

Because of the large number of combinations of travel generation and the great number of inter-dependent variables, it is necessary to calculate the likely patterns of travel for 1975 through successive approximation. To achieve this, a programmed high-speed electronic computation technique was employed. The early estimates of travel between each pair of zones might produce marked differences because one of the estimates measured the competition between places of work, while the other measured the competition between the sources of employment. By repeating and averaging, the high-speed electronic computer makes it possible to bring the estimates closer together until the independent estimates for inter-zone work trips agree within the limits of accuracy desired. Five approximations were necessary to achieve the desired relationships for the Tallahassee data. The last stage of the successive approximations produced the zone to zone trip generations shown in Table D-1 of the Appendix, and are representative of conditions at 1975 levels.

Special Considerations

A number of special considerations must be carefully examined in the course of locating a new highway facility. These considerations would, of course, include present and future conditions.

Peak Traffic Generators — In the location and design of routes for the future, it is necessary to take into account the relief which the route might afford not only the day-to-day recurring traffic conditions, but also the peak traffic generators. In this regard, it is considered essential to take into account the seasonal generation of traffic created in the capitol area by the meetings of the state legislature. It is also important that consideration be given to the unusually heavy traffic loads which the university events will create; this applies to both of the universities.

The generators of unusual traffic conditions will grow and new ones will likely develop. Major expansions are already under way at both universities. Frequent reference has been made to industrial expansion and the activities of local and state governments will undoubtedly continue to grow. Estimates of such growths are difficult, but the projections of traffic to 1975 levels have taken them into account, using the best available local estimates that can be expected by 1975.

Other — The "moving out," or disbursal of industry will create "criss-crossing" of travel in the future. Such a condition will not only affect movements along major traffic corridors, but will also create a general disbursal of movements throughout the area with home-to-work movements of one industry or generator conflicting with those of other generators.

In the development of new industries, and for that matter about every other type of future activity, major attention is being given to automotive services, one-story industrial buildings, requirements for employee parking, and other characteristics of modern design as they are related to the major demands on land areas. These, again, have a direct influence on traffic generation. The density of land use to a large extent controls the magnitude of traffic generation.

Upon considering the future of the business district, some thought was given to the possibility that automobiles might ultimately be prohibited from it. Studies of plans in other cities for the future of the central areas seem to indicate that such plans will likely have application only in the largest cities. It is not believed, therefore, that Tallahassee will need to restrict vehicles from its central business core within the limits of planning considered in this study, even with the most optimistic estimates of growth and expansion.

Trip Estimates

Based upon the characteristics of travel developed from the origin and destination data and the anticipated distribution of population, employment, labor force, retail sales and vehicle registration, the number of person trips by mode, within and through the survey area were estimated. It is expected that there will be approximately 331,386 person trips throughout the survey area of Tallahassee on a 1975 average weekday.

As shown in Table VIII, it is estimated that about 223,576 vehicular trips will be made daily in 1975. Of the total vehicular trips 190,186 will be made by private passenger car and 33,390 by truck. About 103,096 person trips will be made by auto passengers and less than 4,800 person trips are anticipated by transit.

TABLE VIII

TRIP ESTIMATES — 1975

Average Weekday

Type of Trip	*Transit*	*Auto Passenger*	*Auto Drivers*	*Truck Drivers*	*Total Vehicles*
Internal Zone to Zone	4,714	56,046	128,653	20,363	149,016
Internal to External	—	28,600	37,544	9,423	46,967
C.B.D. to External	—	9,750	12,819	1,555	14,374
External to External	—	8,700	11,170	2,049	13,219
TOTAL	4,714	103,096	190,186	33,390	223,576

It can be noted from Table VIII, that about 149,016 of the vehicular trips will have both origins and destinations within the survey area. It is expected that about 61,341 of the total vehicular trips will have either origin or destination within the study area, and that approximately 13,219 trips will have neither origin nor destination within the area.

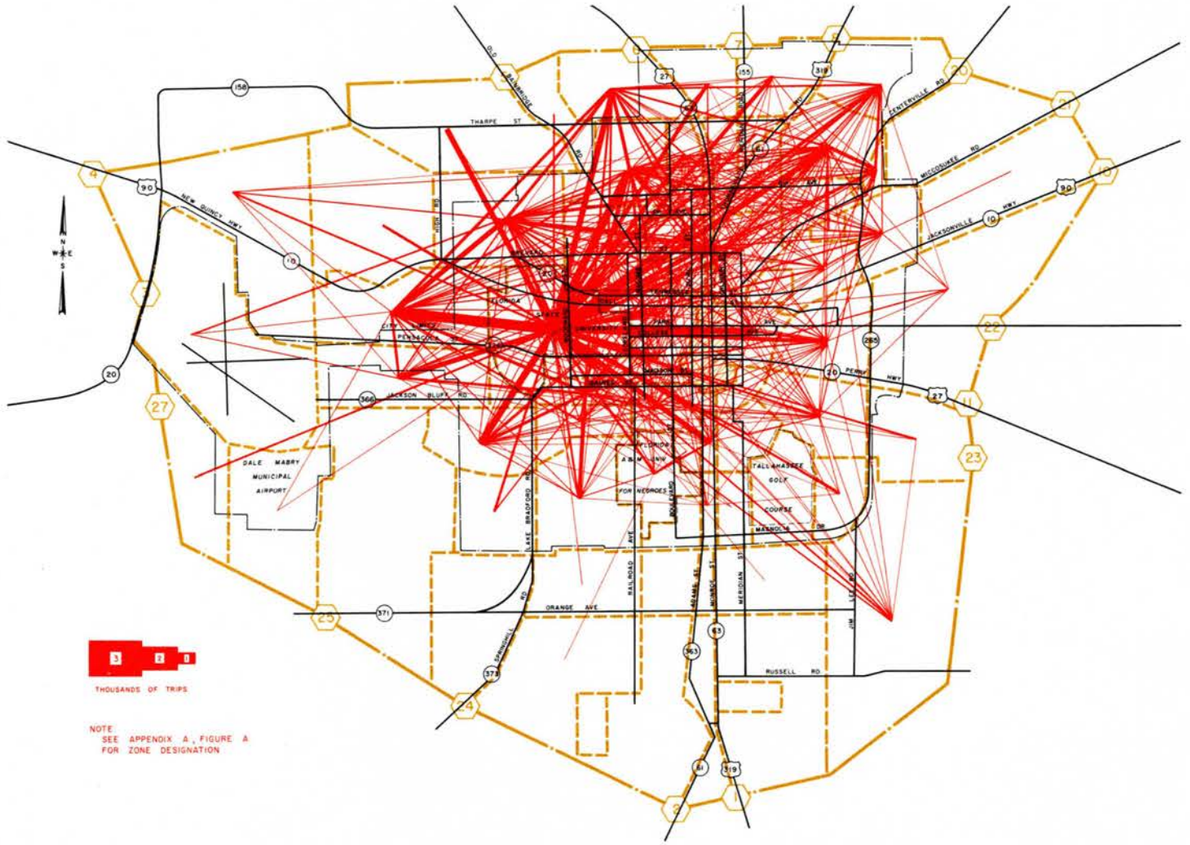
Estimated 1975 Travel Patterns

To illustrate the 1975 travel patterns, the origin and destination data were summarized and desire line charts prepared. These illustrations depict the principal traffic corridors and are extremely useful in locating proposed highway routes to serve the traffic needs. Desire line charts are subsequently presented for the internal to internal, internal to external, external to external, and the central business district movements. Detailed tabulations of trip movements and zone maps are presented in the Appendix.

Internal Zones to Internal Zones — In Figure 20, the anticipated movement of passenger cars in 1975 between internal zones, exclusive of the central business district are graphically depicted.

It is apparent that the heaviest movements occur between the zones located in the western section of the study area immediately adjacent to the central business district. The interchange of traffic between the outlying zones is quite negligible. There are principal movements occurring between several zones immediately east and west of the central business district. It is readily apparent, however, that the western zones generate the large percentage of the total passenger car movements.

Shown in Figure 21 are the internal zone movements for trucks. Like that of passenger cars, the principal movements occur between the zones located in the west-



1975 DESIRE LINES

PASSENGER CARS

INTERNAL ZONES - INTERNAL ZONES

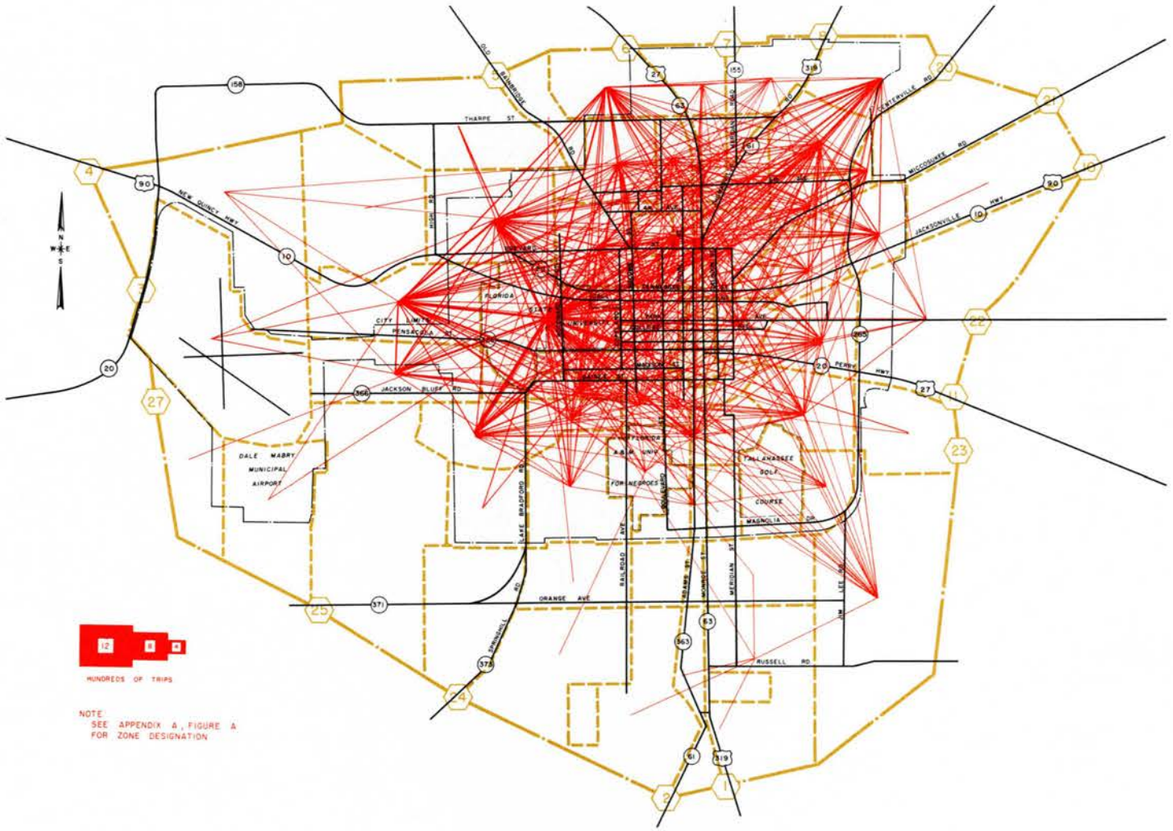
TALLAHASSEE, FLORIDA

1957

FIGURE 20

ern and northwestern sections of the survey area. It is also noted, that there are few inter-zone trips around the periphery of the study area. As expected, the total truck trips were of far less magnitude than passenger car trips between the various internal zones. Several of the zones located on the eastern side of the central business district generate reasonably large volumes to zones located immediately west of the central business district.

Internal Movements to the Central Business District — The distribution of passenger car trips to the central business district from the internal zones are graphically



1975 DESIRE LINES

TRUCKS

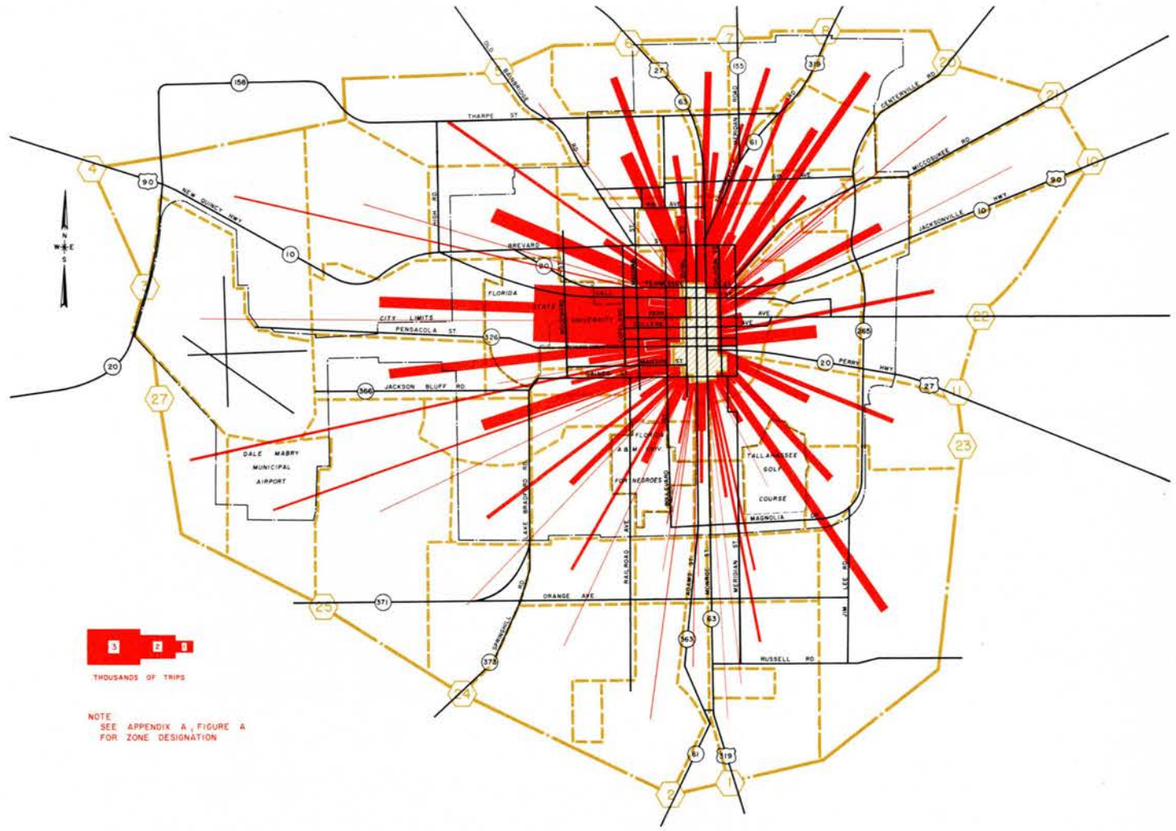
INTERNAL ZONES - INTERNAL ZONES

TALLAHASSEE, FLORIDA

1957

Wilbur Smith and Associates

FIGURE 21



1975 DESIRE LINES

PASSENGER CARS

CBD - INTERNAL ZONES

TALLAHASSEE, FLORIDA

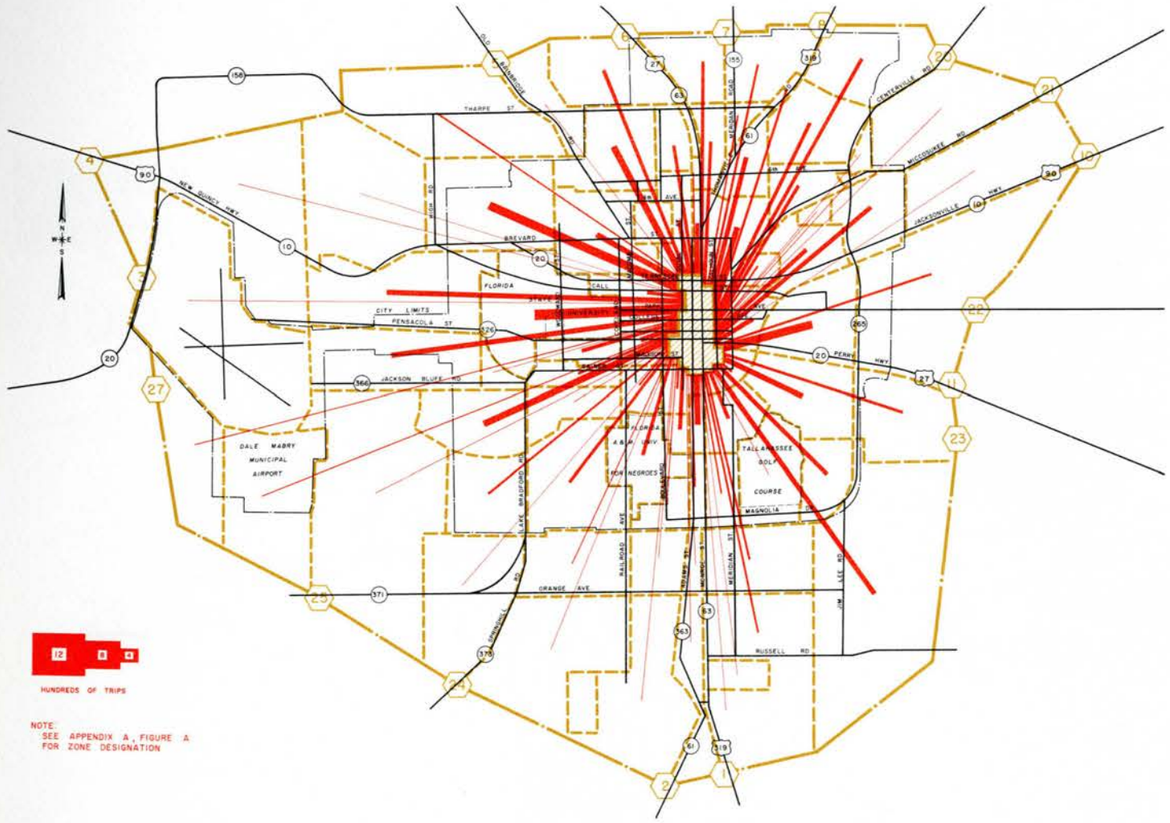
1957

Wilbur Smith and Associates

FIGURE 22

depicted in Figure 22. The heavy concentration of movements to the central area from the northwest and from the zones immediately to the east are emphasized. Heavy movements were also recorded to central business district from the southwest and northeast. The importance of the central business district is emphasized by the movements from all zones surrounding the area. As expected, the periphery zones generate the smallest volume of traffic destined to the central business district.

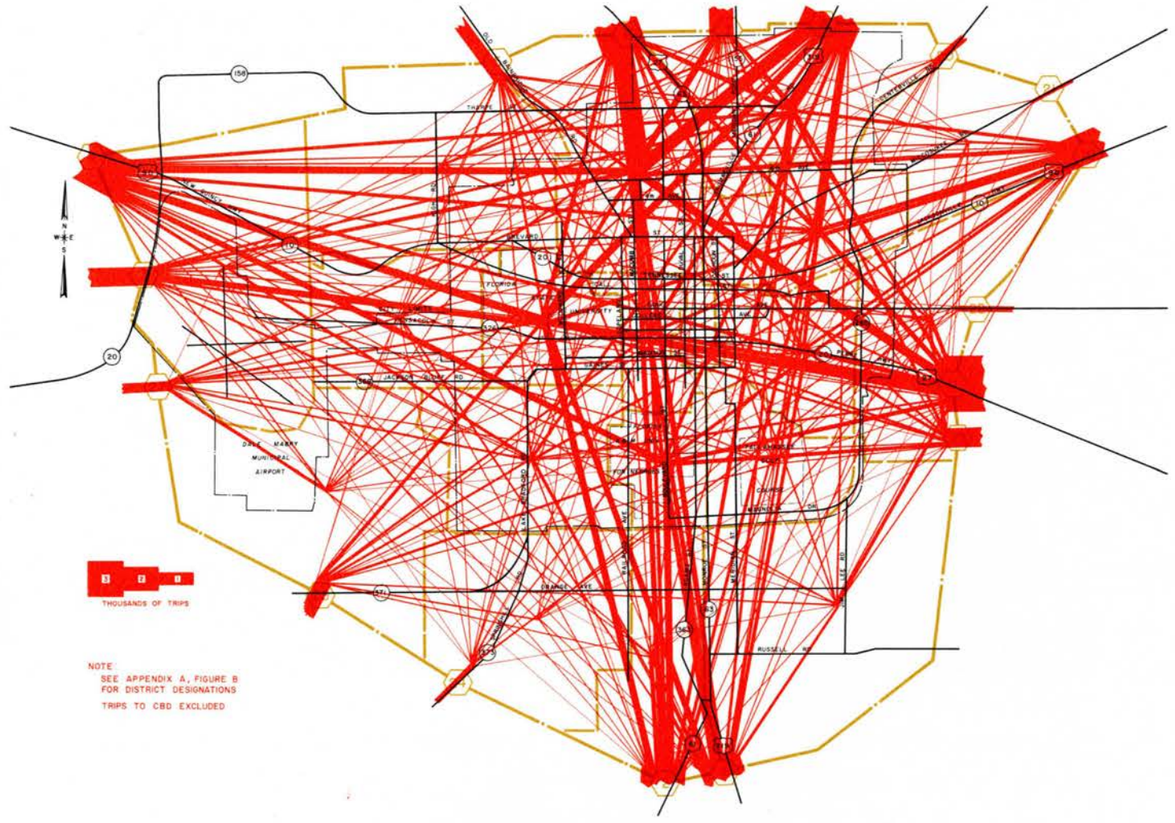
Truck movements from internal zones to the central business district are shown in Figure 23. Like passenger car movements, the zones in the northwest and west are the



1975 DESIRE LINES
TRUCKS
CBD - INTERNAL ZONES
TALLAHASSEE, FLORIDA
1957

Wilbur Smith and Associates

FIGURE 23



1975 DESIRE LINES
PASSENGER CARS
EXTERNAL STATIONS - INTERNAL DISTRICTS
TALLAHASSEE, FLORIDA
1957

Wilbur Smith and Associates

FIGURE 24

most significant. Again, truck movements to the zones around the perimeter of the study area are quite small.

External Stations to Internal Districts — For clarity, the internal zones have been grouped into nineteen internal districts, see Table D-11, Appendix D. Shown in Figure 24 are the passenger car movements between external stations and internal districts. There is a noticeable number of short trips; that is trips from the external stations to the zones immediately inside the survey area. The large volumes from the external stations at the northern boundary of the study area to the north and west of the central business district are emphasized. It is interesting to note that the internal districts to the west of the central business district also generate large volumes of trips from the other external stations.

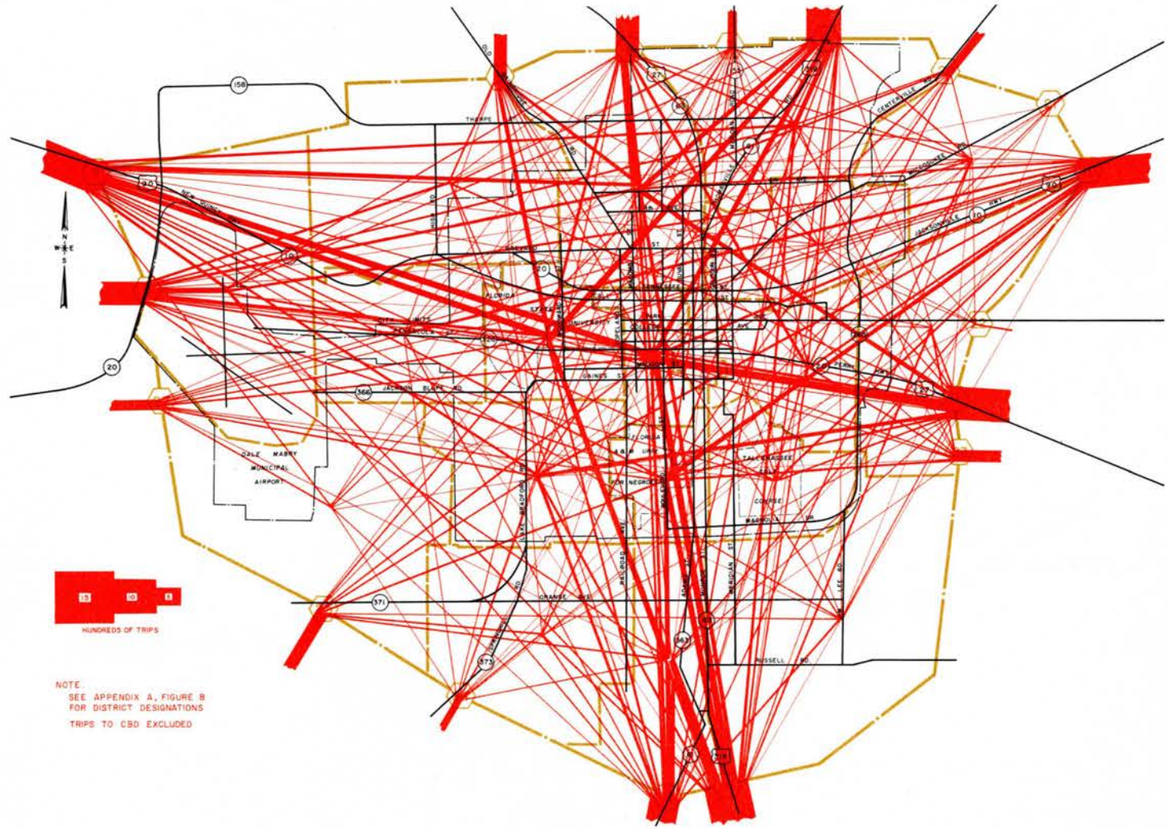
Truck movements between external stations and internal districts are graphically depicted in Figure 25. The movements are comparable to those of passenger cars except, as expected, much smaller volumes are estimated.

External to External Movements — Movements between external stations for all vehicles are shown in Figure 26. The same pattern is apparent as that of 1957 except for the anticipated volume increases. The movement between stations 10 and 4, 11 and 4, and between stations 11 and 6 are quite significant.

External Stations to the Central Business District — Total trip movements between the external stations and the central business district are shown in Figure 27. It is quickly noted that the principal movements occur along the major routes. Almost equal movements to the central business district are made over U. S. Route 319 north and U. S. 27 south. The magnitude of trips from U. S. 90 east and west are also most significant. Following the same pattern as that developed for 1957, the smallest volumes are from stations 21 and 24.

The daily movement of people into the central business district, per 1,000 population has steadily increased since 1926 in cities under 100,000 population. It has been estimated that the average number of persons per 1,000 population entering the central business district between the hours of 7:00 A.M. to 7:00 P.M. amounts to 665 people. Two hundred fifty-three of these had destinations in the central business district during these hours. The number of people in the central business district at the time of maximum accumulations amounted to 115 persons per 1,000 population[5]. With the population of Tallahassee expected to approximate 76,000 by 1975, this will mean

[5]Donald L. Foley, "The Daily Movement of Population Into Central Business Districts," American Sociological Reviews SVII (October, 1952), 541, Table 2.

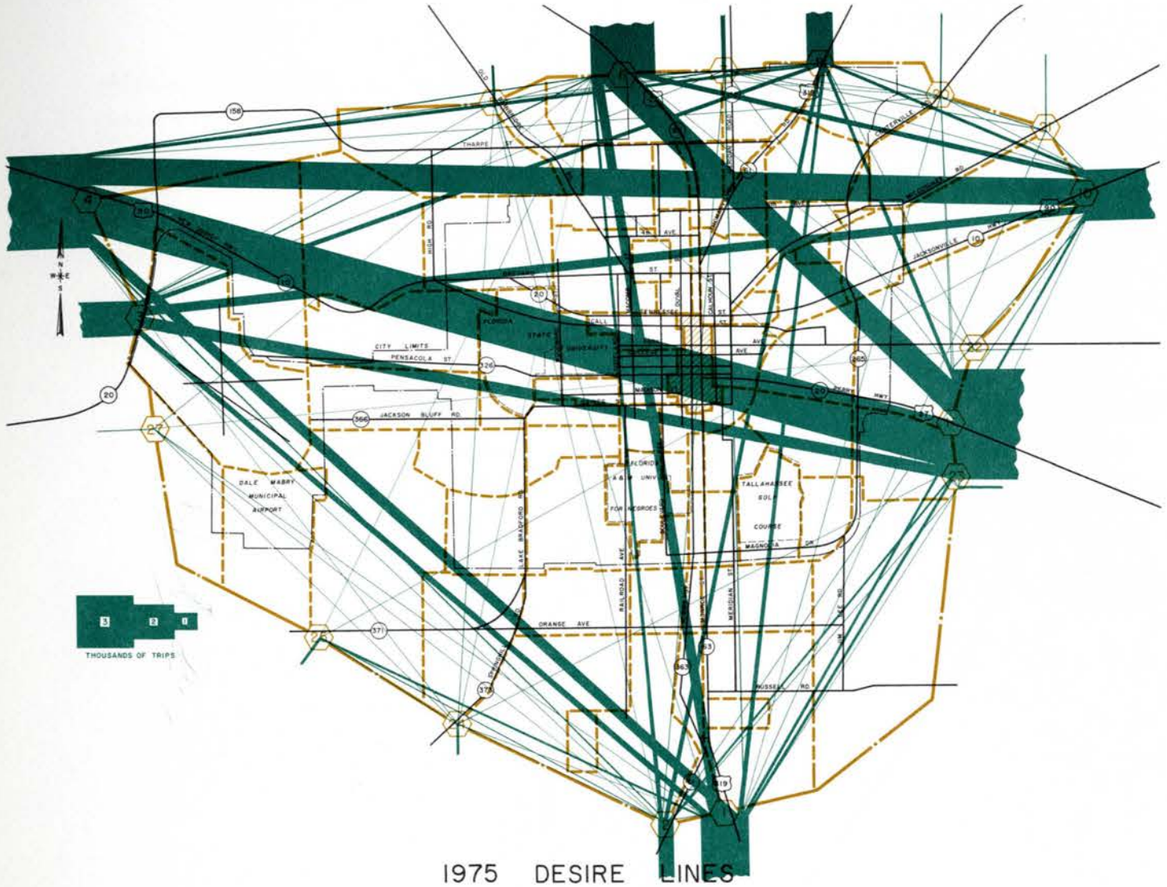


1975 DESIRE LINES
TRUCKS
EXTERNAL STATIONS - INTERNAL DISTRICTS
TALLAHASSEE, FLORIDA
1957

Wilbur Smith and Associates

FIGURE 25

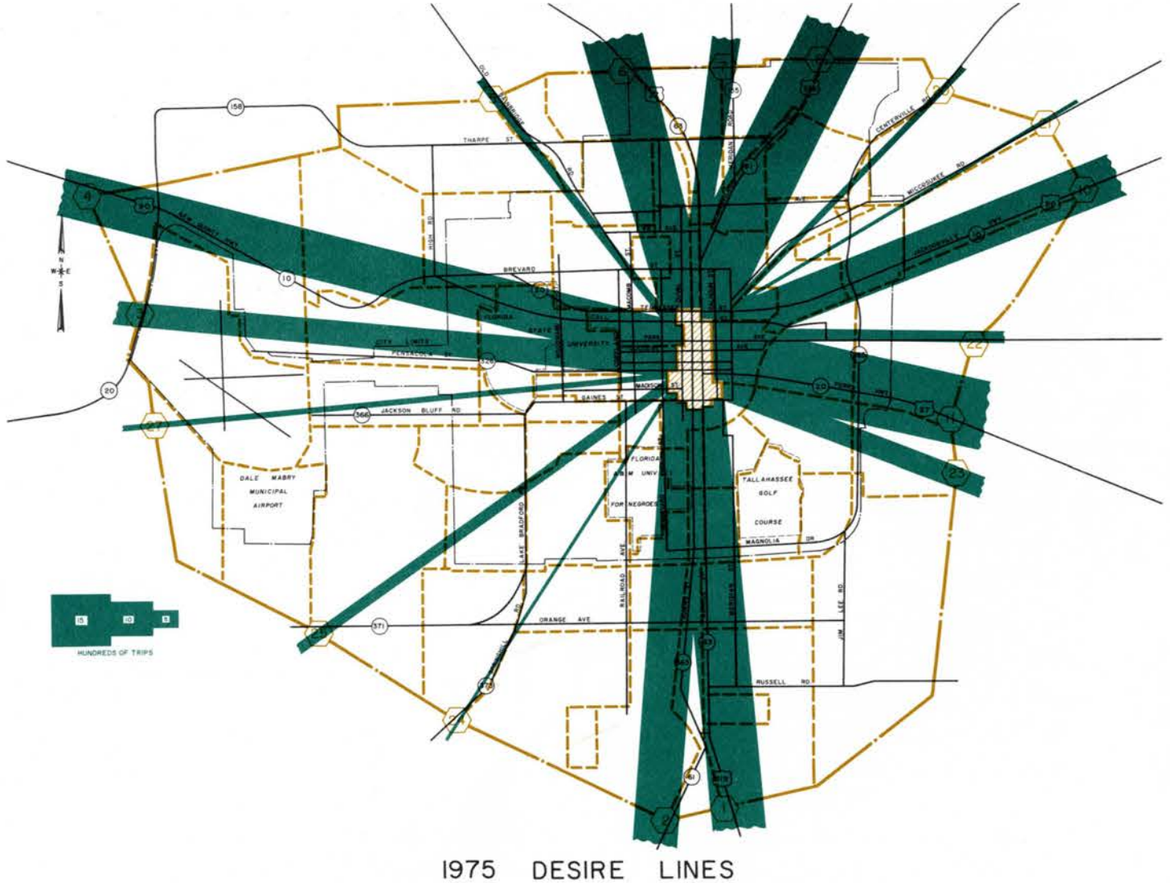
that two-thirds of the population, or over 50,000 people will enter the downtown area of the city during the course of a 7:00 A.M. — 7:00 P.M. day. This volume is almost double the number of persons currently entering the central business district daily. With the central business district served principally by automobile, plans must be made now to accommodate this great increase in local traffic in the principal shopping area of the city. The removal of the maximum amount of through traffic from the downtown streets of Tallahassee would appear to be the first step in any plan for combating future traffic congestion in the central business district.



1975 DESIRE LINES
TOTAL VEHICLES
EXTERNAL STATIONS - EXTERNAL STATIONS

TALLAHASSEE, FLORIDA
1957

FIGURE 26



1975 DESIRE LINES
TOTAL VEHICLES
EXTERNAL STATIONS - C B D

TALLAHASSEE, FLORIDA
1957

FIGURE 27

By-Passable Trips

Movements that can be by-passed or removed from the central area are of particular importance in the planning of a section of the Interstate Route in a metropolitan area.

The ability to by-pass certain types of vehicles is more important in considering the location of the route than otherwise. For example, the heavy truck movement from the south to the north through Tallahassee involves the transportation of flammable petroleum products and heavy commodities that cause slow and treacherous truck operations on key streets of the city at the present time. If these can be removed from the central area of the city, they will not only relieve traffic, but in some cases will minimize hazards.

By-passable trips for Tallahassee are considered primarily in terms of the removal of traffic from the local streets that have no reason or desire to be there. With the development of an expressway such as the proposed interstate route, it is not necessary to geographically carry the by-pass movements completely around the developed area of the city. These movements can be accommodated on the expressway-type facility because of its controlled access design features along with certain local movements that enter and leave the route. To illustrate, the traffic now travelling through the city on Route 90 would normally stay on the expressway and would thereby be considered to "by-pass" the city.

The origin and destination data provide a sound basis for calculating by-passable traffic for any given route. The desire line charts showing anticipated movements from external stations to external stations for 1975 (Figure 26) and the actual magnitudes given in the Appendix can be used to estimate the through traffic which the different routes would serve. It is apparent from an examination of the charts and data that the maximum by-pass conditions will result from a route which serves the through movements on U. S. Route 90 and also the movements between U. S. Route 90 west and Route 27 south.

Part II

ECONOMIC AND BUSINESS FACTORS

Chapter IV — Approaches to Economic Study

Chapter V — Economic Factors and Impacts

Chapter VI — Review of Previous Studies

Chapter IV
APPROACHES TO ECONOMIC STUDY

The over-all study varied from conventional route investigations in that it included detailed surveys and analyses of economic and planning factors. Since there will be no businesses located directly on the new facility, it was important to determine the effects on existing and potential business establishments in the vicinity of Tallahassee likely to be created by each of the alternative routes.

It was felt that an analysis of the patronage origin of the various types of business establishments when compared with the origin paths and volume of passing traffic, would provide an excellent indication of diversion effects. If a particular business, for example, gained a high per cent of its customers from out-of-state traffic, then, with a high diversion of this type traffic, it would seem reasonable that this establishment would suffer some loss of patronage. Since it would be erroneous to assume that a business drawing 50 per cent of its customers from out-of-state, would suffer a loss of 50 per cent of its business if half of the out-of-state traffic was diverted from its doors, a further refinement was introduced. This involved the diversion of the actual through traffic, which has no intention of stopping in Tallahassee, and segregating it from the transient motorists who could be induced to stop. It was also found that the patronage of service stations, restaurants and motels along a highway, complement each other in drawing customers from the traffic flow. This is very difficult to estimate, but is an important consideration in measuring loss or gain to retail business.

Available Data

Maximum use was made of origin-destination surveys recently completed by the Florida State Road Department. These surveys indicated the volume and percentage of through traffic, traffic destined to the central business district and vehicles going to other sections of Tallahassee. To facilitate and implement these data, the Tallahassee area was sub-divided into 83 zones with additional zones designed for the remainder of Leon County. The origins and destinations of motorists were recorded as obtained from interview stations set up on the roads leading to and from the city. Information available from the Road Department on traffic volumes, as outlined previously, was also put to effective use. All of the traffic information discussed in Chapter I was analyzed in relation to the studies of economic and business values. The information on volumes was particularly important as the basis for evaluating the studies of businesses.

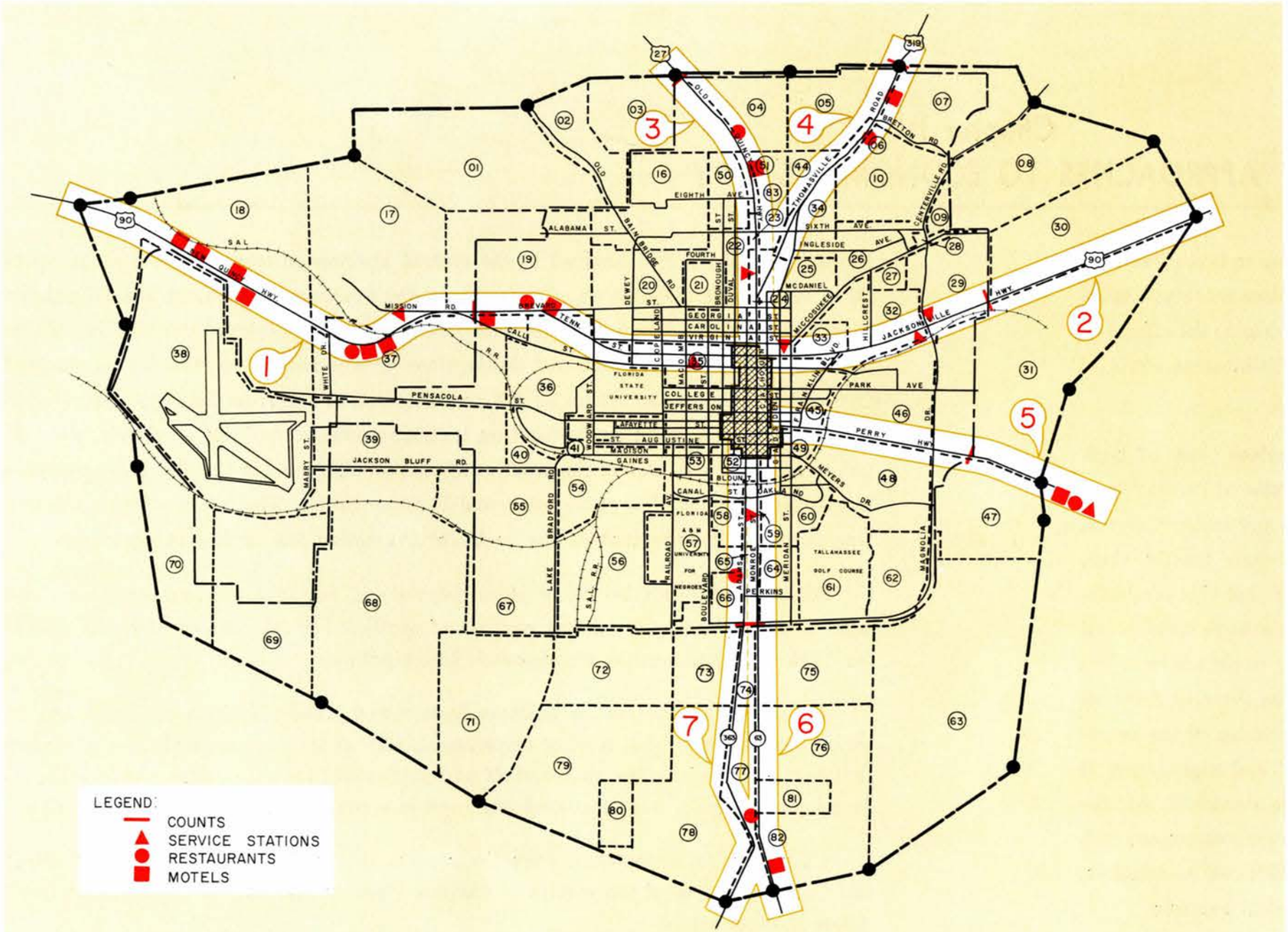
All of the information on projected populations, registrations, and land uses which were primarily collected for the purpose of synthesizing the pattern of travel desires for 1975 were pertinent to the economic investigations.

Published information on business factors and trends in the community and on such items as labor force, level of employment, and tax income was used. Special studies that had been undertaken by the staff and students of the universities and all other information available, were analyzed and used in connection with the economic analyses.

Of particular importance, were the reports that had been published on "before" and "after" studies of the effects of various types of highway developments on businesses in other states.

Studies Conducted

Along with the information outlined above and supplemental data, surveys and investigations were undertaken especially for this report.



CORRIDOR LOCATIONS

TALLAHASSEE , FLORIDA

1957

Wilbur Smith and Associates

FIGURE 28

The locations of service stations, restaurants and motels where information was collected are shown in Figure 28; the locations of classified traffic volume counts on the highways are also noted. When these survey locations are related to the facilities along the principal highways, it is found that there is a very high coverage of all of the principal automotive businesses along the key routes included. The coverage along U. S. Route 90 which will be one of the major competing routes with the proposed new interstate route was especially thorough. Studies and investigations included:

Motel Data — Motel owners or managers on all of the principal highways radiating from Tallahassee were interviewed to determine their views concerning the possible effects of a new east-west route on their business operations. Through the cooperation of a representative number of the motel operators, detailed examinations were made of the registration records of patrons of the motels. A sample was taken of at least 10 per cent of the registrations at each motel for a prior 12-months period. This made it possible to determine the origins of motel guests, states from which their vehicles were registered, average length of stay, and other basic data.

Restaurant Data — Observations were made of the vehicles stopping at the restaurants along each of the major routes entering Tallahassee. By recording the license data of the vehicles, it was possible to determine whether or not the car was from Leon County, or from some other county in Florida; it was also possible to determine the state of registration for out-of-state vehicles.

Service Station Patronage — Vehicle license data were recorded for vehicles patronizing service stations along the routes and, as with restaurants, distribution of the registrations reflected the origins of the vehicles from which the stations derived their patronage.

Business Trends — A thorough review was made of sales tax records for Leon County to determine the trends and volumes in retail sales. These records permitted the analysis of trends in specified geographic zones of the over-all survey area and also made it possible to procure trends in specific classes of businesses. Detailed information for the zones within Tallahassee and Leon County relative to retail sales is shown in Appendix B.

Land Values — From the realty tax records, a determination was made of the trends in assessments on property throughout the survey area. These assessments provide an approximate basis for the determination of changes in land values, even though it is realized that assessments are not in themselves a completely uniform and reliable basis for determining actual values. This is especially true in areas like Tallahassee, where such rapid growth and building development are taking place.

Physical Factors — Through field observations, basic information was recorded to relate actual physical conditions and present land uses to the various economic forces which were produced by the above studies for each of the corridors in which the alternate routes would be located.

Other Data — As previously pointed out, the other information, principally used in the economic and business studies included: (1) population, registration and land use figures; (2) anticipated individual and special local development plans; (3) published and unpublished data on the general economic effects of highways; and, (4) views and backgrounds of individuals and both official and unofficial agencies.

Methods of Analysis

To determine what the effect would be on businesses along the five primary highways in the immediate vicinity of the city, with the construction of a new controlled access highway facility, longitudinal areas were established along each of the major routes which, henceforth, will be referred to as "corridors." Terminating each corridor at the central business district resulted in the establishment of the seven corridors, shown in Figure 28.

Corridor 1 extends westward from the central business district along Route 90 west to the city limits. Corridor 2 runs from the central business district along 90 east to the city limits. Corridors 3 and 4 also originate at the central business district and extend to the northward city limits along Routes 27 north and 319 north, respectively. Corridor 5 follows Route 27 east from the central business district to the limits of the city, and corridors 6 and 7 extend southerly from the central shopping area to the city limits along State Routes 63 and 363, respectively. These corridors were individually analyzed, taking into account traffic volumes and patterns. Analyses also included land values, retail sales, and business activity of the motels, restaurants, and service stations in each corridor.

These corridors, while also used as the bases for comparisons, were primarily set up to determine the type and proportion of total traffic passing, which provided patronage for the businesses. It was also planned to relate these factors to conditions of traffic diversion to the new facility, and thereby determine the effect, if any, on the existing establishments.

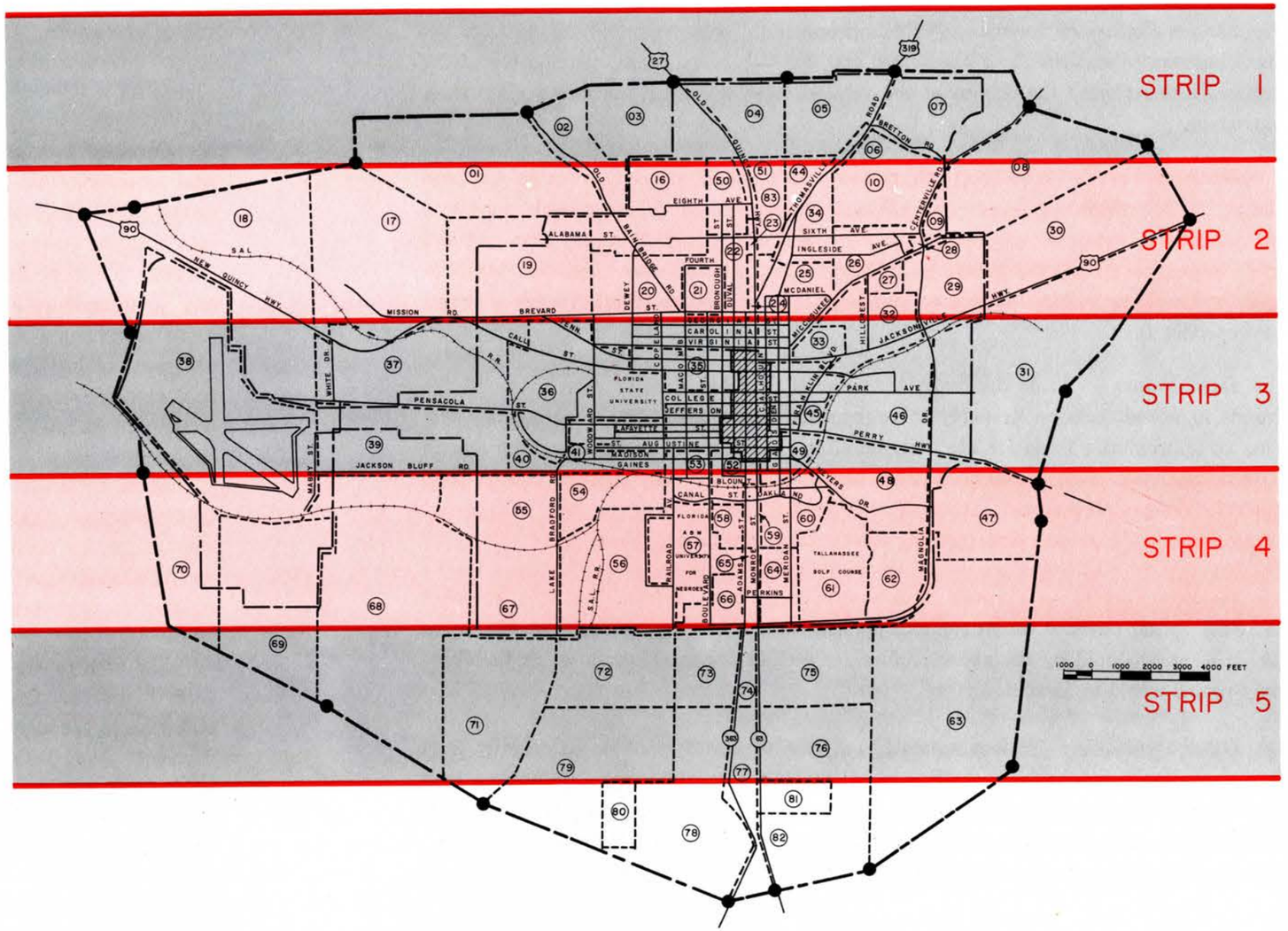
The area covered in each of these corridors varied considerably due to the difference in distance from the central business district to the city limits, along the major highways in the city. The width of each corridor was equal, taking in only those establishments along both sides of the highway. It was not intended to use the corridors for precise comparisons, but only as an indication of the relative importance of each and also as a method of classifying that portion of the Tallahassee business community which would be directly effected by diversion of traffic to a new facility.

Property tax assessments were classified into mile-wide strips running in an east-west direction across Tallahassee and its immediate surrounding area. These strips are designated as "Strip 1" through "Strip 5" and are graphically shown in Figure 29. The plan for dividing the survey area into east-west strips seemed to provide the most logical basis for studying the general trends in property assessments and values as they relate to east-west corridors. It was, of course, these east-west corridors that were pertinent in the comparison of lines for the east-west Interstate Route section.

The tax assessment values were made available by the County Tax Assessor's Office in Tallahassee and included a breakdown, by mile-square areas, of assessment data from 1948 to 1957. This information was used to indicate trends in development and approximate relative values in the various sections of the city. Because of the broad breakdown of these tax figures, precise land values within each of these mile-square divisions were incalculable.

The sales tax and other data available on the location of retail business were analyzed to determine the relative importance of different corridors and general areas of the city in terms of the total business done, and particularly with relation to the volume of business transacted in the central business district.

The data procured on motel visitations provided interesting findings relative to the origins of patrons. In a similar way, the attraction of gasoline stations from different sources of trade were also demonstrated; in other words, the studies of individual businesses were analyzed to determine the breakdown of patronage and to thereby gain an insight into the relationships of impulse buying from the exposed traffic on the major roadways on which the businesses are established to the total volume of business transacted. Desire line charts and relationships of the attractions of different classes of vehicles and customers from the traffic stream, related to the distribution of the various classes within the stream, provided the principal analyses derived from the business studies.



LOCATION OF
TAX ASSESSMENT STRIPS

TALLAHASSEE, FLORIDA
1957

Wilbur Smith and Associates

FIGURE 29

Chapter V
ECONOMIC FACTORS AND IMPACTS

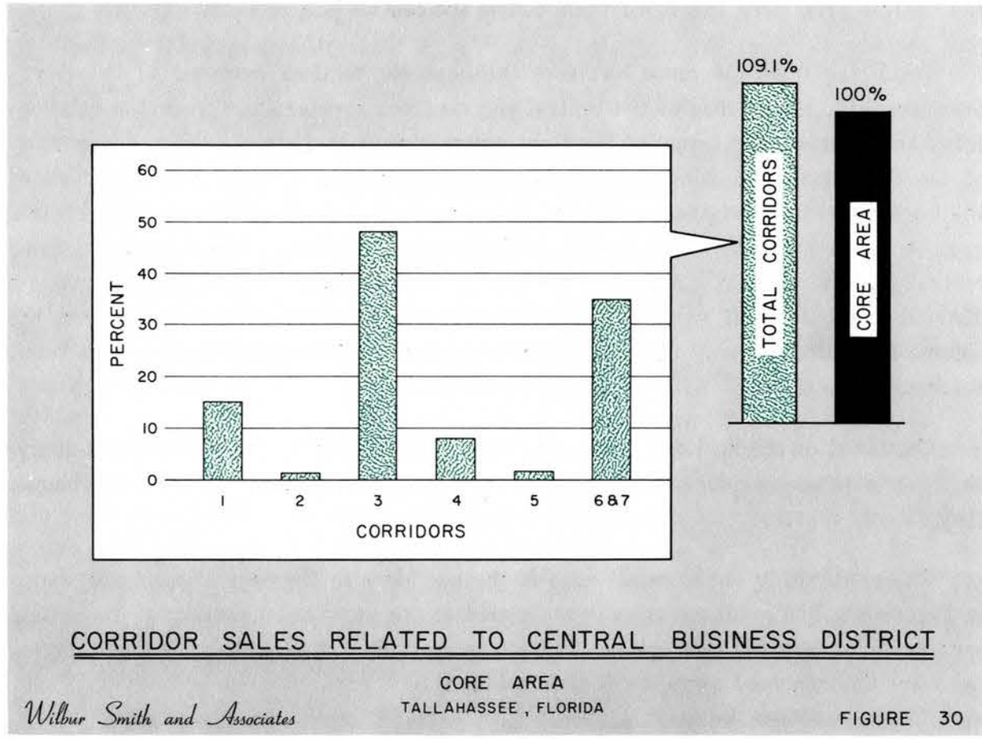
In route planning, as in all planning, both the economic and the physical approaches are necessary.

The studies described in the preceding chapter yielded interesting data relative to economic conditions in the Tallahassee area, as they might be related to traffic and highways. It is now the purpose to discuss the information which appears to provide the greatest insight into the impacts which a new east-west controlled access highway may have on businesses on existing routes and on the central business area of the city.

Retail Sales

The total retail sales in the city for 1956 amounted to $74,199,000; of this amount, $22,321,000, or about one-third of the total retail business in the city, was accounted for by the tight central business district, bounded generally by Virginia, Calhoun, Gaines and Duval Streets, see Appendix B. This central business district definition conforms to the one established by the State Road Department in origin-destination analyses. For business purposes, it is a very limited area and is more appropriately the "hard core" of the central business district. The variations in defining central business districts make it difficult to make business and economic comparisons in different cities.

Using the hard core area for comparison with retail sales in the previously defined route corridors, it is found that the total business activity in the corridors amounts to about 60 per cent of the activity in the central business area (hard core). The businesses along the general corridor of Route 27 north (Corridor 3), do almost one-half as much retail volume as the central business district. Along Route 90 west (Corridor 1), the business volume is only 15 per cent of that of the central business district. Along the combined State Routes 63 and 363 south (Corridors 6 and 7), a volume of about 35 per cent of that of the central business district is achieved. Business volumes along other routes are negligible compared to the total volume of the central business district. The relationship of retail sales in the central business district to sales in the route corridors is shown in Figure 30.



CORRIDOR SALES RELATED TO CENTRAL BUSINESS DISTRICT

CORE AREA
TALLAHASSEE, FLORIDA

Wilbur Smith and Associates

FIGURE 30

The central business area of Tallahassee has tended to sprawl along the principal streets. Since the terminology of "Central Business District" as previously pointed

out, includes such a very small part of the downtown area, the retail sales were further analyzed according to a larger area, adding the origin-destination zones surrounding the zones which were included in the central business district. A geographic area, referred to as the "Downtown Area" or "Central Area", is defined as that approximately encompassed by Copeland Street, Palmer Avenue, Franklin Boulevard and Colonial Drive, and 8th Avenue[6]. The retail sales of the downtown area amounted to about $47 million, or approximately two-thirds of the total retail business in the city. Also, the central area sales are more than double the central business district sales.

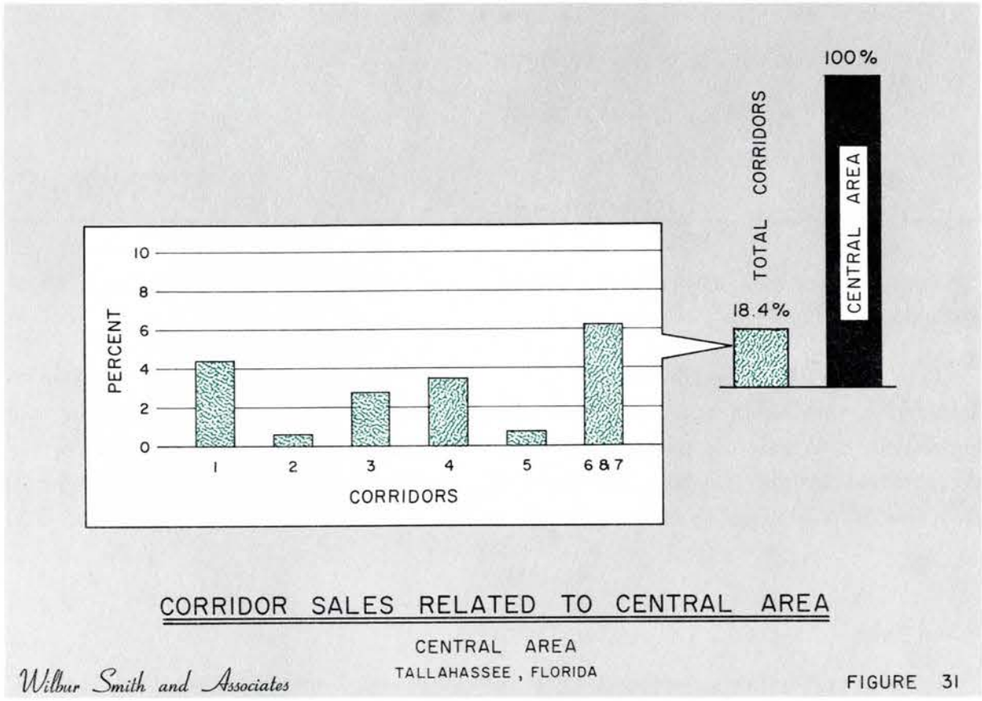
Deducting from the route corridors the business volumes assigned to the downtown area, the importance of the central city becomes greater than when the relationships are considered in terms of the tight central business district. When the portion of the downtown area which is included in corridor 3 is removed, practically all of the business volume originally assigned to corridor 3 is removed, because the central area includes the heavy concentration of businesses immediately north of the defined central business district. Actually, corridor 3 when related to the central business district shows a retail volume of $10,700,000; when related to the central area, the volume is reduced to only $1,300,000, or 2.8 per cent of the total central area retail volume.

Combined corridors 6 and 7 are also markedly affected by the central area analysis. While these corridors did 35 per cent of the central business district volume, they do only 6 per cent of the central area volume.

The relationship of the retail sales in the corridors to the central area are shown in Figure 31. The combined sales in the corridors are equal to 18 per cent of the central area sales. It is noted that the most important corridors when related to central area sales are the combined corridors 6 and 7, 4 and 1.

When the corridor sales are studied in relation to each other, it is again found that the size of the central area substantially affects the relative importance of the corridors. For example, corridor 3 is responsible for 44 per cent of the retail sales when it terminates at the defined central business district; when the same corridor is terminated at the limits of the defined central area, it contributes only 15 per cent of

[6]Survey zones included in the "Central Business District" are 11, 12, 13, 14, 15. The survey zones included in the "Downtown Area" are 11, 12, 13, 14, 15, 21, 22, 23, 24, 25, 33, 35, 43, 45, 49, 52, 53, 58, 59 and 60.



CORRIDOR SALES RELATED TO CENTRAL AREA

CENTRAL AREA
TALLAHASSEE, FLORIDA

Wilbur Smith and Associates FIGURE 31

the total corridor business. Conversely, corridor 1 increases in relative importance from about 14 per cent to 24 per cent of the total corridor sales when terminated at the central business district and the central area, respectively. Combined corridors 6 and 7 maintain almost the same relative importance when terminated at either the central area or at the central business district limits — about one-third of the total corridor business activity.

Comparisons of retail sales for corridors of the central business district as well as the central area are related in Table IX.

Retail sales tax information was supplied for each of the 83 zones used in the origin-destination survey in the Tallahassee area. It should be pointed out that the comparative volumes of retail sales in each of the highway study corridors were ar-

TABLE IX

COMPARISON OF RETAIL SALES

Corridors Related to Central Business District and Central Area

Corridor No.	*Corridors' Limits Related to Central Business District**			*Corridors' Limits Related to Central Area***		
	Retail Sales	*Per cent of C. B. D.*	*Per cent of Corridor*	*Retail Sales*	*Per cent of Central Area*	*Per cent of Corridor*
1	$ 3,330,000	14.9	13.7	$2,070,000	4.4	23.8
2	320,000	1.4	1.3	280,000	0.6	3.2
3	10,700,000	48.0	44.2	1,300,000	2.8	15.0
4	1,700,000	7.6	7.0	1,670,000	3.5	19.2
5	382,000	1.7	1.5	382,000	0.8	4.4
6-7	7,840,000	35.1	32.3	2,990,000	6.3	34.4
TOTAL	$24,272,000	108.7	100.0	$8,692,000	18.4	100.0

* Central Business District total $22,300,000
** Central Area total $47,200,000

rived at by an allocation of the origin and destination zones into the area covered by the highway corridors. Since this method results in approximate volumes, the data derived were used solely as an indication of trends and relative importance between study areas. A much more accurate method of analysis would be to individually sum the total of sales by each establishment actually located in the corridor, but this information is confidential and available only in the broad classifications described above.

There are at present two shopping centers under construction outside the central business district. One is located on the Perry Highway, at the junction of Magnolia Drive, and the other on the Thomasville Road near Glenview Drive. A third shopping center has been proposed for construction on the old Quincy Highway in the Lake Ella area.

While it was not possible to evaluate the impacts of the existing and proposed shopping centers on business activities in other parts of the survey area, it is generally recognized that these centers will attract customers in terms of their time proximities to the retail market. The community type center, which provides largely convenience goods, will primarily draw its trade from markets that are within 10 to 15 minutes travel distance. The larger centers, which offer general apparel and furnishings, such as variety stores and department stores, will attract customers from distances up to 25 minutes away. In a smaller city, such as Tallahassee, the distances that people travel to shop are usually much lower than those in the large cities. However, it can be noted from an analysis of the time distance relationships that most of the shopping centers are potentially within the travel time limits prescribed and, therefore, can be expected to become directly competitive with the central business district, existing outlying business districts, and with the strip business developments along principal highways.

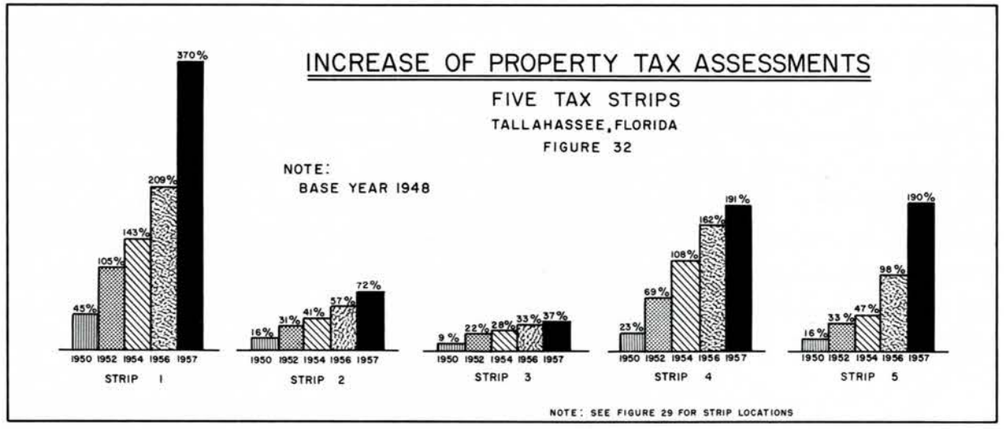
Land Values

It is historic that points of highest land values are usually at points of heaviest converging traffic.

Land values can be studied by (1) actual sales values, (2) assessments, or (3) leasing and rental records. The only available basis for this study was assessments.

Over-all Changes — As mentioned previously, land development is occurring principally northward. An increase in land value, based on property tax assessments, of 370 per cent since 1948 occurred in the northern area of the city, strip one. In strip 3, the central east-west area of Tallahassee, which includes the central business district, the increase has been only 37 per cent. As noted in Table X, an increase of 191 per cent was achieved in strip 4, located immediately south of the central business district. These relationships are shown in terms of the east-west strips in Figure 32.

It is apparent that the major activities have occurred on the lands that were largely open and undeveloped in 1948. In the sections encompassing largely the central and older areas of the city, there has been a very slight, although steady, increase in property tax assessments since 1948. In the open land to the north of the city where housing has been developing at a rapid rate, the increases in assessments related to 1948 have been very high. In Strip 5, which encompasses some of the more open area immediately to the south of the City, there has also been some development; however, the industrial barriers, the large areas of land that are unsuitable for housing, and other factors have caused development in this strip to be only a fraction in relation to



that which has occurred in strip 1. These percentage figures should be used only as an indication of relative land use between the southern and northern study zones and not as a measurement of difference in actual property values. The distance from the central business district to the northern city limits exceeds that of the south city limits to the central business district, but from the very high percentages, it is evident that even without an exact equality of land area between the two sections, development in the north far exceeds comparable development to the south of Tallahassee.

TABLE X

PERCENTAGE INCREASE OF PROPERTY TAX ASSESSMENTS BY BUSINESS STRIPS

Base Year 1948

Strip	*Assessment 1948*	*Increase Above 1948 Assessment 1950*	*1952*	*1954*	*1956*	*1957*
1	$ 1,792,210	$ 807,440	$1,873,920	$2,563,250	$3,753,450	$6,623,560
Per cent of base		45	105	143	209	370
2	9,010,220	1,451,760	2,800,300	3,691,920	5,097,560	6,477,380
Per cent of base		16	31	41	57	72
3	18,017,450	1,659,290	3,888,506	5,029,090	5,934,970	6,656,280
Per cent of base		09	22	28	33	37
4	4,591,480	1,052,940	3,162,430	4,950,520	7,453,100	8,740,090
Per cent of base		23	69	108	162	191
5	1,011,550	158,160	336,500	477,640	994,310	1,918,090
Per cent of base		16	33	47	98	190

To further compare land values in different sections of the city, property tax assessments were compiled for each of the highway corridors. Property values in Corridor 5, along Route 27 south, experienced the greatest increase in value — 119 per cent since 1948. Increases of 73 and 78 per cent, respectively, were recorded for the corridors along Route 90 east corridor 2 and Routes 363 and 63 (Corridors 6 and 7) combined. The remaining three business corridors each experienced approximately 35 per cent increases. These changes are graphically shown in Figure 33 and are also presented in Table XI.

It appears from the assessment changes in the different corridors that Corridor 1 lying along U. S. Route 90 to the west of the city is experiencing greater relative competition for automotive business and for other business, from some of the other corridors, although it must be realized that the percentage changes and assessments are relative and that the actual values are not reflected by the percentage comparisons presented in Figure 33. The assessments along Corridor 1 in 1948, the base year, were already substantially higher than the actual assessment values along many of the other corridors. The actual values have not been equalled along some of the other routes, but the proportional change in values along the other routes is significant in that it indicates a development of property in the other corridors, notably the corridor along U. S. Route 27 to the southeast and U. S. Route 90 to the east, that are appreciating

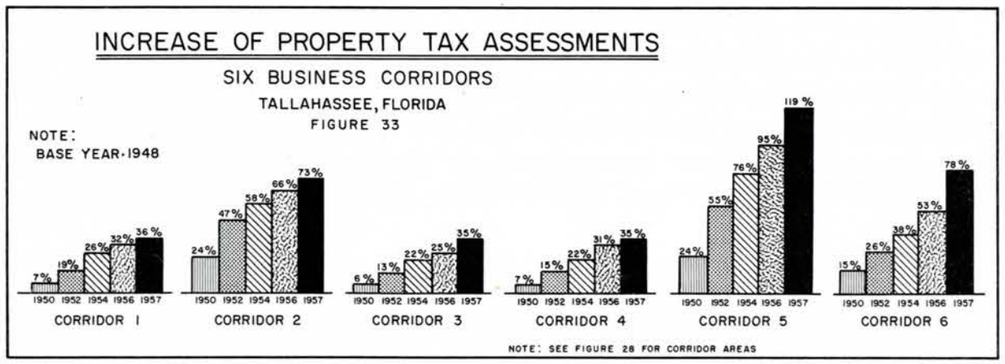


TABLE XI

PERCENTAGE INCREASE OF PROPERTY TAX ASSESSMENTS
BY BUSINESS CORRIDORS
Base Year 1948

	Assessment	*Increase Above 1948 Assessment*				
Corridors	*1948*	*1950*	*1952*	*1954*	*1956*	*1957*
1	$14,940,390	$1,140,790	$2,839,082	$3,904,990	$4,738,470	$5,364,250
Per cent of base		07	19	26	32	36
2	3,746,710	898,980	1,776,780	2,186,780	2,481,160	2,762,270
Per cent of base		24	47	58	66	73
3	17,353,300	1,111,780	2,170,180	3,742,230	4,272,510	6,022,820
Per cent of base		06	13	22	25	35
4	21,034,350	1,478,390	3,134,380	4,727,870	6,460,570	7,329,760
Per cent of base		07	15	22	31	35
5	3,700,630	884,690	2,048,840	2,810,810	3,531,940	4,388,310
Per cent of base		24	55	76	95	119
6 & 7	2,575,830	390,230	678,630	974,200	1,372,550	2,000,300
Per cent of base		15	26	38	53	78

the property values at a more rapid rate than the properties along some of the other business corridors.

Investigations of property values, as reflected by assessments, reveal that the corridors along the two southern highways have the lowest values of any of the study corridors. By comparison, the property in Corridors 3 and 4 was 511 per cent and 620 per cent greater in assessment value than Corridors 6 and 7 combined.

Strip 3, through the center of Tallahassee, has the greatest dollar value with close to $25 million in assessments.

Central Business District Changes — Detailed study was not made of the changes in land values in the central business district. It was apparent, however, from the examination of tax assessments that the increases in the central area of Tallahassee have maintained about the same proportional relationships to the increases elsewhere. Until recently, the central business district has been close enough to all places of residence and there has been little necessity for the establishment of outlying shopping facilities except for convenience goods such as drugs, food and everyday household necessities. There has not been enough population to make it economically attractive to provide a large selection of merchandise in any one suburban district which could develop competition with the business activities in the central business district. Just how long this situation can prevail is questionable and it has already been pointed out that shopping centers of sufficient size to begin to create competition to downtown businesses are being constructed.

Using the experiences in other cities as the basis, however, it seems reasonable to expect that the property values in the central business district will continue to increase and this should be the case whether or not the size of the central business district substantially changes. It will be many years before there is strong competition with the major retail businesses in the central business district. It is doubtful that many of the business activities will ever be threatened with serious competition from outlying centers. According to present plans, the heart of the city will long remain the focal point for civic and governmental activities. The shopping places that are developing and will develop in the residential areas, will depend primarily for success upon the rapid progress of growth which the area is enjoying.

It is much more difficult for the central area of the city to achieve rehabilitation and growth than it is to undertake new and sometimes bold projects in outlying and residential areas. The success of the outlying areas, and the greatest threat which they will pose to the central business district, will be created by the automobile. The great abundance of parking which can be provided in the outlying shopping centers and the ease of access which is afforded by most of the shopping center sites, will attract customers who often do not desire to spend the time nor exert the energy to get into and out of the central business district.

There is already some indication that plans, which are only a few years old, to move new businesses and new generators to outlying areas, are being scrapped or reversed. If attractive access to the central business district could be afforded and if the through traffic can be properly segregated from a local traffic, it appears that the many attractions of the central area can continue to bring growth and increasing values to the

central business district. The many reasons for achieving this as a desirable goal of public officials are obvious. The tax base of the community is closer related to the values and the tax income from the central or core area.

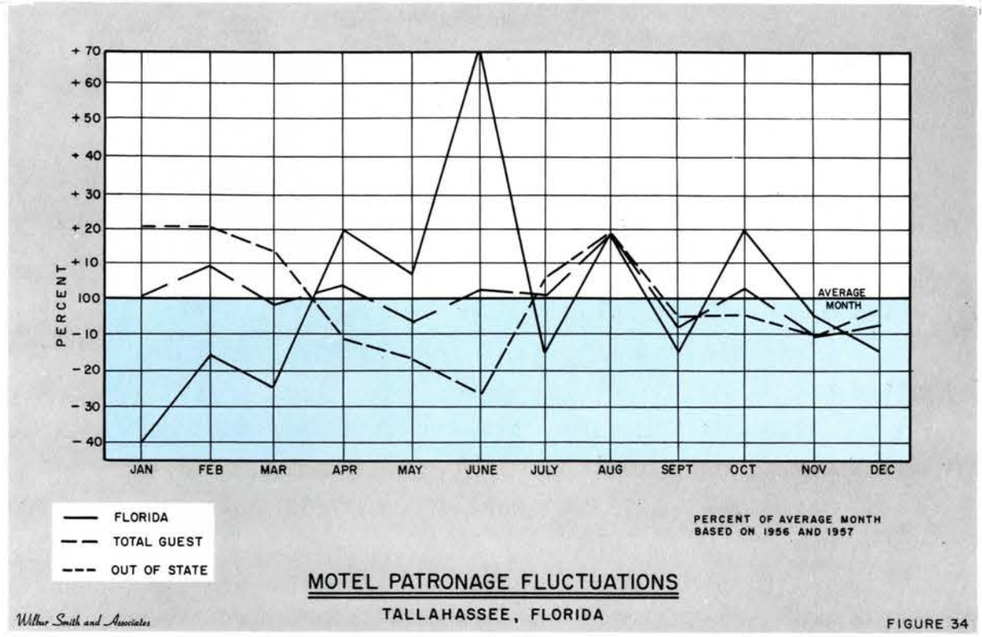
Economic Impacts of Traffic and Roadways on Existing Businesses

Businesses primarily dependent on automotive customers were studied in more detail than was possible under the general analyses of retail sales, land values, and distributions of people. In the route corridors of particular concern, the primary businesses directly related to automobile traffic were motels, restaurants, and gasoline service stations. The general studies conducted relative to these services have already been described.

Motels — To determine the economic effects of a new highway facility through Tallahassee, one of the principal barometers is the change which will be experienced by motels on the present major highways. The motels in the city are primarily located along U. S. 90 west (Tennessee Street) and on U. S. 27 south. There is one motel located on State Road 63 and three on U. S. 27 north. The motel situated on U. S. 90 east, outside the city limits, was not included in the survey.

There are no large cities in the immediate proximity of Tallahassee and since there are no other cities of even comparable size in north central Florida, it is logical that Tallahassee is a focal point for motorists in planning overnight stops. This gives it a key advantage for motel operations.

Upon leaving Tallahassee, there is a long stretch of road, both to the west and east which must be travelled before another group of motels is reached. The Tallahassee motels also have the advantage of being located near a large city with its recognized conveniences. These two conditions place the motel industry in the city in a relatively attractive position to gain patrons from the traffic flow passing their establishments. People are less apt to pass these motels because of the prospect of several hours of riding before reaching the next group of motels. The opportunity to fulfill all their travel needs in just one stop serves as a further inducement. Service stations and restaurants are also immediately available to the majority of the Tallahassee motels.

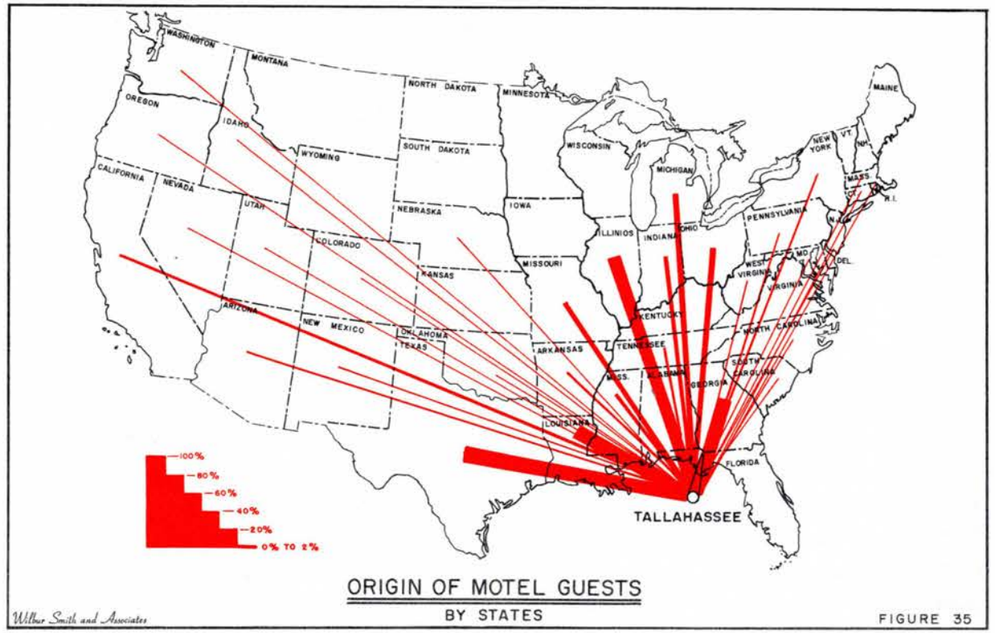


MOTEL PATRONAGE FLUCTUATIONS

Wilbur Smith and Associates TALLAHASSEE, FLORIDA FIGURE 34

In evaluating the information gathered from motels, it was important to determine the pattern of seasonal fluctuations. To achieve this, samples were taken from motel records for each month over a twelve month period. As shown by the graphs in Figure 34, the seasonal trend of motel guests remains fairly constant from month to month over the course of the year. The monthly pattern of guests varies within plus or minus 10 per cent of the average month throughout the year with the exception of August in which the monthly percentage approximates a 20 per cent increase above the average month. Since the month of June varies by only 3 to 4 per cent from the monthly average, the studies conducted at motels during this month are considered representative of motel patronage. Seasonal fluctuations of motel guests by trip origin are shown in Table XII.

Desire line charts were made, to show the origin of guests along with the relative volume each State and Florida county represented. The greatest volume of out-of-state guests had origins in the Midwest and Southwest, but there is representation from almost every State, as can be seen in Figure 35. This seems to indicate that many



ORIGIN OF MOTEL GUESTS
BY STATES

FIGURE 35

TABLE XII
SEASONAL FLUCTUATIONS
MOTEL GUESTS
Monthly Totals and Per Cent of Totals

	Jan.	*Feb.*	*March*	*April*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Total*
Florida													
Per cent of total	.05	.07	.06	.10	.09	.14	.07	.10	.07	.10	.08	.07	100%
Out-of-State													
Per cent of total	.10	.10	.09	.08	.07	.06	.09	.10	.08	.08	.07	.08	100%
Total Guests													
Per cent of total	.09	.09	.08	.09	.08	.09	.08	.10	.08	.08	.07	.07	100%

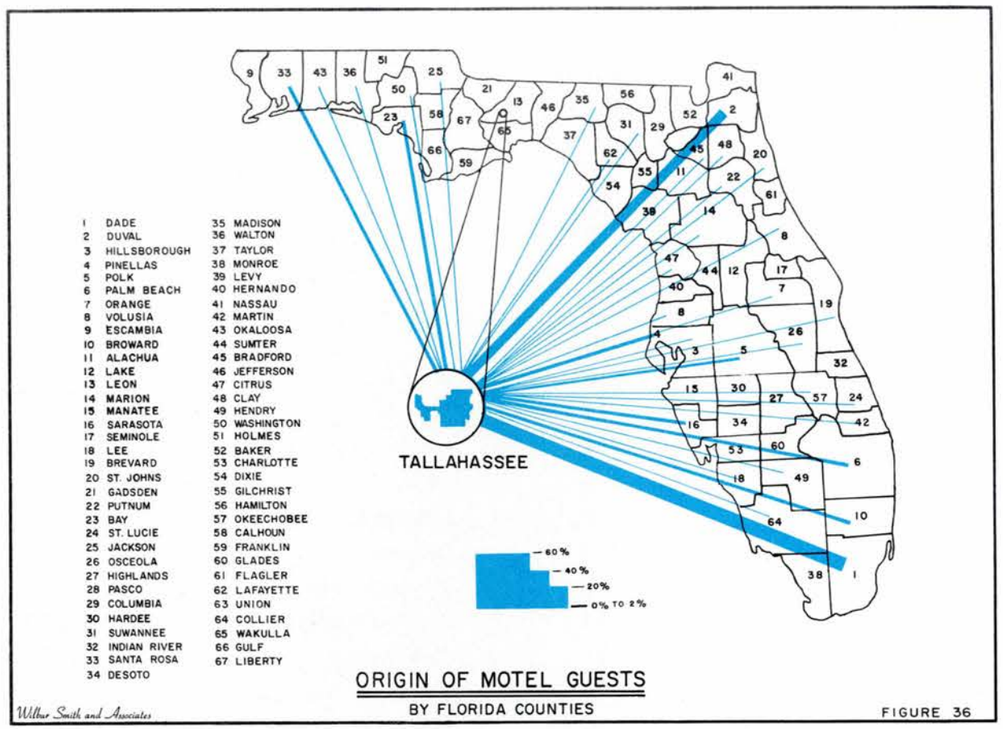
people are coming to Tallahassee specifically to stop in the city and will go out of their way to do so enroute to other cities. There are other highways which are more direct routes, for many of these travelers who are destined to the southern portion of Florida, if Tallahassee held no attractions for them. The origin of motel guests by other states is presented in Table XIII.

TABLE XIII

MOTEL GUESTS
ORIGIN BY STATES
One Week Sample, June 1957

States	*Guests*	*States*	*Guests*
Massachusetts	2	Missouri	57
Rhode Island	1	Nebraska	7
Connecticut	2	Nevada	1
Alabama	107	New Jersey	7
Arizona	9	New Mexico	1
Arkansas	17	New York	26
California	35	North Carolina	11
Colorado	5	Ohio	38
Delaware	6	Oklahoma	20
Georgia	138	Oregon	1
Idaho	2	Pennsylvania	15
Illinois	84	South Carolina	10
Indiana	37	Tennessee	57
Iowa	9	Texas	133
Kentucky	17	Utah	1
Louisiana	105	Virginia	15
Maryland	3	Washington	4
Michigan	45	West Virginia	4
Minnesota	8	Wisconsin	11
Mississippi	33		
		TOTAL SAMPLE	1,084

The origin of motel guests by Florida counties indicates that the greatest numbers are from Dade County, with most of the counties contributing some guests, see Figure 36 and Table XIV.



The high percentage of guests originating in Dade County, which is one of the most popular resort areas in Florida, substantiates the contention of Tallahassee being an interchange point for the midwest and southwest. It also serves as an indication of a heavy traffic movement between U. S. 27 South, the major route to southern Florida and Dade County from Tallahassee, and U. S. 90 West, the primary artery to the southwest and midwest.

Table XV shows a breakdown by zones of motel patronage divided into "out-of-state" and "Florida" guests and is based on a week's sample obtained from each motel in the zones studied. This broad classification was necessitated by the local practice of motel operators of not usually accepting guests from Leon County or immediately surrounding counties. This indicates that for the City of Tallahassee as a whole, 67.2 per cent of the guests were from out-of-state, with the remainder being Florida residents.

TABLE XIV

MOTEL GUESTS
ORIGIN BY FLORIDA COUNTIES
One Week Sample, June 1957

Counties	*Guests*	*Counties*	*Guests*
Dade	119	Okaloosa	3
Duval	77	St. John	2
Manatee	5	Alachua	5
Volusia	9	Lee	4
Pinellas	36	Lake	5
Broward	28	Marion	3
St. Lucie	5	Brevard	2
Polk	19	Madison	1
Osceola	3	Jackson	1
Orange	21	Putnam	1
Santa Rosa	21	Hendry	2
Palm Beach	19	Collier	2
Bay	15	Lafayette	1
Martin	8	Swannee	1
Sarasota	10	Walton	2
Hillsborough	59	Citrus	1
Leon	36	Clay	1
Washington	1		
Bradford	1	TOTAL SAMPLE	503
Okechobee	4		

The majority of the motels which primarily cater to east-west traffic are found in Corridor 1. Of a total of nine motels located in this corridor on U. S. 90 West, tabulations were made of the records of seven. This accounted for 187 of the total 244 units available nightly for motel guests. As a group, the motels were operating at approximately 73 per cent capacity for the week studied, June 1957. From origin-destination data, it was determined that out of a total traffic volume of about 3,600 vehicles which passed the city limits in Corridor 1 in the course of a twenty-four hour period, 31 per

TABLE XV

PROPORTIONAL ORIGIN OF MOTEL GUESTS

One Week Sample, June 1957

Location	*Florida*	*Out-of-State*	*Total*
Tallahassee			
Per cent of total	32.8	67.2	100.0%
Corridor 1			
Per cent of total	32.6	67.4	100.0%
Corridor 2			
Per cent of total	32.6	67.4	100.0%
Corridor 3			
Per cent of total	30.0	70.0	100.0%
Corridor 4			
Per cent of total	—	—	—
Corridor 5			
Per cent of total	38.2	61.8	100.0%
Corridor 6			
Per cent of total	37.5	62.5	100.0%
Corridor 7			
Per cent of total	—	—	—

cent were through motorists who did not stop in the Tallahassee area. Of the remaining traffic, the guests of the motels accounted for 15 per cent of the passing motorists who had origins in other Florida counties outside of Leon, Liberty, Jefferson, Gadsden and Wakulla, and 31 per cent of the out-of-state motorists entering Corridor 1 and desiring to stay overnight in Tallahassee. If these motels were to operate at peak capacity, or in other words fill all 187 units for the night, they would need only 27 per cent of the "other Florida county" traffic and slightly over a half of the "out-of-state" motorists which currently remain overnight in the city area. These percentage figures were derived after removing all through traffic presently passing through this corridor.

The motels in Corridor 1 also possess the important requisites a motel should have to attract highway travelers. A survey of motel patrons in Tallahassee recently revealed that the two most important reasons for stopping at a particular motel were that it is convenient to a restaurant and that it is attractive.[7]

[7]"A Study of the Factors Affecting the Selection of a Particular Lodging Accommodation in Tallahassee," Thomas W. Haverkorn, 1957 (unpublished Master's Study, Dept. of Restaurant and Hotel Management, Florida State University).

From an analysis of the patronage of motels along U. S. Route 90 west, Corridor 1, it is apparent that if all of the out-of-state traffic were diverted from this route by the construction of the new east-west road, that the motels could lose as much as 50 per cent of their business. A condition like this obviously can never develop. It is unlikely that the percentage of through traffic will materially change on a new east-west road in relation to the through traffic now recorded on Route 90 west. In other words, about the same percentage of motorists approaching the city on a new facility would make stops within the city as at the present time. This is believed to be especially true in regard to motels. It has been previously pointed out that the motels in and around Tallahassee have no strong competition from those situated in nearby cities. Also, there are many other reasons such as desires to stop in Tallahassee, business activities, and repetition which suggest that the losses to the motels along Route 90 to the west will be very slight, if at all. Inducements of greater travel and the attraction of motorists to Tallahassee which will result from the improved route should more than off-set the losses which might arise in the diversion of traffic from the present route to the new route.

Other motels in the Tallahassee area should not be affected to a great degree by a new east-west highway facility. The three large motels located along U. S. 27 north, principally draw their patronage from the north-south flow of traffic. This is also the case with the motel located south of Tallahassee in Corridor 6. The several motels along U. S. 27 south, which serves traffic from southern and central Florida, will not be affected appreciably because the existing traffic pattern on this highway will remain substantially the same, or might even increase after the new highway facility is constructed.

The Tallahassee survey on lodging accommodations also established that approximately 19 per cent of the present motel guests were on business trips. This means that 81 per cent of the total guests are tourists who are travelling in and around the city by desire and not by necessity. With the new East-West Interstate Route increasing the accessibility of the Tallahassee area, it can be assumed that the number of these people will increase, thereby producing an increase in potential motel customers.

Adding to this anticipated rise in foreign traffic in the Tallahassee area will be the continued migration of large numbers of people from states throughout the nation to Florida. Florida is at present rivaling the western states as one of the fastest growing states in the Union. With large areas of land in the state as yet untapped, there

appears no immediate end to this migratory movement. Large numbers of people are coming to Florida for retirement and are thereby inducing additional industry and commercial establishments to maintain and serve them. With its excellent weather conditions, it has been predicted that Florida will become one of the primary centers of the aircraft industry. This is just one example of the fast moving developments taking place in the state today. A review of real estate transactions in the state indicates a very active market with tremendous housing developments, both in the planning and construction stages.[8] These people moving to Florida, especially for retirement, are leaving friends and relatives behind. It seems likely that many trips will be generated by these people both to visit and receive visits. Correspondingly, with a steady increase in these trips, the traffic flow through Tallahassee will also increase due to its geographical location. Motels, necessarily, will also participate in this growth. These motorists will have the same desires as those which presently make up the motel guests, and with more motorists traveling the highways, an expansion in the motel facilities of Tallahassee may be required in the foreseeable future.

Service Stations — The patronage origin of service stations in Tallahassee very closely follows the classification of traffic in the adjacent highway traffic stream. Fifty-six per cent of the service station customers were from Leon County; this closely coincides with the 53 per cent of the total traffic on the routes studied which was generated in Leon County. Three per cent of the patrons had origins in the four surrounding counties, 19 per cent in other counties in Florida, and 22 per cent out-of-state. The percentage origins of service station customers are presented in Table XVI.

Along U. S. 90 west it was found that almost half, or 44 per cent, of the business of the 16 service stations was from Leon County. Out-of-state customers accounted for 27 per cent of the total business. Twenty-eight per cent of the service station patrons were from Florida counties other than those immediately adjacent to Leon County. The four adjacent counties contribute almost no patronage — slightly over one per cent of the total. It is obvious from the studies that the 19 per cent of out-of-state traffic through Corridor 1 contributes 27 per cent of the filling station patrons. Traffic from other parts of Florida than Leon County constitutes 29 per cent of the total corridor volume and contributes 29 per cent of the business volume. The four surrounding counties, however, do not contribute their proportionate share of the service station patronage since they make up 8 per cent of the traffic movement on the highway and only

[8]Hart's Realty Letter - August 1957.

TABLE XVI

PROPORTIONAL ORIGIN OF SERVICE STATION CUSTOMERS

June, 1957

Location	*Leon County*	*Out of State*	*Rest of State*	*Surrounding Counties*	*Total*
Tallahasssee					
Per cent	56.3	21.5	19.0	3.2	100.0%
Corridor 1					
Per cent	43.6	27.3	27.9	1.2	100.0%
Corridor 2					
Per cent	53.7	20.1	22.9	3.3	100.0%
Corridor 3					
Per cent	43.6	31.2	20.1	5.1	100.0%
Corridor 4					
Per cent	77.8	9.4	11.0	1.8	100.0%
Corridor 5					
Per cent	30.6	38.1	27.9	3.4	100.0%
Corridor 6					
Per cent	55.6	25.5	16.7	2.2	100.0%
Corridor 7					
Per cent	54.8	16.1	17.7	11.4	100.0%

contribute one per cent of the service station patrons. From the origin and destination studies, it is shown that only 31 per cent of the traffic in Corridor One is through traffic. Even if all of this could be diverted by a new route and the diversion consisted totally of traffic from out of Leon County, the total loss in business would be about one-fifth of the present volume. Actually, this loss would never occur because all of the through traffic would not be diverted by any route from the present Route 90 west, and the removal of the through traffic would induce a greater volume of local or Leon County traffic from which service station business would be developed. Any reduction would tend to be compensated by normal growth in the area, plus an increase in the amount of neighborhood business attracted to these stations by improved traffic operations.

In Corridor 2, along U. S. Route 90 east, 54 per cent of the total business of the service stations is from Leon County. Twenty per cent is the amount of out-of-state business, with 23 per cent accounted for by other Florida counties, and 3 per cent by

the four surrounding counties. The corresponding traffic pattern for each of the four categories was 55, 16, 20 and 9 per cent, respectively. Since the percentage of through traffic in this corridor is less than 20 per cent of the total traffic, the potential losses to service stations would be considerably less than that in Corridor 1. Since automotive services will not be provided on the new route and since any traffic diverted by a new route would likely be quickly restored by induced local traffic, it is not anticipated that any major losses would be incurred by the service stations.

The service stations in the northern and southern sections of the city, Corridors 3, 4, 6 and 7, primarily serve north-south traffic. In Corridor 4, an exceptionally large portion, 78 per cent, of the stations' customers originate in Leon County. Conversely in Corridor 5 the percentage of local customers was low, 31 per cent, with a very high proportion, 38 per cent, out-of-state customers recorded. In Corridor 5, however, with no radical changes in the traffic pattern occurring as a result of an east-west expressway, the patronage of service stations will remain substantially the same.

In an analysis of the service station patronage, it is interesting to note that on practically every route the surrounding counties contribute customers at a lower rate than their part of the total traffic stream. The notable exception is in Corridor 7 where the patronage of service stations is greater than the percentage of surrounding county traffic in the corridor. This condition would seem to substantiate the fact that most local persons have established gasoline trading habits patronizing specific dealers. The place of the gasoline purchase insofar as local traffic is concerned is not necessarily related to the locations of service stations on the main highways. It follows that the pattern of gasoline purchases by motorists from Leon County and adjacent counties will not be substantially changed by any single new major highway. Practically all of the changes will be in traffic made up of long distance travelers. Impulse purchasing of gasoline is significant for through and foreign traffic, but not for local traffic.

The area receiving the greatest affect from the development of a new route would be along U. S. 90. Those service stations which have primarily served out-of-state and transient vehicles will have to encourage neighborhood patronage to replace business lost as a result of traffic diversions to a new route. All of the through traffic will not be diverted. Some of the motorists approaching Tallahassee may find it necessary to refuel, make repairs, or use rest rooms, and since they will not find facilities for this on the expressway, they will have to leave the highway to fulfill their needs. It is this group of travelers whose magnitude is difficult to predict, but who will likely make up the losses which might theoretically occur as shown from the analysis of present trading practices. Again, it should be remembered that greater volumes of vehicles will be approaching the city when the Interstate Route is completed beyond the immediate limits of Tallahassee either to the east or to the west.

The classification of traffic according to that from Leon County, out-of-state, rest of the state, and surrounding counties was based on observations near the city limits. Approaching the city, the percentage of local traffic increases as the urban streets along the highway contribute vehicles to the traffic flow. As a result, the service stations located nearer the central business district would be less affected than corresponding stations located near the city limits. The higher volume of local cars would give these stations a higher potential of business from Leon County and would, therefore, make the diversion effect on them very slight.

It is natural to expect an initial decline in business when a new route is constructed. The stations located in Corridors 1 and 2 will experience a decline but with the degree depending upon the proximity of the new route to the city; however, this decline should be of a temporary nature.

Restaurants — Several restaurants, as shown in Figure 28, located on the major highways of Tallahassee were included in this survey. The origin of restaurant customers patronizing these highway establishments amounted to 36 per cent from Leon County, 4 per cent from the surrounding counties, 28 per cent from other Florida counties, and about 32 per cent out-of-state. In Table XVII, the origin of restaurant customers is shown.

Along Route 90 west, Corridor 1, out-of-state vehicles constitute almost 39 per cent of the vehicles stopping at the restaurants. In this same corridor, out-of-state vehicles account for only about 20 per cent of the traffic volume. Showing that the out-of-state motorists stop at the restaurants in a much higher ratio than do local motorists. The same situation is true to a somewhat lesser degree with regard to restaurant patrons from other Florida counties. Leon County vehicles account for almost one-fourth of the cars stopping at the restaurants in Corridor 1, yet they constitute more than 50 per cent of the corridor volume.

TABLE XVII

PROPORTIONAL ORIGIN OF RESTAURANT CUSTOMERS

June, 1957

Location	*Leon County*	*Out of State*	*Rest of State*	*Surrounding Counties*	*Total*
Tallahassee Per cent	36.3	32.3	27.9	3.5	100.0%
Corridor 1 Per cent	24.9	38.5	34.2	2.4	100.0%
Corridor 2 Per cent	24.9	38.5	34.2	2.4	100.0%
Corridor 3 Per cent	46.3	30.5	17.9	5.3	100.0%
Corridor 4 Per cent	61.3	20.6	12.9	5.2	100.0%
Corridor 5 Per cent	28.6	34.7	33.7	3.0	100.0%
Corridor 6 Per cent	66.1	14.3	12.5	7.1	100.0%
Corridor 7 Per cent	60.8	9.8	23.5	5.9	100.0%

In Corridors 1, 2, and 5, which represent movements on the principal through traffic routes, the out-of-state and Florida cars from outside the immediate area contribute in a higher ratio to the restaurant patronage as measured by the numbers of vehicles stopping at the restaurants than the contribution of these classes of traffic to the total flows. In Corridors 6, and 7 from the south, the restaurant patronage follows a pattern very similar to the distribution of different classes of vehicles in the traffic stream.

The traffic along Thomasville Road, Corridor 4, contributes heavily insofar as local cars are concerned to the restaurant patronage. Almost two-thirds of the vehicles stopping at restaurants along this route are from Leon County.

There is one restaurant located in Corridor 2 which primarily serves local customers which was not included in this survey.

It seems likely from the analyses, that the restaurants which are dependent to a great extent upon automobile customers will be more damaged by the development of a new east-west route than service stations and motels. With people seeking places to eat, and with food unavailable on a control access expressway built to interstate standards and with areas made more accessible by the removal of disinterested through traffic, it is likely that the restaurants will soon regain initial losses just as expected with regard to the service stations. It should also be remembered that the restaurants along many of the routes, particularly those serving north-south traffic, will not be appreciably disturbed by the construction of any of the proposed east-west routes.

To maintain their present level of business, the restaurants and service stations will continue to derive customers from the motels in their immediate vicinity. Since one of the prime requisites in the selection of a motel is convenience to a restaurant, these two types of establishments will continue to complement each other and also serve as a source of customers to the service stations in this vicinity.

As in the case of the service stations, those restaurants near or outside the city limits will be most seriously affected. Those within the city limits will have a higher volume of local traffic passing their establishments, which traffic currently representing potential customers, might be induced to stop.

Central Business District — Even the planners are uncertain about the future of the central business district. There is no accurate method of forecasting central business district space requirements. Detailed analyses of businesses in the central business district were not possible because, as previously pointed out, the sales tax data are confidential with regard to individual businesses. An economic survey of each type of business in the central area would have greatly exceeded the limits of this study. There are, however, some interesting and significant relationships that can be shown and some very significant findings in the studies which permit general conclusions as to the effect of the new east-west route on the central business district, or the central area of Tallahassee.

Referring to the information presented on retail sales, it is observed that the central area of the City contributes 64 per cent of the total retail business reported for the city. This is still a relatively tight part of the total downtown district. It is likely that the business activities in and near the heart of the city more nearly contributes three-fourths of the total sales.

None of the proposed east-west alinements would substantially affect the business activities in the central area of Tallahassee and it is, therefore, apparent that the large percentage of total retail activities of the city would not be appreciably affected.

Any alinement that will decrease the travel time between the residential markets and the downtown part of the city, would increase the competitive advantages of the central city with existing and proposed outlying retail establishments.

From the 1957 origin-destination data, it is found that 23 per cent of the non-through trips entering the cordon area are destined to the central business district. The central business district contributes one-third of the retail business of the city. It is apparent, therefore, that the ratio of sales in the central business district to the total sales of the city is greater than the ratio of external trips to the central business district related to all external trips to the city.

Even though some of the central business district sales are obviously made to persons who walk into the area and to persons who enter by transit, it appears likely that the vehicles entering the cordon limits, or the city limits, do not contribute as high proportionately to the sales as vehicles with internal origins.

General Traffic Business Relationships — It is clearly shown by the above analyses, that there are direct relationships between the sources of customers and the characteristics of the traffic stream. The studies of motels, restaurants and service stations reveal consistent relationships between customer and traffic classes. There is undoubtedly an inter-dependence; businesses attract customers and the customers make the traffic stream; also, the traffic stream regardless of how formulated, constitutes a strong business potential. The extent to which the two forces are related was not determined but their mere existence would indicate that a re-location of a major route, while having some effect on existing businesses, will not detract from business levels to the same extent to which traffic is diverted.

There was not a sufficient coverage of the total market to produce numerical relationships between traffic and customer potentials for individual business types. There was shown, however, that one business contributes much to another, such as the normal requisite of motel customers that attractive eating facilities be available. Most automobile businesses compliment each other.

Studies were made of the effect which the proposed South Central Route might have on businesses located on Route 90 west if vehicles are diverted to the route solely in accord with origins and destinations, and time-saving factors. Businesses inside the City Limits on Route 90 west which now procure 82 per cent of their volume from Leon County customers would have to procure 91 per cent from the same source of customers under the traffic stream that would result. For the businesses on the same route, but west of the city limits, a maximum diversion to the new interstate segment would mean that the present businesses would have to obtain about 75 per cent of the volume from Leon County customers, whereas now they only get 55 per cent from the same customers. The gains that would be necessary in Leon County customers, to maintain the same total volume of business, would be required to offset the losses from traffic having origins and destinations in other Florida counties or in other states. As has been previously pointed out, it is not anticipated that such marked diversions will develop because there will be no services on the new route and many of the motorists will have other reasons for entering the city on the existing routes.

Chapter VI
REVIEW OF PREVIOUS STUDIES

There have been several "before" and "after" studies made of the economic impacts of new highway facilities which either by-pass or pass through a particular city. Since this is in reality a "before" and "after" study in Tallahassee, before the highway is even located, it will provide some very useful and interesting background to review a few of these prior surveys.

Freeway By-Pass of City of Fairfield, California[9]

The results of a freeway by-pass of the City of Fairfield, California, although not exactly applicable to Tallahassee, point up some very interesting information. Since the construction of the by-pass, the retail outlets on the by-passed highways have made adjustments and are now making greater business returns from the increased patronage of local customers without congestion from through traffic. The removal of through traffic has provided an uncongested and easily accessible central business district. This, in turn, has deterred the building of new shopping centers elsewhere in the city to compete with the central business district. The construction of new motels has proven that proper approaches from the by-pass are as important as the volume of traffic.

"Four Years After", — California Routes[10]

In a periodical made available through the California Highway Department, the affects of a highway through the center of town were reported. The relocations of the highway actually caused an increase in the frontage value of property along the old route at a higher rate than property elsewhere in the community. New construction is booming on the superseded highway and retail business of every type indicated a substantial increase upon the removal of through traffic. The improvement, running through the center of town, did not split the city but rather increased the business in the central business district and encouraged new investments in the community.

Industrial Growth Adjacent to Eastshore Freeway, California[11]

From the standpoint of industrial growth as a by-product of a new freeway, the results of the growth along the Eastshore Freeway in California are indications of the general results. The industrial growth along the freeway has far exceeded growth throughout the remainder of the county. The entire community, as well as property owners near the freeway, has benefited by the development of land adjacent to the improvement for residential as well as industrial construction. The land close to the freeway has enjoyed a preference over land for purposes of industrial expansion because of the increase in truck transportation and the trend in dispersion of industries to gain greater market areas.

Industry and Frontage Roads, Santa Ana Freeway, California[12]

Along the Santa Ana Freeway in California, the comments of the property owners (industrial) located on frontage roads to the property included the following:

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[9]"Four Years After", California Highways and Public Works Magazine, 1953.

[10]"Four Years After", John Kelly, California Highways and Public Works Magazine, 1953.

[11]"Industrial Growth Adjacent to Eastshore Freeway". Industry and Freeways, 1954. Reprinted by the California Highways and Public Works Magazine.

[12]"Industry and Frontage Roads, Santa Ana Freeway, Calif.," 1954. California Highways and Public Works Magazine.

The freeway is a property appreciation factor to adjoining property.

It is an asset from the advertising point of view.

It is a convenience factor to employees and business associates and accounts for additional business brought solely by users of the freeway.

The study also proves that the specific proximity of the firm on the frontage road in relation to freeway exits is not as important as many people believe. It is not necessary for the industry to be directly opposite the freeway exit to derive these benefits.

By-Pass Effects U. S. Highway 50, Folsom and Imperial, California[13]

It was found in Folsom, California, that a recently constructed by-pass produced only a slight increase in retail business due mainly to the fact that traffic congestion in the central business district was not a problem. This increase in retail business was accomplished despite the fact that almost all through traffic was totally eliminated. It points up the fact that the apparent importance of highway patronage was diminished as compared to local customers and justifies the premise that where existing through-traffic volume justifies a business district by-pass, retail businesses generally are financially benefitted.

Economic Effects of Through Highways By-Passing Certain Oregon Communities[14]

All of the impact studies in California almost universally indicate favorable economic results following the opening of a by-pass. Similar studies in Oregon, regarding the economic effects of a by-pass show the opposite picture. This may be due to two important factors which must be considered. The highway traffic in California is generally heavier than in Oregon, and California's current rate of growth is much greater than that of Oregon. Any losses due to traffic diversion would tend to be offset by new population growth more rapidly in California than in Oregon. A very interesting thing brought to light in the Oregon studies was that business firms serving highway traffic located in communities which cannot be seen from the by-pass have been adversely affected to a greater extent than those that are visible from the highway.

[13]"By-Pass Effects U. S. Highway 50, Folsom and Imperial, California", 1951. California Highways and Public Works Magazine.

[14]"Economic Effects of Through Highways By-Passing Certain Oregon Communities", Bureau of Business Research, University of Oregon, July, 1956.

A recent study completed in July, 1956, involved the effect of a by-pass on the city of Salem, Oregon which, like Tallahassee, is a capital city. The population of Salem closely parallels that of Tallahassee with 45,812 people in 1956. It was found that the proportion of the total business transacted in Salem which arose from through traffic was small even before the by-pass was opened. This is probably due principally to the fact that so many people want to come to Salem on personal or state business, or they wish to see Oregon's capital. Therefore, it is not strange that there is no evidence of change in the general level of business activity or that most of the community leaders are not particularly aware of the relatively few hardship cases. The mayor and the manager of the Chamber of Commerce are favorably impressed with the results of the by-pass and few complaints are now received from business firms affected by the new facility, although quite a number were received in the beginning, especially from motel operators. A general complaint among the motel owners has been that tourists constantly advise them that they pass the junction of the access roads and must turn around to reach the motel. The operators feel that many tourists will not turn around and that business is lost. The two principal hotels in Salem were unaffected as were most restaurants, due to the fact that the proportion of business they obtain from highway travelers is small. There was found to be little change in the real estate price trends as a result of the by-pass.

The Thruway as an Industrial Location Factor[15]

The importance of the thruway as a factor in industrial location, which is particularly of interest to Tallahassee, is very well pointed up in an article by William M. Barker. The article mentions five reasons why thruways are of paramount importance in the location of new industry.

(1) The movement of the people to the suburbs requires good highways for plant employees. Some workers travel up to 40 miles.

(2) Truck transportation's availability to the plant is an important consideration, especially in less than car load shipments.

[15]"The Thruways as an Industrial Location Factor", William M. Barker.

(3) Advertising benefits accrue as a result of proximity to the highway. The name of the firm on the building as well as the fact that the plant is within sight range of the motorist, engender much of this benefit.

(4) Big plant investments should be in places that are easily reached.

(5) The thruways help make economical a system of satellite plants.

A Study of Land Values and Land Use Along the Gulf Freeway[16]

In a study of land values and land use along the Gulf Freeway the following conclusions were derived:

(1) Properties adjacent or very close to the freeway have increased in market value to a greater extent than in any other section of the city.

(2) Property in the secondary zone of influence has increased in value greater than the property outside this zone and the primary zone.

Even though the market value was lower for the five year period prior to the construction of the freeway, the combination of two five year periods produced a market value far greater than in any of the "non-influenced areas."

As for land use, changes are developing slowly except where large tracts of vacant land were located near the freeway. It was found that very few tracts of land which were vacant when work commenced on the facility remain undeveloped. Many vacant tracts the same distance from the city as those near the freeway are still vacant. The development of the tracts along the highway has been in three classes:

(1) Businesses and industries in the primary zone of influence adjacent to the freeway.

(2) Residential developments have taken over the major portion of the tracts in the secondary zone.

(3) Warehouses whose close proximity to the highway will decrease distribution costs and extend the market zone.

[16]"A Study of Land Values and Land Use Along the Gulf Freeway", Houston, Texas, 1951.

Patronage of Motels and Hotels in Tallahassee, Florida[17]

A study was recently conducted by a graduate student at Florida State University as to the factors affecting the selection of lodging accommodations in Tallahassee. It concluded that business was the primary travel motive for 92.2 per cent of the guests at the hotels with a corresponding percentage of 18.6 for motel patrons. The automobile was the only mode of transportation for guests to the motels, while 72.5 per cent of the hotel guests arrived by car with anotheer 19.8 per cent having traveled to Tallahassee by plane. Approximately 30 per cent of the motel guests indicated that they had stayed at the same motel before, while the repeat business of the hotels amounted to 76 per cent. Few motel guests made advance reservations and these amounted to 9 per cent of those stopping at a motel for the first time. The corresponding figure for hotels was 32 per cent making reservations. A very interesting portion of the study was a listing of the factors which influence the first visit of motel guests. In order of importance these factors were: proximity to a restaurant, attractiveness of the motor court, convenience to the route of departure, roadside signs and referral groups.

Applications to Tallahassee

On the basis of these studies, a highway by-pass of Tallahassee within sight of the city should produce no adverse effect on the general economy of the city. Land use and land values would be expected to increase along the new facility with a corresponding rise in tax revenues to the city. Some businesses along the previous east-west routes would likely suffer initially, but local patronage and normal growth should compensate for the small amount of business lost. Adequate signs and convenient connector routes from the highway to the city would minimize losses to the tourist business of Tallahassee. Industry would likely be attracted to the city by the new tracts of land opened up adjacent to the highway and the advantages of easy accessability to the facility and the surrounding areas, along with the advertising benefits to be accrued, will further act as inducements. This invitation to new industry and expansion of existing industries will help to improve the present inbalance of the economy of Tallahassee.

[17]"A Study Of The Factors Affecting The Selection Of A Particular Lodging Accommodation in Tallahassee", Thomas W. Haverkorn, 1957 (unpublished Master's Study, Dept. of Restaurant and Hotel Management, Forida State University).

A highway running through the city would divert through traffic from the central business district. It would alleviate congestion during peak traffic hours when State employees arrive and depart from their places of employment. Present investments in the central business district would tend to be strengthened by easy ingress and egress and parking. Industry would be encouraged to come to the city for the reasons previously mentioned and these same benefits would immediately accrue to existing industrial and commercial establishments. Land use and land values would increase adjacent to the highway where it enters and leaves the city. In existing low-value areas, it would increase the city tax revenue as new land areas are stimulated. With a facility through the center of the city, and with adequate signing of exits and entrances, the loss, if any, to the present tourist business will be negligible. Overall, the gains to the business community of Tallahassee should be appreciable.

In summary, a new Interstate Route through the Tallahassee area, with proper signing and convenient feeder routes, will tend to increase the desire on the part of tourists to visit the Capital City of Florida. New travel will be attracted with a corresponding increase in the number of stopovers by motorists which, in turn, will benefit the business community of the city. New land uses will develop along with an increase in present land values. The highway will serve as a stimulant to the business economy and also as an attraction for new industrial and commercial establishments.

But because each city included in this review presents a different situation, the survey of Tallahassee was conducted with these findings used only as background material and not as a guide.

Part III
ROUTE STUDIES AND RECOMMENDATIONS

Chapter VII - Comparison of Routes

Chapter VIII - Route Locations and Geometric Design Considerations

Chapter IX - Recommended Route

Chapter X - Cost and Program of Recommended Route

Chapter XI - Other Traffic Improvements Recommended

Chapter XII - Functional Plans

Chapter VII
COMPARISON OF ROUTES

It was first necessary to determine the most physically feasible route for the three general route locations covered by the study agreement. Next, the data on projected travel, planning and economics were related to each of the locations to determine their relative merits. The comparisons which follow take these factors into account and also include route development costs and cost-benefit analyses.

Description of Alternate Routes

Extensive field reconnaissance was undertaken in the three general areas specified in the agreement. Numerous possible lines were explored and given careful consideration. Visual inspection combined with intensive study of aerial photographs narrowed the possible lines to one for each of the three areas studied. The choice of location in each area was made on the basis of a route that did the least property damage, best fitted the terrain, conformed to the traffic needs, and disrupted the normal community facilities the least, while at the same time meeting or exceeding the minimum design requirements.

The three routes for which detailed investigations have been made and which will be compared are described generally as the Northern Route, the North Central Route, and the South Central Route. These are shown on Figure 37 and the western terminals of each are common to a north-south line located a half mile west of the intersection of Route U. S. 90 and State Route 20, while a north-south line one-half mile east of Magnolia Drive delineates the eastern terminal of each of the three alternates. A more specific description of each route follows:

North Route — This route would begin on the western terminal line at a point about a mile north of Route U. S. 90 and proceed due east approximately one-half mile, swing slightly northeast to pass to the north of residential developments, thence crossing Old Bainbridge Road and Monroe Street (U. S. Route 27), at a point slightly south of Pullen Road, thence, eastward along the section line, crossing Meridian Road and Thomasville Road slightly north of Mimosa Drive in the Gardenia Gardens area; thence to the eastern terminal line at the approximate intersection of the latter with Centerville Road. Interchange facilities would be provided at Mission Road; Old Bainbridge Road; Monroe Street (U. S. 27); Meridian Road; and Thomasville Road (U. S. Route 319). Generally speaking, this route would lie immediately north of the northern corporate line of the City of Tallahassee.

North Central Route — This route would begin on the west on the common north-south terminal line at a point approximately one-half mile north of U. S. Route 90; upon crossing the Seaboard Air Line Railroad at Mission Road, the line would swing southeasterly to intercept and reclaim the abandoned Seaboard Railroad right-of-way as far as the crossing of the latter and Route U. S. 90; thence, it will go easterly to enter the City of Tallahassee at the intersection of the corporate line and Call Street, thence swinging northeasterly to cross Brevard Street and pass around the Southernaire Motel property on the north side to enter the line of blocks between Brevard and Georgia Streets at the intersection of Woodward Street. The routing would then proceed easterly, paralleling Brevard Street to cross Magnolia and U. S. Route 90 near the east corporate limits. Investigation of this line has been terminated at a point south of U. S. Route 90 approximately one-fourth mile east of the east corporate limits of Tallahassee. Interchange facilities would be provided at Mission Road; the new crossing of U. S. Route 90 a short distance west of the west corporate limits; Brevard Street somewhat east of the west corporate limits; Woodward Street; Old Bainbridge Road; Adams-Monroe-Calhoun Streets; Hillcrest Street; and at the U. S. Route 90-Magnolia Drive crossing.

South Central Route — This route begins at the western north-south terminal line intersection with the new alignment about a quarter mile south of U. S. Route 90 and

ROUTES STUDIED

TALLAHASSEE , FLORIDA
1957

Wilbur Smith and Associates

FIGURE 37

proceeds southeasterly across the northern and eastern corner of the Dale Mabry Municipal Airport, thence continues southeasterly across Jackson Bluff Road swinging easterly to parallel the latter as far as Lake Bradford Road, thence continuing on the same course to the intersection of Railroad Avenue and Canal Street; at this point, it would swing northeasterly to cross the Seaboard Air Line Railroad at a point in line with Boulevard Street, turn easterly to parallel the railroad, at a distance of one block north, as far as Gadsden Street. Proceeding northeasterly, the line crosses the Seaboard Air Line Railroad and Lafayette Street in the vicinity of Governor's Drive and continues across the new Apalachee Trail in the vicinity of Goodbody Lane; thence turns back to the southeast to cross Magnolia Drive at a point some 800 feet north of the intersection of Apalachee Trail and Magnolia Drive. At this point, the route can continue easterly on an alignment generally parallel to the Apalachee Trail and with suitable-tie-ins to U. S. Route 27, or it could extend beyond Magnolia Drive in a northeasterly direction depending upon the location of the Interstate Route to the east. Interchanges should be located at the U. S. Route 90 crossing on the west end; at the State Route 20 crossing immediately west of the Airport; at a point to best serve the Industrial Park to be developed in the existing Airport area; at the Lake Bradford Road crossing; Railroad Avenue; a full diamond interchange at the Adams Street-Monroe Street crossing; and an off ramp from the expressway will be provided for the westbound direction of travel at the Apalachee Trail crossing. Interchange facilities are to be provided for the Magnolia Drive crossing and two special ramps to directionally connect the west and eastbound Apalachee Trail roadways with the Interstate Route east of Magnolia Drive are recommended.

Route Comparison

North Route — The advantages and disadvantages of the Northern Route can be summarized as follows:

(1) The Northern Route would act primarily on an area of the city which is currently experiencing the greatest growth in Tallahassee. Based on tax assessments, the strip which this route will traverse is increasing in value at a much more rapid rate than any other section of the Tallahassee area. Obviously, this location does not fit the existing high-class residential zoning.

(2) The route would pass through a steadily expanding residential section which contains a majority of the middle and upper value housing units.

(3) Since the route would be located in the northern extremity of the city, it would provide little service to the central business district. In fact, a route located at this point would only result in a considerable increase of traffic on north-south local streets and the physical improvement of these streets would, of necessity, be required. The improvement of these local streets would be a major item of added costs.

(4) The city would not be visible to highway travelers approaching from the east and the west; this would cause it to have the greatest negative effect on automotive businesses along existing streets and in the central business district.

(5) The businesses in Corridors 1 and 2 which provide maximum services for motorists would be most seriously affected by a northern route.

(6) The commercial and industrial establishments located in the southern portion of the city would not be served advantageously so that maximum truck traffic would remain on city streets. Problems of congestion at peak hours caused primarily by Government employees would not be appreciably alleviated.

(7) The route would provide good service for through traffic now going east-west through Tallahassee.

(8) The heaviest flow of through traffic is between Routes 27 south and 90 west. This heavy movement would not be served by the northern route and the heavy traffic volumes would continue to pass through the center of the city.

(9) Almost no local traffice service would be provided by the northern route. It is the purpose of the Interstate System of Highways to serve both long distance and local traffic.

(10) North-south traffic would not be appreciably affected by the route and no relief would be afforded north-south streets through the central section of the city.

(11) The businesses in Corridors 3 and 4 would be somewhat benefitted because of the increased movements the route would generate between the intersections of U. S. Route 27 and U. S. 319 north and the central section of the city.

(12) Other major generators such as the Capitol Center, the two State Universities and the present Airport, at which an Industrial Park is planned, would not be served.

(13) The effects of the highway on businesses in Corridors 6 and 7 located in the southern section of the city would be very slight. The greatest percentage of their business would be derived from north-south traffic, much of which is local traffic.

(14) Businesses in Corridor 5 would not be affected because the traffic on U. S. Route 27 south would remain about the same.

It is very likely that with a northern route, the interchange which would connect the new route with the present U. S. Route 90 west would be located some distance from the western limits of Tallahassee. With this prospect, it would be safe to assume that a good proportion of the present transient traffic, which desire to stop in the City, will continue on the new highway, and then approach the city proper from a possible interchange located at the junction of the new facility and U. S. Route 27 north. This traffic amounts to about 10 per cent of the present total volume on U. S. Route 90 west, or approximately 350 vehicles. With the motels along U. S. Route 90 west drawing a good proportion of their guests from this group, their business would be severely curtailed by any appreciable diversion of this type. The service stations and restaurants in Corridor One could also be expected to experience a decrease in revenue, although approximately one half of their present business is local. Thus, the adverse effect of the North Route on the area, which contains the majority of the motels in Tallahassee, as well as a good proportion of the highway restaurants and service stations, is the maximum which could accrue to these retail businesses as a result of developing a new east-west highway facility.

North Central Route — The route that generally parallels Brevard Street and which is generally referred to as the "North Central Route" has advantages and disadvantages which include:

(1) Easy accessibility will be afforded to the central business district.

(2) The route passes through the city, and thereby brings all motorists who use it, close to the central business district and to most of the business corridors which exist along the present routes. This condition would encourage motorists to stop and to patronize Tallahassee businesses.

(3) The route will produce the minimum negative effects on business in Corridors 1 and 2.

(4) Corridors 3, 4, 5, 6, and 7 would not be appreciably affected and the businesses therein would not be expected to be either aided or damaged.

(5) Florida State University would be well served but Florida A&M University would not be served.

(6) Traffic interchanging between the route and other routes to the south and southwest would be required to traverse the central area of the city on local streets. More traffic would be added to the most heavily traveled streets in the central business district.

(7) The commercial and industrial districts of the city would not be directly served.

(8) The road would pass through some of the highest assessed property in the city and will result in increasing tax losses to the city. A very large number of residences would be disturbed.

(9) No traffic relief would be afforded the central business district, and private passenger cars as well as heavy trucks would continue to use the local streets through this district and the Capitol area.

(10) Because of the proximity of the route to U. S. Route 90, the present route would in effect act as a service road to the new facility giving businesses along them convenient access so that they would be expected to maintain their present level of patronage.

(11) The route would provide the maximum service for local traffic and at the same time serve the through traffic now interchanging between U. S. Route 90 east and west.

(12) The route does not fit good city planning concepts in the eastern section.

South Central Route — The route which just skirts the southern limits of the central area of the city was found to have maximum advantages. These, together with the disadvantages, are:

(1) One of the aims of good city planning is to utilize expressway and other types of artificial barriers to separate different classes of land uses; expressways frequently provide a useful buffer zone over much of their length between business or commercial areas and residential areas.

(2) The route will provide maximum traffic services for all classes of traffic.

(3) The major movement of through traffic in Tallahassee is between U. S. Routes 90 west and U. S. Route 27 south. The fast and disinterested traffic would be routed around the central business district.

(4) Both local and through traffic would be served since the route fits the Capitol Center Plan and has ideal interchange with the Perry Highway.

(5) The route will require the minimum development of feeder and service roads.

(6) The Capitol area and the central business district will be within sight of highway travelers, thus producing maximum attractions for foreign motorists and also maximum aesthetic features.

(7) Central service will be provided between the Universities including the stadia — serving large, although infrequent crowds created by athletic events.

(8) Existing commercial and industrial areas will be excellently served.

(9) The commercial area proposed at a new Industrial Park on the Airport site will also be extremely well served.

(10) Much of the peak-hour congestion caused largely by employees at State Office buildings will be alleviated.

(11) The route will pass through several areas of slum and low-property values, thereby affecting some basic objectives of urban redevelopment.

(12) From the west, there will be an attractive interchange about one mile west of the intersection of Routes 20 and 90 so that motorists desiring to stop for automotive supplies, food or lodging will be encouraged to do so. This will mean that businesses in Corridor One will not be severely damaged by the route.

(13) Businesses in Corridor 5 will be benefited because the route is the only one of the three that will improve the traffic services in this corridor.

(14) A most important benefit the route will produce will be the diversion of heavy truck-trailer combinations from north-south streets through the central part of the city. It will be logical for the through trucks such as petroleum carriers to use the eastern portion of the route to travel to the proposed eastern by-pass which will connect with U. S. Route 319 near the northern limits of the city.

(15) The South Central Route will have little, if any, effect on businesses on Corridors 3 and 4, businesses in Corridors 6 and 7 would be somewhat benefited.

(16) The businesses located along U. S. Route 90 east in Corridor 2 would suffer since the eastern extension of the Interstate Route would not likely provide attractive nearby access to this section of roadway.

(17) Interchanges would divert northbound traffic approaching Tallahassee from the south to either the east or west so that it would not be required to travel through the city, although it would still have the same opportunity to do so as at present.

(18) With the planned interchanges, good service will be provided directly between the route and the central area of the city without necessitating any extensive reconstruction of local streets.

(19) The route will pass through some of the lowest assessed property in Tallahassee, much of which is presently undeveloped land. This undeveloped land can be expected to develop at a rapid rate when the facility is completed. The net effect will be tax gains for the city.

Relative By-Pass Services

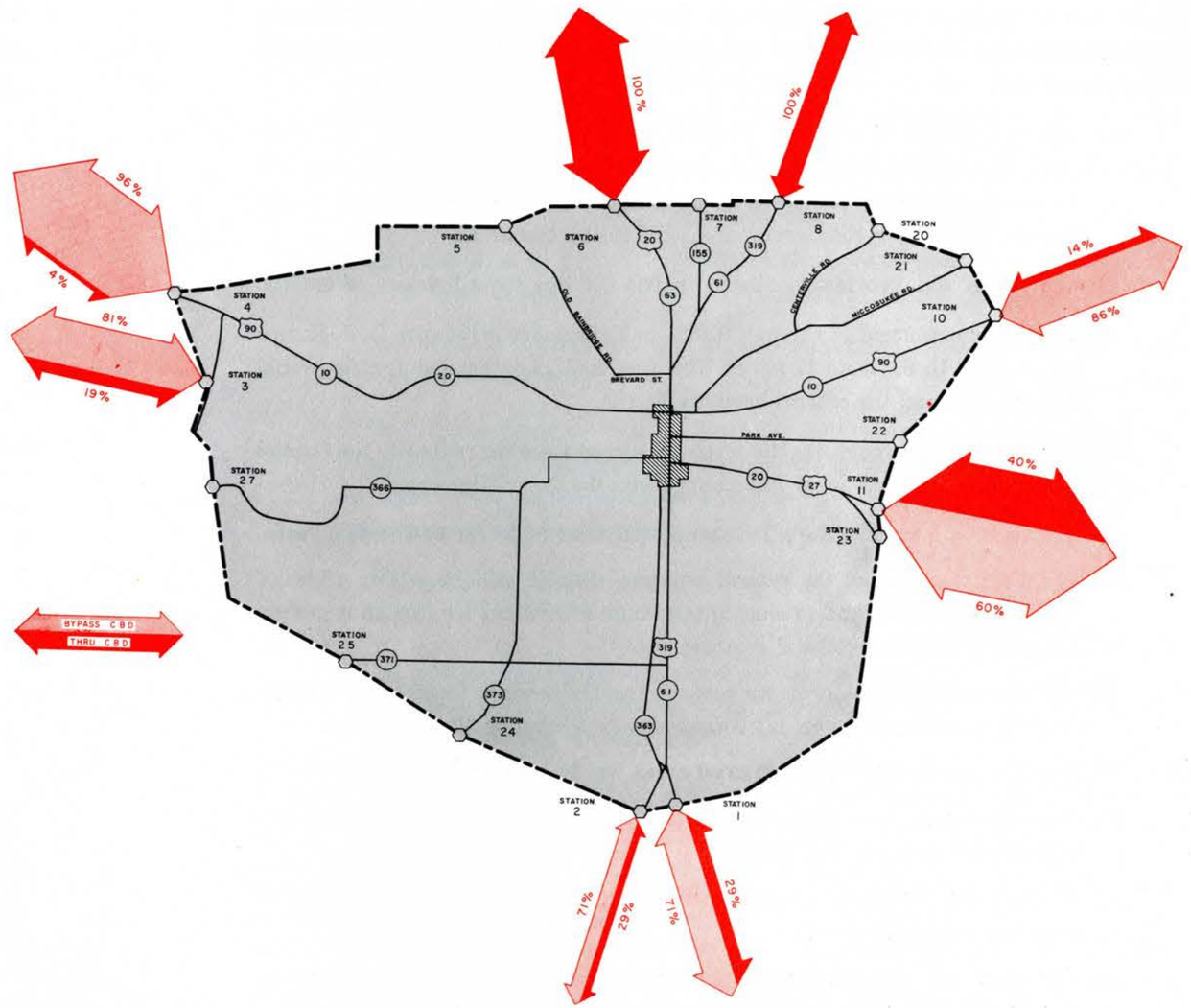
Because Tallahassee is the major interchange point for the majority of motorists arriving on the seven major routes into the city, it is appropriate to place additional emphasis on the required movements within the city. At the present time, these highways are funneling through traffic into the central business district; only a very small per cent of the total through traffic entering the city on main highways, by-passes the

central business district. The motorists who have no reason to stop in the city contribute nothing to the economy of Tallahassee, but place additional burdens on the city streets which, in turn, decreases the desirability on the part of local traffic to enter and stop in the central business district. The best location for a new east-west highway through the city would be one where the potential through motorists would have easy access to the central business district, but also one where the fast, disinterested traffic would not pass through the central city.

With a new facility in the north, one-third of the present traffic entering the central business district on U. S. Route 90 west will be diverted to the new facility. Along Route 90 east, about one-fifth of the traffic now on this route would be diverted. But, these would be the only diversions to a northern route unless some provisions for a connector route was made between Route 90 east and U. S. Route 27 south, east of Tallahassee. Without such a connector the total diversion would amount to only 16 per cent of the current through traffic on central Tallahassee streets.

A North Central Route would mean that nearly all through traffic would still converge near the heart of the city, or at least in the vicinity of the central business district. The present traffic pattern in the central business district would remain much the same as it is now.

The greatest change in the present traffic patterns would occur with a South Central Route. With a convenient interchange to the west of Tallahassee with Routes 20 and 90, it would be expected that the through traffic entering on the new facility bound for points north on Route 27 or Route 319 would leave at this point. Other through traffic from the west would either continue on the new Interstate Route to the east, by-passing the central business district, or would make connections with other routes south of the city. The through traffic on Route 27 south would split, with about 60 per cent



DISTRIBUTION OF THRU TRIPS

AT PRINCIPAL STATIONS

TALLAHASSEE , FLORIDA

SOUTH CENTRAL ROUTE ASSUMED

Wilbur Smith and Associates

FIGURE 38

being diverted around the central area and about 40 per cent passing through, with its primary destination Route 27 north. On the two southern routes, about 30 per cent of the through traffic will continue on through the central business district while about 70 per cent will by-pass, either to the west, to the east, or to the north via a new north-south by-pass on the eastern edge of the area.

Most of the present volume of through traffic, on the northern routes will contine to pass through the center of the city.

Eighty-six per cent of the present through traffic on U. S. Route 90 east can be diverted to by-pass the central business district, with the remainder distributing itself to the northern routes after passing through the center of Tallahassee.

With a South Central Route, 65 per cent of the trucks which currently must pass through the center of town can be diverted to the new route. With either a Northern or North Central Route, this truck diversion would be negligible.

The theoretical distribution of through trips has been constructed and is shown in Figure 38; it assumes construction of the recommended South Central Route and depicts the manner in which through trips found at the major external stations in 1957 might be potentially distributed with regard to movements through the central area of Tallahassee. The volumes shown at the principal highway locations represent approximately 97 per cent of the through traffic in the Tallahassee area. At the present time, it is necessary for practically all of this through traffic to go through the central area of the city. With construction of the South Central Route, as much as 95 per cent of the through traffic on U. S. Route 90 west could by-pass the central area by using the expressway. All of the through movements would be substantially by-passable except those on Routes 27 north and 319 north. The new route would have little effect on the movements to Route 27 north; there would be some by-passing of the Route 319 movements if a new by-pass facility is constructed on the eastern edge of the city to connect with the expressway.

Traffic Volume Comparisons

The 1975 traffic values for the three routes studied are graphically depicted in Figure 39. It should be noted that the values indicated for the North and North Central Routes were determined by projecting the 1957 origin and destination data, without including factors of projected population, retail sales, motor vehicle registration, land use, or other trip generation characteristics which were used in refining the assignments made to the South Central Route. The anticipated traffic assignments to the South Central Route, including the estimated interchange volumes, are subsequently discussed.

It may be noted that the assigned 1975 daily traffic volumes on the North Route range from 6,300 vehicles in the section between Meridian Road and U. S. Route 27 to about 10,600 vehicles west of the study area. The estimated 1975 daily traffic volumes on the North Central Route range generally between 15,000 and 23,000. Volumes on the South Central Route are substantially higher, ranging from a low of about 15,000 vehicles at the eastern terminus to a high of about 30,000 between Lake Bradford Road and Railroad Street.

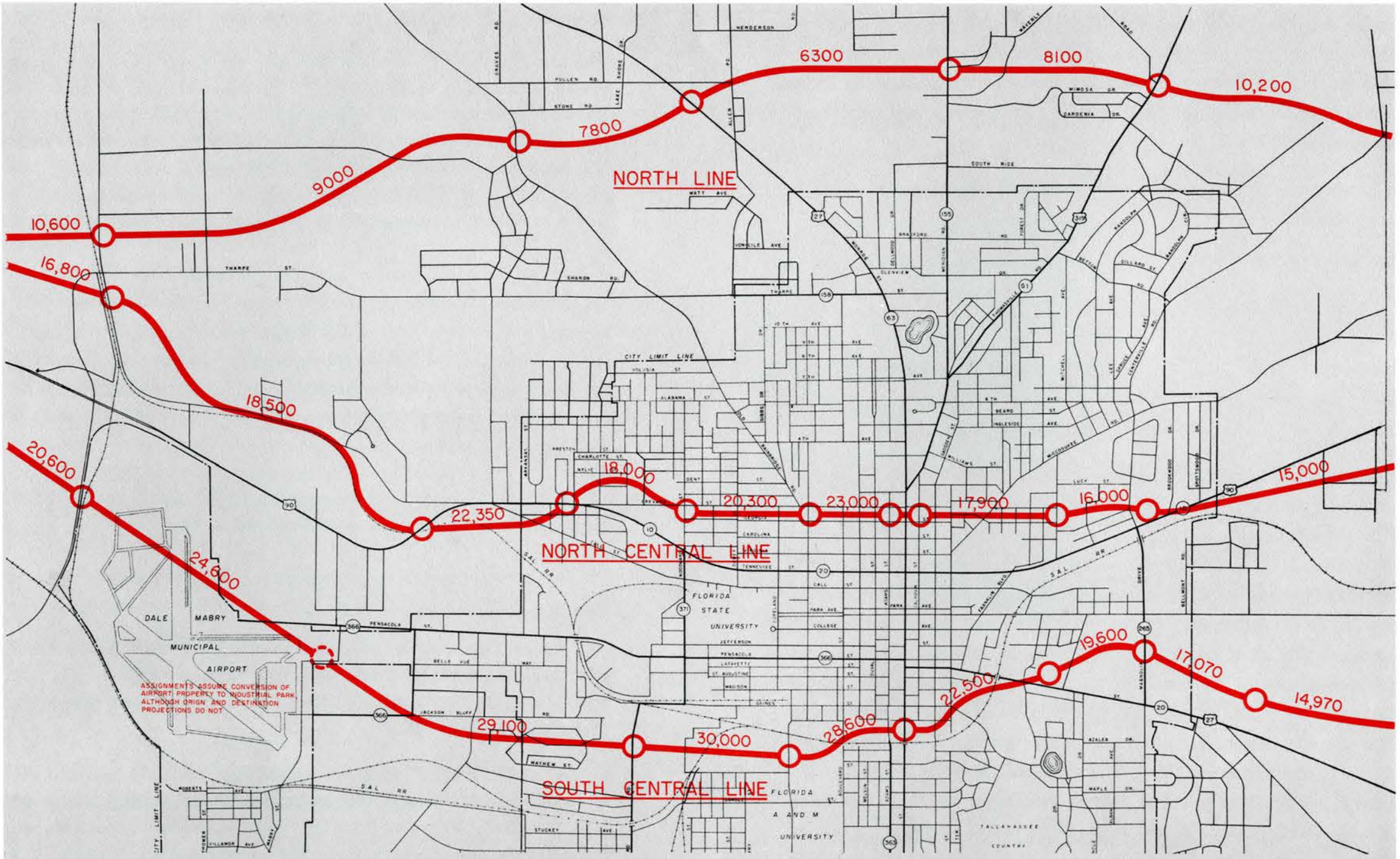
It is quite apparent from a comparison of the three routes that the South Central Route provides, by far, the greatest traffic service.

Cost Comparisons

Before a final determination regarding the location of the east-west interstate facility could be selected, it was necessary to make comparisons of cost. This, of course, was done in addition to the economic, traffic, and planning comparisons that have been presented previously.

A detailed comparison of cost for the three routes studied is shown in Table XVIII. It is quite obvious that the total estimated cost of $4,936,000 for development of the Northern Route is far less than that required for development of the other routes. The South Central Route is estimated to cost approximately $11,446,000 as compared to a total estimated cost for the North Central Route of $10,281,000.

North Route — This route could be constructed much cheaper since the right-of-way acquisition costs are only a fraction of those for the other two routes. It is esti-



ANTICIPATED 1975 TRAFFIC VOLUMES

ROUTES STUDIED

TALLAHASSEE, FLORIDA

Wilbur Smith and Associates

FIGURE 39

TABLE XVIII
COMPARATIVE SUMMARY OF COSTS

Classification	*North Route*	*North Central Route*	*South Central Route*
1. Preliminary Engineering	$ 175,000	$ 233,000	$ 360,000
2. Right of Way	365,000	3,651,000	2,265,000
3. Clear and Grub; Demolition	86,000	140,000	50,000
4. Utility Adjustments	20,000	100,000	50,000
5. Grade and Drain; Minor Structures	852,000	1,198,000	1,141,000
6. Base; Surfacing; Shoulders	1,150,000	1,204,000	1,116,000
7. R. R. Grade Separations	130,000	130,000	530,000
8. Highway Grade Separations Without Ramps	700,000	308,000	575,000
9. Interchanges, Complete	731,000	1,999,000	1,595,000[1]
10. Other Bridges; Tunnels	—	—	2,355,000
11. Walls	—	—	—
12. Guardrail; Fencing; Lighting; Traffic Control Devices	290,000	678,000	569,000
13. Roadside Improvement	18,000	18,000	18,000
14. All Other Items	20,000	40,000	20,000
15. Subtotal (Lines 3 thru 14)	$ 3,997,000	$ 5,815,000	$ 8,019,000
16. Construction Engineering and Contingencies (10% of Line 15)	399,000	582,000	802,000
	$ 4,396,000	$ 6,397,000	$ 8,821,000
17. TOTAL ESTIMATED COSTS	$ 4,936,000	$10,281,000	$11,446,000

[1]Does not include the interchange with U. S. Route 27, east of Magnolia Drive.

mated that the right-of-way for the North Route will approximate $365,000, which is quite negligible when compared to the right-of-way costs of the other two routes. This, of course, is due primarily to the vast amount of undeveloped land through which the North Route would pass. Another item which substantially reduces the total estimated cost of the North Route is the number of interchange facilities that would be required. Because of the reduced traffic service afforded by the route only a few interchange facilities would be required.

North Central Route — As previously discussed, the North Central Route passes through the higher-type residential areas of Tallahassee and, consequently, the right-of-way acquisition costs would be substantially greater than that for either of the other two routes. It is estimated that the right-of-way costs for the North Central Route will approximate $3,651,000. In addition to the higher right-of-way costs, the route disturbs by far the most residences since it is estimated that approximately 75 per cent more dwelling units would be disturbed by this route as compared with the South Central Route. The interchanges that would be required for the North Central Route are estimated to cost approximately $2,000,000. The interchange required in the vicinity of Adams, Monroe, and Calhoun Streets on the North Central Route represents a large portion of the total interchange costs. No special bridge structures would be required over this route as will be required on the South Central Route. Most of the other construction items compare favorably with the South Central Route.

South Central Route — It will be noted that the South Central Route is estimated to cost $11,446,000 which is the most expensive of the three routes studied. One of the principal items that increases the cost of the South Central Route is the bridge structure required over the Elberta Box and Crate Company. The South Central Route costs are increased because of the interchange and structure requirements which must be provided to attain maximum traffic usage. The interchange of this route with U. S. Route 27 east of Magnolia Drive was not included in the calculations.

It is notable that when all the routes are considered, according to their location, that the South Central Route would require almost no new construction of connector and feeder routes. The other two routes, of course, would require some construction of feeder streets, particularly the North Route.

TABLE XIX
VEHICLE MILES AND PROJECT COSTS
TOTAL VEHICLES

Route	*Total Capital Cost*	*Daily Vehicle Miles - 1975*	*Average Annual Vehicle Miles 50 Yrs.*[1]	*Initial Capital Cost Per Vehicle Mile*[2]
				(Cents)
North	$ 4,936,000	48,808	23,941,471	0.41
North Central	$10,281,000	117,392	57,583,044	0.35
South Central	$11,446,000	152,021	74,569,873	0.30

[1]Based on 1985 as the average year for the 50-year period (1975 values increased at the rate of three per cent compounded annually for 10 years).
[2]Based on 50-year Service Life.

Cost-Benefit Relationships

As shown in Figure 37, there is little variation in the length of the three route locations. It is estimated, however, that the cost of developing the routes will vary substantially, as previously discussed.

A simple measure of traffic services afforded by the three routes in terms of vehicle miles is depicted in Table XIX. Relating this elementary measure of services to the capital costs of the routes produces a comparison of benefit versus development cost. This approach is simple, but produces significant results since all routes are of the same design standards and approximately the same length.

As presented in Table XIX, it is anticipated that the average daily vehicular mileage in 1975 will amount to approximately 48,808, 117,392, 152,021 for the North, North Central and South Central Routes, respectively. From this, it is quite apparent that the service provided by the South Central Route far exceeds that of the other two routes. The average annual vehicle mileage of service for a 50-year period for the South Central Route is anticipated to reach 74,569,873 miles; the North Route will produce 23,941,471 vehicle miles, while the North Central Route should approximate 57,583,044. Basing the calculations upon a 50-year service life for each facility, it has been determined that the cost per vehicle mile for all vehicles would approximate 0.41 cents for the North Route and 0.35 for the North Central Route. The South Central Route vehicle mile cost is anticipated to be about 0.30 cents. In projecting the annual vehicle mileage for the 50-year period, 1985, values were considered as the yearly average.

TABLE XX
VEHICLE MILES OF TRUCKS

Route	*Daily Vehicle Miles*	*Annual Vehicle Miles of Service 1975*
North	4,635	1,691,775
North Central	15,848	5,784,520
South Central	29,644	10,820,062

If traffic developed on "total" trips those trips including partial use of the expressway and partial use of existing streets, was considered, the advantages of the South Central Route would become even more pronounced. This is because the route produces the most *direct* services for the heaviest movements of any of the routes examined. In other words, the recommended route ranks higher in benefits since it is used for a greater part of the total mileage of local trips than are the other routes.

A comparison of truck mileage for the three routes is presented in Table XX. The South Central Route is expected to have a much higher daily truck mileage than the other two routes. It is estimated that the annual truck miles of service in 1975 for the South Central Route will be approximately 10,820,062. The North Central Route will have an average 1975 travel of about 5,784,520 truck-miles; and the North Route only about 1,691,775. It is interesting to note that the South Central Route indicates a greater per cent of truck usage; however, this is primarily due to the location of the route in relation to the industrial areas and other generators. All cost-benefit comparisons for trucks, therefore, heavily favor the South Central Route.

The factors of comfort, safety, convenience, delays, and gradients are not significant in the comparison of the three routes because of the route design similarities. As previously indicated, the South Central Route will necessitate much less travel on local streets than will either of the other two routes.

The length of the three routes cannot be considered as a significant factor. Trip lengths over the routes would be largely determined by east and west extensions of the route. It is not possible to include such extensions in this analysis since they have not yet been developed; however, the most favorable connections were assumed in developing traffic assignments.

The assignments of traffic to the three routes were based primarily on time savings. From an analysis of the assignments, the importance of the South Central Route is emphasized. Both passenger car and truck movements will be provided more direct service, because of the strategic location of the South Central Line in respect to the central business district, Capitol Center, and industrial areas.

The Interstate System is also to serve *National Defense* needs. Actually, there appears to be no strong advantage of one of the routes over the others in matters of defense. All could be controlled in an emergency to permit exclusive use by military vehicles or by any classes of vehicles designated by the military. From the standpoint of industrial services, port services, and evacuation of Government buildings, the South Central Route has definite advantages over the others. It should, therefore, be rated higher in matters of National Defense.

Retrospect

From the preceding comparisons, it is apparent that the location of the South Central Route is the most desirable. The South Central Route, as recommended for development, is strategically located to best serve the important traffic generators of the Tallahassee area, and at the same time, provide maximum opportunities for traffic which desires to by-pass the city. The route will also serve much larger traffic volumes than will the other routes studied.

The South Central Route conforms to the city's present zoning and land use plan and provides excellent service to the Capitol Center, central business district, industrial areas and other important traffic generators. Only minimum connector or feeder streets will be required, since the route is well adapted to other roadway improvement plans and existing facilities.

Many important business values will accrue to the city from the development of the South Central Route. Likewise, the route will create the least negative effects on businesses located along the existing major highway facilities. While more expensive to construct than the other routes studied, the services and benefits which will be derived will more than compensate for the additional development costs.

Chapter VIII
ROUTE LOCATION AND GEOMETRIC DESIGN CONSIDERATIONS

Much of the economic power and high living standard enjoyed by this nation are attributable to the freedom of movement which the advent of the automobile made possible and the resultant development of the highways has brought to full flower. As the mileage of the highways and streets suitable for automotive use has grown, it has become necessary to sort them into systems according to usefulness to facilitate the broad planning, design and programming aspects so vital to intelligent highway administration. Each state has a primary and secondary, and some a tertiary system. Most all counties administer their roadnets as two systems. There are several systems of Federal-Aid Highways, that is, the State Highways upon which federal funds in combination with state or local funds may be used for construction. These include the Federal-Aid primary and secondary systems which are usually common with the State systems, the Interstate system, and some National Park and Forest roads not included in the principal systems.

Many cities throughout the country, including some of Florida's, have developed master plans which establish systems of arterial highways, secondary arterials or feeder streets, and local streets. Arterial highways provide continuous and usually fairly direct routes through the city and normally form connections between the principal state highways leading into the city. Secondary arterials serve as connections between parts of the arterial system and as feeders between neighborhood areas and the arterial highways. Local streets are just what their name implies, simply service access ways serving only those properties which abut them, and, consequently, important in the traffic scheme only to the extent that the local abutting properties may generate vehicular traffic.

Arterial highways may be divided into two general classes — major streets and expressways. Unrestricted access to abutting property and other streets crossing at grade characterize the usual major street. Expressways may provide some control of access to the at-grade type of facility, or have the principal cross conflicts grade separated while the less used local cross streets are either terminated or their traffic is permitted access only under controlled conditions. Such a facility is usually known as a modified expressway. Finally, the highest type of expressway is the freeway facility which provides for the prohibition of all cross traffic at grade by full control of access, limiting the latter to carefully designed ramps which permit local vehicles to merge with or diverge from the through streams at speed rates at least seven-tenths that of the design speed of the through freeway. A variation is the parkway which has the same access control characteristics as the freeway but from which all commercial vehicles are barred. In Florida, the term expressway is generally reserved for the freeway facility which has full control of access and is seldom, if ever, applied to an arterial highway or street where access is either uncontrolled, or only partially controlled.

Most of the arterial streets in Tallahassee, which as yet have not been formalized as a system, are also parts of the State Highway System. Three of the State highways are parts of the Federal-Aid Primary System while the Federal-Aid Secondary System includes about half of the mileage of the remainder. Tallahassee is a designated control point on the east-west Interstate System route to be constructed between Jacksonville and Mobile. Thus, a high-type arterial freeway built to interstate system standards, will pass east-west through the Tallahassee metropolitan area. The recommended location is the one defined as the "South Central Route". This new facility would be constructed just south of the Capitol Building and run generally parallel to and between Gaines Street and the railroad. It is believed that the location recommended will be that line which will offer the greatest traffic service to local and long distance traffic and result in the least amount of disruption and economic harm to the community.

Standards for the design of the route must conform to the design standards established for the National System of Interstate and Defense Highways adopted July 12, 1956, by the American Association of State Highway Officials. This is a requirement of the 1956 Federal-Aid Highway Act as a prerequisite for the expenditure of Federal

funds on the Interstate highway system. The 1956 Act provides that standards shall be adequate for the accommodation of types and volumes of traffic anticipated for the year 1975. Excerpts from the Association's policy on the geometric standards for the National System of Interstate and Defense Highways are presented in Appendix C.

Interstate Route Design Standards

The requirements of the minimum design standards for the interstate system have been complied with, and in most instances considerably exceeded, in planning the alignment and grades of the recommended route. The following specific values have governed the designs recommended:

a. *Control of Access* — Full control of access must be maintained throughout the interstate route location. Access and egress to the expressway are permitted only at designated points where on and off ramps are provided. No pedestrian traffic will be permitted and no grade crossings are allowed.

b. *Design Speed* — The design speed for all through lanes of the expressway will be in excess of 60 miles per hour, except for the section between Railroad Avenue and South Adams Street where a 56 mile per hour design has been used. A minimum 40 mile per hour design speed was used at the expressway end of all ramps.

c. *Sight Distance* — The minimum safe stopping sight distance for the expressway system is 475 feet. Safe stopping sight distance is the minimum distance required for a vehicle traveling at the design speed to stop before reaching an object in its path. It is measured from the driver's eye, 4½ feet above the road, to the top of an object four inches high on the road surface.

d. *Horizontal Curvature* — The desirable degree of horizontal curvature used in the expressway design is 4 degrees or less. The absolute maximum curvature of 6 degrees, however, is used at two locations.

e. *Superelevation of Horizontal Curves* — Horizontal curves sharper than 0 degrees 30 minutes shall be superelevated. The maximum rate of superelevation should be 0.08 of a foot per foot.

f. *Grades* — The maximum grade used for the expressway roadways is 3.7 per cent; maximum ramp grades are 5.9 per cent downgrade for an off ramp, and 6 per cent for an up-grade on ramp.

g. *Number of Lanes* — The interstate route must provide a minimum of four lanes for travel throughout the section covered by this report. The lanes shall be arranged to provide for separation of traffic flows in opposite directions. Four lanes will be sufficient to more than adequately provide for the volumes of traffic expected to utilize the expressway in the year 1975.

h. *Lane Width* — The minimum width of express lanes must be 12 feet. Where barrier curbs are used, as on structures, such curbs shall be offset at least 2 feet from the edge of the through traffic lane. Single lane ramps should have a minimum paved width of 14 feet for tangent sections. For ramps with curvature, the width of paving on single lanes shall be increased to a maximum of 20 feet for the 180 degree circular loop ramps.

i. *Medians* — A 44-foot grassed median is specified which is depressed to a center drain on the four-lane divided facility. Future widening should not be necessary, but in the event it does, two additional lanes could be constructed in the center and still leave space for a 20-foot median. Median cross-overs, at vantage points with optimum sight distances in both directions, should be constructed for the use of emergency, maintenance and police vehicles.

j. *Shoulders* — Twelve-foot shoulders are recommended for both the right and left sides of the expressway. Ten feet of the right shoulder and four feet of the left should be paved.

k. *Slopes* — Side slopes shall not be steeper than two to one. In general, 6 to 1 slopes for cuts and fills less than six feet high, and 4 to 1 slopes for fills from 6 to 12 feet high are recommended.

l. *Frontage Roads* — Only one frontage road of any length is required. This is west of Lake Bradford Road on the south side and provides for two-way operation. Several other short sections will be used for frontage roads and will be operated for one-way traffic.

m. *Right-of-Way* — A minimum right-of-way of 250 feet is specified for the expressway. It must be remembered that the new highway through Tallahassee will include a right-of-way area on both sides of the roadway and that this area

will contain no service facilities for the use of the highway motorists. These services will be provided by those establishments which will be located on existing or newly-developed feeder routes. In the United States, State operated service facilities have met with considerable opposition by roadside interests who insist that some form of competitive marketing should be provided. In urban areas, through which the interstate system will pass, two solutions have been suggested:

1. Encourage the use of service facilities on existing intersecting feeder roads. Signs should be posted well in advance of these interchanges, advising the motorists of the services available.

2. Provide signed interchanges to parallel service roads on which service stations, motels and restaurants could be located.

In Tallahassee, the existing service facilities under these two suggestions could be incorporated to serve the interstate highway. The business community along U. S. 90 west would adequately serve this purpose as well as those establishments presently located on the feeder roads located south of the central business district. With adequate signing, the highway motorists could leave the highway at the interchange with Route U. S. 90, west of Tallahassee, and without undue inconvenience satisfy his needs with the concept of free enterprise, coupled with excellent services, upheld.

n. *Fencing* — Adequate fencing to keep pedestrians, children, and animals off of the right-of-way is recommended.

o. *Erosion Control and Landscape Development* — Landscape development should be in keeping with the character of the highway and should be a part of the initial highway construction.

The benefits of skillful roadside planting are many: roadside noises are reduced to a minimum, headlight glare is reduced, and erosion control and maintenance is simplified. When noise is absorbed by a broad planted right-of-way and traffic is screened out of sight, the value of neighboring homes in residential areas is not depreciated. Experience indicates that homes adjacent to properly landscaped expressways actually gain in value over comparable residences further removed.

Savings in maintenance costs alone are usually adequate to pay for the initial expense of plantings and other landscaping.

Plants should be selected and located with regard to their ultimate growth to preserve sight distance. Desirably, trees should be offset at least 15 feet from the edge of pavement. The seeding and planting of an area should be considered in the initial design to protect against slope erosion and drainage clogging. The ends of the directional islands may be planted with low-growing shrubs which will be seen from a considerable distance and direct the driver's attention to the necessity for a turn. These shrubs should not be of the type that could cause vehicle damage upon impact and they should not obscure signs or warning devices.

Improperly located shrubs or trees may seriously shorten horizontal sight distance on curves and seriously interfere with lateral sight distance between adjacent roadways.

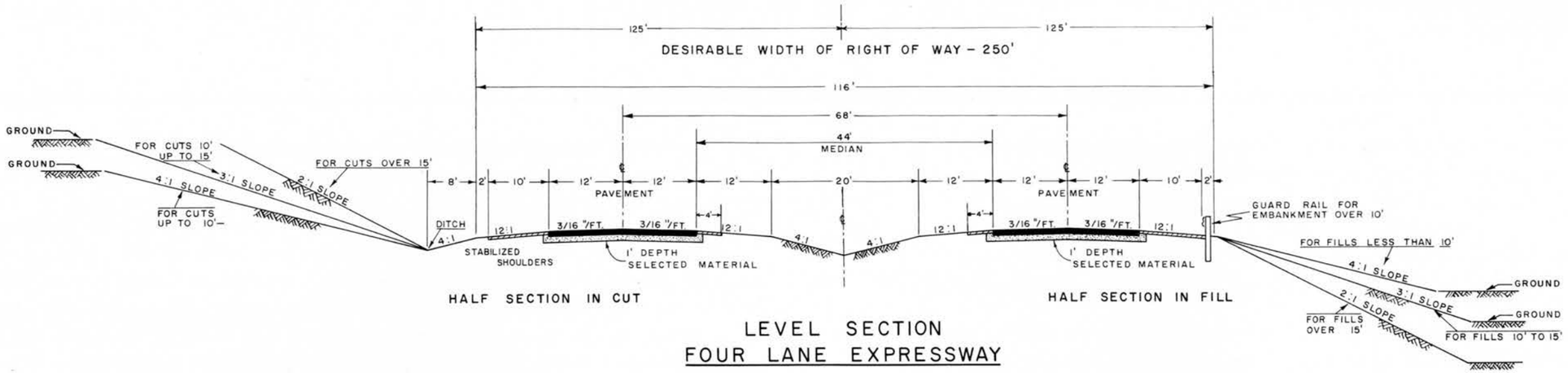
Landscape development should be an integral part of interchange design. Special emphasis should be given to the arrangement of landscaping that will aid in warning of necessary speed reduction and changes in direction. Plantings that interfere with sight distance should be avoided. Landscaping of an interchange area should be designed as a single unit, rather than treating each through roadway or ramp as a separate unit graded and planted to a standard cross section.

p. *Lighting* — Expressway lighting is recommended over the urban section of the expressway - Lake Bradford Road area to the easternmost Seaboard Air Line crossing. All the interchange areas, however, should be illuminated. A 90-foot staggered spacing for 20,000 lumen luminaires at an average height of 28 feet above the pavement has been assumed for the four-lane divided roadways.

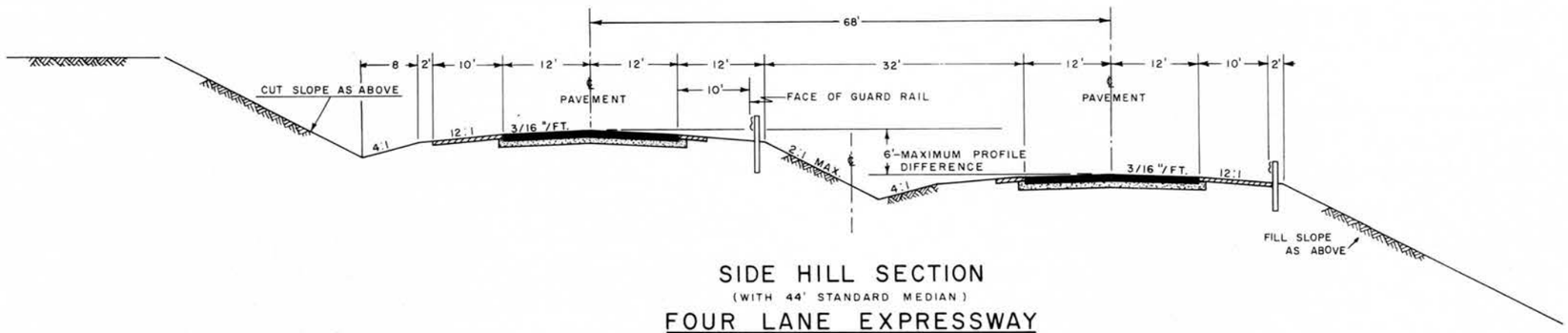
q. *Signing* — Maximum operational efficiency and safety require adequate signs. Illuminated overhead signs are recommended for the major interchange areas.

r. *Traffic Signals* — Signal control should be provided at ramp contact points with South Adams, Monroe, and Gadsden Streets.

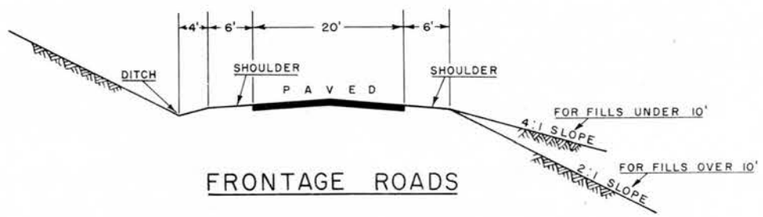
s. *Bridges and Other Structures* — The following standards shall apply to interstate system bridges, overpasses, and underpasses. Standards for cross road overpasses and underpasses are to be those for the cross road.



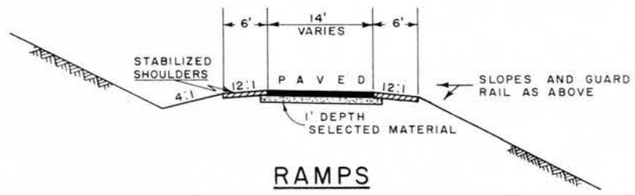
LEVEL SECTION
FOUR LANE EXPRESSWAY



SIDE HILL SECTION
(WITH 44' STANDARD MEDIAN)
FOUR LANE EXPRESSWAY



FRONTAGE ROADS



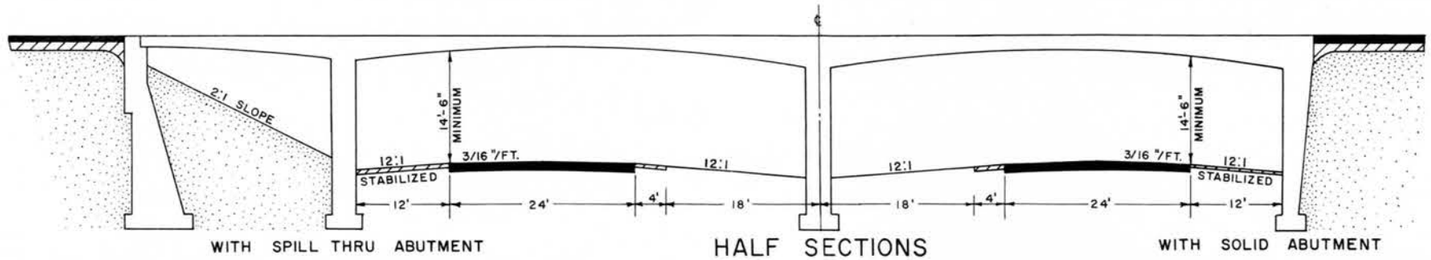
RAMPS

TYPICAL ROADWAY CROSS SECTIONS

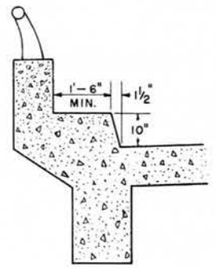
PROPOSED INTERSTATE ROUTE

TALLAHASSEE, FLORIDA

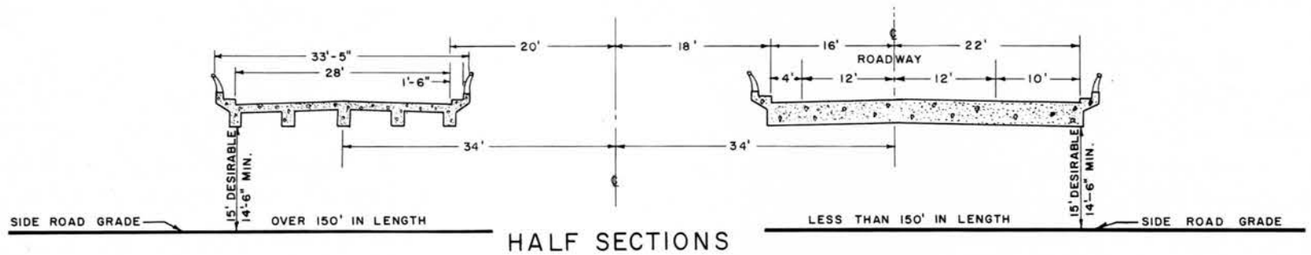
1957



SIDE ROAD OVER 4 LANE INTERCHANGE



SIDEWALK & CURB DETAIL



HALF SECTIONS

INTERSTATE STRUCTURE OVER CROSS STREET

TYPICAL STRUCTURE SECTIONS

PROPOSED INTERSTATE ROUTE

TALLAHASSEE, FLORIDA

Wilbur Smith and Associates

FIGURE 41

Bridges and overpasses should be located to fit the over-all alinement and profile of the highway.

The clear height of structures shall be not less than 14 feet, 6 inches over the entire roadway width, including the usable width of shoulders.

The width of all bridges, including grade separation structures, of a length of 150 feet or less between abutments or end supporting piers, shall be not less than 38 feet or shall be equal to the full roadway width on the approaches including the usable width of shoulders. Barrier curbs on bridges longer than 150 feet between abutments shall be off-set at least two feet outside of the approach pavement edges. Thus, for two-lane structures, a 28-foot minimum width between barrier curbs is required. Off-sets of face of parapet or rail shall be at least one and one-half feet outside the face of curbs on both left and right of the through traffic lanes.

t. *Typical Roadway Cross Sections* — Figure 40 shows the typical roadway cross sections recommended for the Interstate Route. This shows the various widths for pavements, medians and shoulders, along with the recommended slopes most commonly expected.

u. *Typical Bridge Sections* — Figure 41 shows the typical cross sections recommended for the expressway structures.

Chapter IX
RECOMMENDED ROUTE

The South Central Route is recommended for construction as the Interstate Route location through Tallahassee.

Interchanges and Alinement

For the purpose of this report, this route would begin at a point slightly west of the intersection of Route U. S. 90 and a local county road extending along the line between sections 29 and 30 of T1N-R1W. This intersection is located approximately one mile west of the intersection of Route U. S. 90 and State Route 20. Ramp facilities for adequate interchange of traffic between the western leg of the Interstate Route and the eastern portion of Route 90 is recommended. This interchange must be well posted with directional signs pointing the way to available roadside servicing facilities located along U. S. Route 90 into Tallahassee.

From this interchange, the route would proceed southeasterly to cross State Route 20 and the Seaboard Air Line Railroad at the northwest corner of the Dale Mabry Municipal Airport. A half diamond type interchange with inter-loops is recommended as connections to State Route 20. The route alinement continues southeasterly across the northeastern extremities of the Airport crossing Jackson Bluff Road a short distance west of Lipona Road. A full diamond type interchange should be provided at some point between Route 20 and Lipona Road to serve the Industrial Park that is proposed as a replacement for the Dale Mabry Municipal Airport. The exact location of this interchange cannot be determined until final plans are drawn for the redevelopment of the Airport as an industrial area. Since it is not proposed to provide a separation structure at the Jackson Bluff Road crossing, it will be necessary to construct a frontage road along the south side of the expressway from that point to the Lake Bradford Road intersection. The alinement turns almost due east at Lipona Road and extends in an almost straight line to Railroad Avenue which is intersected in the vicinity of Canal Street. The route would pass between the Azalea Park and Eppes Heights sub-divisions. Very little of the medium-priced housing which has been developed in this area would be disturbed. The line has been located between these sub-divisions along the unoccupied tract of land lying immediately north of the existing high-tension power line.

Immediately east of Lake Bradford Road, the route will have to cross the property of the Elberta Box and Crate Company, which is the largest manufacturer in Tallahassee and is reported to pay one-fourth of the City's industrial payroll. At the eastern edge of the Elberta Company property, the main line of the Seaboard Air Line Railroad must be overpassed. At the western edge of the same property, the Lake Bradford Road must be bridged. The height of these two overpasses will require that the grade line in between be elevated for some distance above the ground level in the Box Company property to avoid a most undesirable undulation. Since much of this manufacturer's operation is dependent upon shifting lumber from the northern portion of the property to the saw mills and other production facilities located in the southern half of their property and, since an embankment of any character would eliminate these necessary movements, it is recommended that the entire area be bridged so that the expressway will be high enough to permit crossing maneuvers under the bridges after the expressway is constructed. It is recognized that a highway which seriously interferes with the operations of this company could adversely affect the entire economy of Tallahassee. The diamond type interchange with interloops has been located entirely west of Lake Bradford Road for the same reason.

A diamond type interchange is recommended for the Railroad Avenue crossing to provide service for the industrial establishments located along the line west of the railroad station. This interchange would also provide excellent service for the Florida A&M University traffic. East of Railroad Avenue, the route would swing northeasterly with a six degree curve to pass over the railroad on a 45 degree skewed structure, approximately where a prolongation of Boulevard Street would cut the railway. On the north

side of the railroad, the route turns back to the east with another six degree curve to generally parallel the alinement of Bloxham Street on a line about 300 feet north of the railroad.

The route would overpass Adams, Monroe and Gadsden Streets with a half diamond interchange being provided on the west side of Adams Street together with a southbound to westbound connection from Duval Street. An eastbound one-way collector road is proposed on the south side of the route from Adams to Monroe Street.

Monroe Street is currently being reconstructed to a 6-lane width from Oakland to Pensacola Street. This project will include the widening of the existing underpass of the Seaboard Air Line Railroad and the construction of a separation structure to pass Monroe Street over Bloxham Street. The necessity of passing under the railroad and climbing to the Capitol Center Area requires an eight per cent grade. Since this grade would control the cross section of the westbound OFF ramp contact with Monroe Street, the ramp location has been shifted to come to the surface street at Gadsden rather than Monroe. However, a pair of ramps are recommended to connect Monroe Street with the westbound one-way Bloxham Street proposed by the State's report on traffic improvements recommended for Tallahassee. These connections will permit westbound traffic to leave the expressway at the Gadsden Street OFF ramp, traverse Bloxham Street to Monroe and turn onto Monroe Street either to the south or north. The theory behind the shifting of this OFF ramp is that turning vehicles at Monroe Street, having passed over two blocks of a city street, will have reduced their speed to a point that the turn to the north, which must be made against what is in effect an adverse super-elevation, will be reasonably safe. It is doubtful that all such maneuvers would be made at a safe speed if the ramp from the expressway were located to directly abut Monroe Street. The ON ramp to connect Monroe Street with the eastbound expressway will tie into the Monroe Street grade in a vertical curve where the rate of grade change is somewhat less than 4 per cent. Although the resultant cross slope is quite undesirable, it can be tolerated under the circumstances.

The report prepared by the Florida State Road Department also recommends a system of north-south one-way streets. This plan would make Bronough Street one-way southbound, Duval Street one-way northbound; Adams and Monroe would remain two-way streets while Calhoun would be one-way southbound paired with Gadsden Street northbound. The ON ramp to the westbound expressway from Adams has been intentionally lengthened to permit a connection from southbound Bronough Street. Additional length was also necessary to permit 25 miles per hour turning traffic from Bronough to achieve the required 40 miles per hour speed before entering the expressway lanes.

From Gadsden Street the line would swing northeasterly overpassing West Myers Park Drive near Gaines Street, pass through the section of low-cost housing in the area between Meridian Street and the railroad, turn easterly to overpass the railroad, North Myers Park Drive and Lafayette Street in the vicinity of the Broward Street intersection with the latter.

An OFF ramp for eastbound expressway traffic would be provided at this point to permit eastbound U. S. Route 27 traffic to leave the expressway. The ramp has been located here rather than to tie in directly to the new Apalachee Trail because it is understood that certain right-of-way acquisition contracts provide that access rights to the eastbound service road shall not be extinguished, and further that the frontage road itself shall not be cut. Use of the access road as a connection is not feasible because left turns and an exchange to the Apalachee Trail through lanes at Magnolia will both be prohibited.

The line would turn slightly northeasterly to cross the frontage roads and through lanes of the new Apalachee Trail now under construction. The expressway overpass would be located in the vicinity of Goodbody Lane and an OFF ramp for westbound expressway traffic to pass on to the westbound frontage road of the Apalachee Trail would be provided. From this point, the line turns back easterly to parallel the new Apalachee Trail construction to underpass Magnolia Drive at a point approximately 500 feet north of the new crossing of this road now being constructed as a part of the Apalachee Trail project. A full diamond interchange would be provided for the Magnolia Drive crossing.

The Interstate Route would continue easterly in a location designed to leave a strip of property approximately 250 feet wide between its right-of-way and that of the Apalachee Trail. This alinement would continue to a point approximately 1,600 feet east of Magnolia Drive opposite the intersection of Lafayette Street and the St. Augustine Road where the Interstate Route would turn due east while the Apalachee Trail would diverge in a southeasterly direction.

Two connecting ramps, with a necessary structure for each, are recommended to connect westbound Apalachee Trail traffic directly to the westbound Interstate roadway;

and to connect the eastbound Apalachee Trail directly to the eastbound Interstate roadway. The introduction of these connections will require a limited amount of reconstruction work on the Apalachee Trail in order that its westbound through lanes be shifted and spread apart from the eastbound lanes sufficiently to permit a structure to be provided to separate the westbound roadway from the eastbound connection to the Interstate highway.

Alternate Location Studies

An alternate location for the Interstate Route east of Magnolia Drive was given careful consideration. This proposal would have taken the route under Magnolia Drive at a point some 550 feet south of Park Avenue and extended it easterly more or less parallel with Park Avenue. The line would have crossed Park Avenue about three-quarters of a mile east of Magnolia Drive, turned northeasterly to pass north of the Federal Correctional Institution and cross the railroad in the vicinity of Perkins Station at the western end of Lake Lafayette. This line received considerable attention since the initial assumption was that the Interstate Route would be required to connect with U. S. Route 90 within a few miles east of Tallahassee. The proposal was abandoned for two reasons:

First, it is fairly certain that the Interstate Route will be located to cross State Route 57 at a point approximately midway between Monticello (U. S. Route 90) and Capps (U. S. Route 27) in Jefferson County. This point is a little south of the village of Drifton and would mean that west of this village the Interstate Route would not tie into U. S. Route 90 but instead would probably be located to lie south of the Seaboard Air Line Railroad which in turn would make it desirable that the line be located on the south side of Lake Lafayette. Thus, a line located west and north of the Lake would be rather indirect and might require two additional railroad grade separation structures.

Secondly, it has been definitely established that interchange facilities should be provided for the westbound movements from the Apalachee Trail to the Interstate Route, and for the eastbound traffic from the Apalachee Trail to the Interstate highway. Only indirect non-directional interchange ramp connections would be possible if the Interstate Route were located in the vicinity of Park Avenue whereas direct directional ramps are possible for the accommodation of such movements with the Interstate location as recommended.

Another proposal which was given careful study was the location of the route between Bronough Street and West Myers Park Drive. It was determined that the route should be located north of the railroad even though two additional railroad grade separations would be required. It was felt that the ability to directly connect to the north and south streets passing through the central business district would offset the undesirability of the additional structures. Other factors dictating the recommendation include the fact that the location on the north side of the railroad will pass through two publicly-owned baseball parks which are now little used, and requires a minimum acquisition of private property, most of which is low-cost housing; whereas, a location to the south of the railroad would pass through little or no publicly-owned property, and would require the acquisition of considerable good commercial and industrial holdings in the vicinity of Adams-Monroe-Gadsden Streets, in addition to much high class residential property in the Myers Park area.

Roadway Construction Requirements

A four-lane divided facility will be adequate to provide for all traffic volumes anticipated for 1975. Single-lane ramps will provide sufficient capacity to meet all interchange requirements. A 44-foot wide (from edge of pavement to edge of pavement) medial area is recommended. The depressed type median strip should be satisfactory for this project. The grade lines have been laid for the center line of each roadway, which are recommended to be crowned by sloping in both directions like a typical two-way highway section. The grade line for each roadway is the same except for a short section in the Adams-Monroe-Gadsden Streets area where the steep Monroe Street grade dictates, for economy reasons, a difference of grades between the two roadways, and different grade lines have been used for the roadways east of Magnolia Drive.

The super-elevated cross slopes on curved sections should be revolved about the center line of each roadway, and the cross slopes in the medial area must be adjusted accordingly.

Speed change lanes should be provided at the transitional areas between ramp roadways and expressway through lanes. The length of these transitional sections should be determined in accordance with accepted practice as set forth in the American Association of State Highway Officials' Policy on Design. The design speed for ramps at their junc-

tion with the expressway should be seven-tenths the design speed of the expressway lanes.

Traffic Services

After determining the general location for the proposed east-west expressway, final traffic assignments were made to the route. In making the assignments, the ability of the conventional streets to serve the route through the various interchanges was carefully analyzed.

Traffic Assignments — All zone to zone movements were considered in making the traffic assignments to the proposed route. Assignment curves were prepared which included time and distance savings as the principal factors. These curves were adjusted for intangible values demonstrated by actual practices and reflected by the desires of motorists to travel on high-type roadway facilities. For each zone to zone movement the time and distance over the proposed route was computed; these values were also determined for the same trip movement over the conventional street system. In making the assignments, an assumed operating speed of 50 miles per hour was used on the proposed route. Peak-hour vehicular speeds as determined by numerous speed and delay runs were used for computing travel times over the existing routes either as a part of the proposed route or as a competing facility.

Several basic assumptions were necessary in making trip assignments. The principal assumptions were:

(a) That the proposed east-west expressway will be constructed and in operation by 1975, and that access points will be located approximately as indicated.

(b) That the extensions to the interstate system to the east and west of the Tallahassee area will be completed and connected directly to the proposed route by 1975.

(c) Vehicles not using the east-west route will utilize the existing streets between points of origin and destination at average peak-hour operating speeds presently being attained on these routes.

(d) That all types of vehicles will be permitted to utilize the recommended route.

Traffic Inducements — It was necessary in fabricating the travel patterns assumed for 1975 to consider growth of the entire area by each individual zone. No constant growth values could be used in this connection. The 1975 anticipated growth in basic travel desires provides a complete pattern of traffic movements from which the assignments were made. Through this method, the necessity of making assumptions concerning traffic inducements was eliminated. This was possible since the growth and development of the individual zone to zone movements were made on the assumption that the roadway would be constructed as planned. This produces over-all accuracy in traffic analysis.

Time Savings — As previously indicated, the assignments were based primarily on time and distance savings. Because of the directness of the present street network, little distance savings can be effected and are, therefore, of minor significance. The principal values involved savings of time which will be afforded by use of all or a portion of the proposed route.

Traffic Demand — Because of the anticipated traffic loadings in 1975 and the design of the proposed facility, it is not anticipated that critical capacity problems will arise, even during peak traffic periods.

A somewhat critical condition could possibly occur, however, at the Gadsden-Monroe-Adams Street interchange. In making the traffic assignments some of the eastbound traffic which could utilize the Gadsden-Monroe-Adams interchange has been assigned to the interchange at Magnolia Drive. This diversion of traffic to the Magnolia Drive interchange is based primarily on the assumption that the present street pattern will encourage motorists to utilize this interchange during critical traffic periods on the Gadsden-Monroe-Adams Street interchange.

Traffic Values — The average daily volumes assigned to the entire route for the 1975 level are graphically depicted in Figure 42.

Beginning at the western terminus, a total movement of 20,600 vehicles is anticipated. Relatively small interchange volumes are expected at State Route 20. Express-

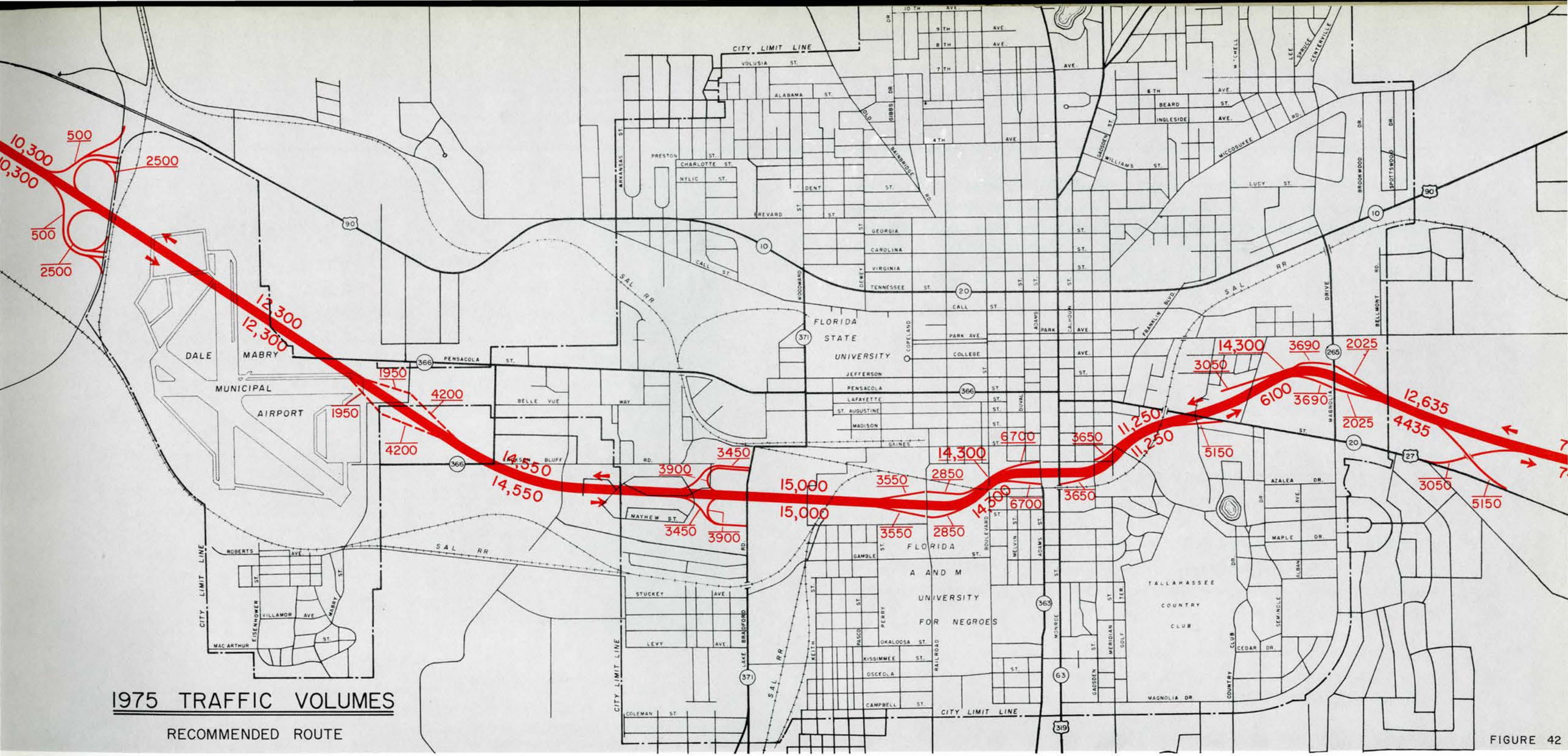


FIGURE 42

way volumes increase to about 24,600 west of the assumed interchange in the vicinity of the Dale Mabry Municipal Airport. Interchange volumes assigned to the assumed location include adjustments for the conversion of the present airport to an Industrial Park. The adjustments were necessary since the origin and destination projections did not assume such a conversion. Just east of the Airport area the average daily volumes approximate 29,100 vehicles.

Substantial interchange volumes are also expected at Bradford Road. East of this important north-south arterial, the volumes continue at an estimated level of approximately 30,000. Even with substantial interchange movements expected at Railroad Avenue, the volumes remain fairly constant (28,600) until the Adams-Monroe-Gadsden Street interchange is reached. As previously pointed out, it is expected that the heaviest interchange movements will occur at this location. Principal movements to the central business district and the Capitol Center would occur at this point.

The anticipated volumes decrease to approximately 22,500 vehicles east of Gadsden Street. East of Goodbody Lane, the volumes decrease to approximately 19,600. Heavy interchange volumes are anticipated at Magnolia Drive. East of Magnolia Drive the route volumes decrease to slightly over 17,000, then drop to approximately 15,000 daily vehicles immediately east of the interchange ramps with U. S. Route 27.

Other Specific Services

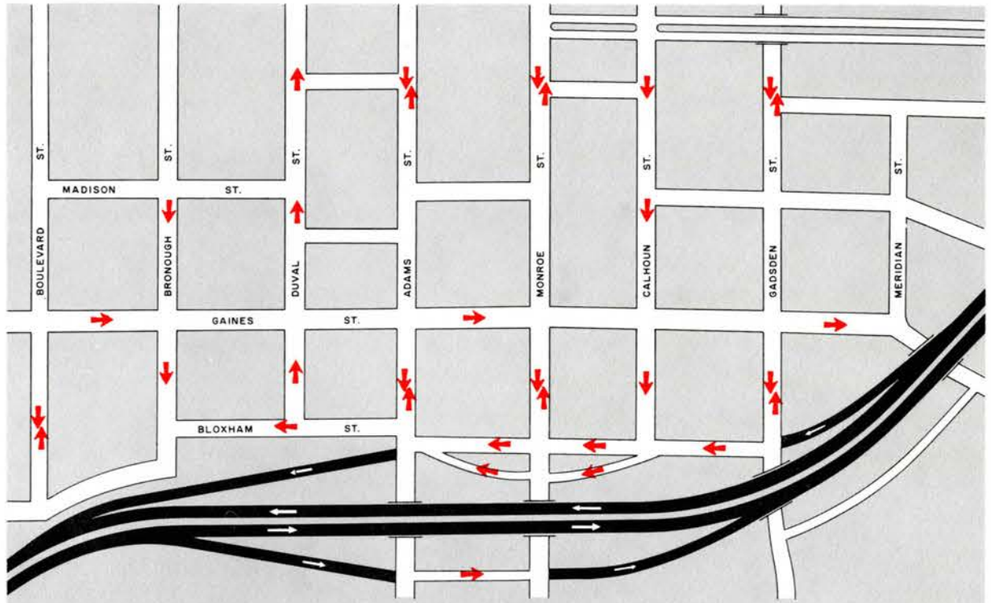
It is doubtful that a better location could have been selected to provide service for the existing industrial areas lying along the railroad between Adams Street and Lake Bradford Road. The line not only passes quite near these industrial establishments but excellent access facilities have been provided at both Railroad Avenue and Lake Bradford Road. No industrial or commercial establishment located in this general area is more than one-half mile from expressway service and few are more than one-quarter mile.

Excellent service will be provided by this location to the proposed Industrial Park to be developed in the area of the existing Airport. The type of industry that locates in this Park will determine the traffic generation which in turn should govern the location of the interchange facility to be provided.

Since a service road has been recommended along the south side of the expressway between Lipona Road and Lake Bradford Road, the local service it will provide will undoubtedly encourage new building activity in this presently undeveloped section.

The Railroad Avenue interchange facility will provide excellent service for the normal Florida A&M University activities as well as for the special events in connection with its cultural and athletic programs.

Similar service to the Florida State University will be provided by the Lake Bradford Road interchange. This is especially true for football games, since an expressway interchange will be located within one-fourth mile of the State University's stadium. The same interchange will provide service to the new Airport when its construction in the Lake Bradford region is completed.



EXPRESSWAY RELATED TO
ONE-WAY SYSTEM
TALLAHASSEE, FLORIDA
1957

FIGURE 43

Excellent service will be provided for the peak-hour movements of government employees, inasmuch as the Adams-Monroe-Gadsden Street interchange is literally within a stone's throw of most of the State Office Buildings.

Conformity With Other Over-all Plans

The one-way street plan in the downtown area proposed by the Traffic and Planning Division of the State Road Department has been previously touched upon. Figure 43 shows the relationship of this plan to the recommended expressway ramps. Gaines Street may continue to be operated as a two-way street rather than as a one-way eastbound facility shown by the figure, if this is found desirable.

It is believed that much of the traffic interchanging between the central business district and areas east of the City will wish to utilize the new Apalachee Trail which terminates at Monroe Street directly in front of the State Capitol, and suitable ramp connections between the Interstate Route and the Trail have been planned to readily permit this.

About ten years ago, a Capitol Center Plan[18] was prepared for the State Board of Commissioners of State Institutions. The boundaries of the proposed Capitol Center area are Jefferson Street on the north, Bronough Street on the west, Gaines Street on the south and Gadsden Street on the north. In addition, a plaza area was to be created on the south side as far as the railroad between Adams and Monroe Streets and another park-like plaza was to be provided on the east side along Lafayette Street. This latter scheme is now being consummated with the construction of the Apalachee Trail. The expressway has been located to conform to the general concept of the Capitol Center Plan, inasmuch as it is to be located one block south of the southern boundary with ramp connections to the streets forming the western and eastern boundaries, and the expressway bridge across the Apalachee Trail has been located at a sufficient distance away from the Capitol and in such a manner as to avoid an unsightly distraction in this pleasant vista along the eastern plaza.

Since the expressway is well integrated with the one-way street plan for the downtown area, it is, of course, well integrated with the over-all major street plan to be recommended for Tallahassee. As previously pointed out, the alinement and grade lines of the expressway have been fitted to the plans governing the reconstruction of Monroe Street now being prosecuted.

[18]"Florida Capitol Center," A. D. Taylor and Herbert L. Flint, 1947.

Chapter X
COST AND PROGRAM

The development of a sound means for appraising the construction economies for the three routes required the preparation of detailed cost estimates. Estimates were made for all of the various items involved in the construction of the roadway and structures for each of the routes. In developing the estimated costs it was necessary to establish unit prices and to determine the quantities to which such prices should be appropriately related. To determine the comparison of costs for the three routes which was previously discussed, it was necessary to determine the cost values and quantities to the same relative degree of accuracy. Since a more complete examination was made of the South Central Route after it was chosen as the recommended location, the cost estimates for it are regarded as being slightly more accurate, particularly with regard to the quantities.

The several cost items were estimated after considering data furnished by the Florida State Road Department engineers who are familiar with the present construction practices and conditions likely to be encountered in the Tallahassee area.

Right-of-Way Costs

Right-of-way costs will form a large part of the total project cost. The estimates are based upon the current assessed valuation as recorded in the City and County Tax Assessors' offices. The estimated present sales values were derived by applying approximate factors to the assessed valuation.

The technique used to determine land values included the plotting of the right-of-way width of the expressway upon tax maps so that the assessment for the individual properties could be obtained from the tax records. For preparation of this report, a constant 250-foot right-of-way width was used. The right-of-way costs include the values of the improvements on properties situated within the right-of-way. No precise factor can be applied to the assessed values to represent present sales prices; however, from the best available sources, it was determined that a factor of three is realistic within the city limits. Larger factors were applied to the properties outside the city limits where development is sparse.

Roadway and Construction Items

(1) *Clearing and Grubbing* — Wooded areas require clearing and grubbing before beginning construction of the roadway embankments. A study of the aerial photos was made to determine the amount and nature of this coverage. More precision may be accorded this item during the detail survey period. It is believed, however, that the estimates of the number of acres required to be cleared has been objectively determined in a manner suitable for cost comparisons of the alternate lines. Five hundred dollars per acre was the estimated unit price used.

(2) *Earth Work* — The volume of earth work could not be determined with great accuracy because of the lack of sufficient vertical elevation data. The ground line elevations had to be taken from a variety of available data — comprised of the U. S. Geological Survey Quadrangle sheets, a small scale aerial mosaic contour map developed by the State Road Department, contour maps of certain small sections prepared for the City, contract plans for the two highway projects now under construction which are crossed by the South Central Route, and some fourth order levels run in the field by this firm. Measurements between the ground line profiles and the recommended grade lines were used to compute the yardage of earth work. A unit price of 50 cents per cubic yard was used for regular excavation while 75 cents per cubic yard was used for borrow.

(3) *Select Material* — It is the current practice of the Florida Road Department to require select material to be placed on the roadbed for a depth of 12 inches beneath the pavement. An allowance of 30 cents per square yard was used for this item.

(4) *Pavement and Shoulders* — An estimated unit cost of $5 per square yard has been allowed for the high-type pavement required for the Interstate roadways. A similar unit price has been used for the interchange ramp pavement. For other public roads, including the frontage roads, the estimate is based on a unit price of $3 per square yard for pavement and $1 per square yard for shoulders, since most of these will be roads not requiring the quality of pavement to withstand the heavy traffic expected on the Interstate System.

Recent highway research has proven that to sustain today's heavy truck traffic, high-type pavement must be protected with paved shoulders. Accordingly, it is recommended that paved shoulders 10 feet wide on the right and 4 feet wide on the left of each of the expressway roadways be provided. Four feet of paved shoulders should be provided on each side of the interchange ramp roadways. An allowance of $3 per square yard has been estimated for this item.

(5) *Drainage* — The cost of cross drainage has been estimated on the basis of a 15-inch pipe being required every 300 lineal feet of the Interstate Route. Such pipe is estimated to cost $3.50 per lineal foot installed. A double 6x6 box culvert has been recommended to carry the stream which parallels the Lake Bradford Road. A double 8x6 box culvert will be required to carry the stream crossed in the vicinity of Railroad Avenue and Canal Street.

(6) *Structures* — Twin structures are recommended for all highway over-passes of intersected streets and railways. The length of these structures is governed by the width and angle of crossing of the street or railroad. For structures less than 150 feet in length, the curb width for each twin structure must be 38 feet, 10 feet for the right shoulder, 24 feet for the normal roadway lanes and 4 feet for the left shoulder. For structures more than 150 feet in length, and this includes each of the long twin structures across the property of the Elberta Box and Crate Company, a curb to curb width of 28 feet has been used, two feet on either side of the normal roadway width of 24 feet. Open end or spill through type abutments are recommended. The cost has been estimated by determining the number of square feet in each bridge structure and applying an allowance of $16 per square foot.

(7) *Traffic Aids* — Under this heading, there have been included the various items added to the construction, which protect, guide, or otherwise assist the motorist in the enjoyment of his trip. These include guard rails, right-of-way fencing, directional and warning signs, traffic signals on the existing streets at the intersection of the diamond ramps where required, highway markings, expressway and interchange illumination, and landscaping. Guard rails were estimated at $3.50 per lineal foot and this price was applied to the quantity required as determined from the plan and profile sheets. The values recommended in the Florida Road Department's Manual on the Preparation of Cost Estimates for the Completion for the Interstate System were followed in preparing estimates of the cost of fencing the right-of-ways. It was assumed that the full length of the project would be fenced on both sides and that cyclone type fence would be used on the urban sections where extensive development has taken place. It was assumed that one-half of the total length of this six-mile project would require the cyclone type fence on both sides at an estimated cost of $50,000 per mile, while the remaining distance would require rural type fencing at $1,500 per mile. The estimates for signs and markings were made on a lump sum basis after considering the individual characteristics of the particular interchanges involved. The extensive current experience of this firm in developing these traffic aids on major toll routes in the East and Midwest was utilized in this estimate. The cost of providing illumination for the various sections of the project was determined on the basis of illuminating all of the interchanges and the expressway sections where the most intensive urban developments have occurred or are anticipated. For landscaping, an average of $3,000 per mile was included in the estimate. This reflects the suggestion of the aforesaid Florida Road Department recommendations.

Engineering and Contingencies

An allowance of 10 per cent of the preliminary construction cost estimate has been added to cover construction engineering, additions and possible price increases. An al-

lowance of approximately 4 per cent of the total estimated construction cost has been made for the surveys and engineering in connection with the preparation of the right-of-way and contract plans.

Cost Summary

The recommended route has been divided into two sections for computation of cost and programming. The first section commences west of the State Route 20 crossing, and extends across the Dale Mabry Municipal Airport property and the undeveloped areas lying northeast of the Airport to terminate at the Lipona Road intersection. This route is referred to as the West Section.

The second, or East Section, extends from the Lipona Road intersection through the Magnolia Drive interchange area. It does not include the two direct ramp connections between the Interstate Route and U. S. Route 27 located approximately a half-mile east of Magnolia Drive. These connections are not included because of the inability to predict the location of the Interstate Route to the east at this time. The position of control points to the east will exert considerable influence on the location and design of this section.

It was not deemed advisable to attempt to finalize a design or the definite location of the route in the Dale Mabry Municipal Airport area until more substantial plans are prepared for the industrial re-development of this area. The type and size of the industrial plants will, of course, control the employment and amount of traffic generation. These factors should govern to a considerable extent the location and design of the interchange facilities. The actual location of the route might also be considerably influenced by the type and size of the industries located in this area.

Detailed estimates of costs made in accord with the requirements of the Bureau of Public Roads[19] for the two sections of the route are presented in Table XXI. As shown, it is estimated that the West and East Sections will cost approximately $1,765,000 and $9,681,000, respectively.

[19]Instruction Manual or Preparation and Submission of a Detailed Estimate of the Cost of Completing the Interstate System, October, 1956; U. S. Department of Commerce, Bureau of Public Roads.

TABLE XXI

ESTIMATED SOUTH CENTRAL LINE COSTS

Items	*West Section*[1]	*East Section*[2]	*Total*
1. Preliminary Engineering	$ 65,000	$ 295,000	$ 360,000
2. Right-of-Way	60,000	2,205,000	2,265,000
3. Clear and Grub; Demolition	13,000	37,000	50,000
4. Utility Adjustments	5,000	45,000	50,000
5. Grade and Drain; Minor Structures	299,000	842,000	1,141,000
6. Base; Surfacing; Shoulders	458,000	658,000	1,116,000
7. Railroad Grade Separations	130,000	400,000	530,000
8. Highway Grade Separations Without Ramps	—	575,000	575,000
9. Interchanges, Complete	450,000	1,145,000	1,595,000
10. Other Bridges; Tunnels	—	2,355,000	2,355,000
11. Walls	—	—	—
12. Guardrail; Fencing; Lighting; Traffic Control	129,000	440,000	569,000
13. Roadside Improvement	7,000	11,000	18,000
14. All Other Items	—	20,000	20,000
15. Subtotal; Lines (3 thru 14)	$1,491,000	$6,528,000	$ 8,019,000
16. Construction Engineering and Contingencies (10 Per Cent)	149,000	653,000	802,000
17. Total Construction Costs	$1,640,000	$7,181,000	$ 8,821,000
TOTAL ESTIMATED COSTS	$1,765,000	$9,681,000	$11,446,000

[1]West of State Route 20 to Lipona Road.

[2]Lipona Road to Magnolia Drive Area.

Program

Because of its length and importance as a segment of the National System of Interstate and Defense Highways, it does not appear that a stage development of the route will be required. It is recommended, however, that the final design of the East Section which extends from Lipona Road through the Magnolia Drive intersection be initiated immediately, and that construction be commenced as early as possible.

The final determination of both the eastern and western extensions should be made in the near future. In this connection, collaboration of the city and civic leaders in determining the location through the Airport property is essential in planning the extension of the route to the west.

It is believed that the recommended route will provide maximum service and minimum physical and economic disturbance to the area through which it will pass. It is hoped, therefore, that the entire route can be constructed at an early date.

Plan and profile sheets for the recommended route are subsequently presented.

Chapter XI
RELATED TRAFFIC IMPROVEMENTS

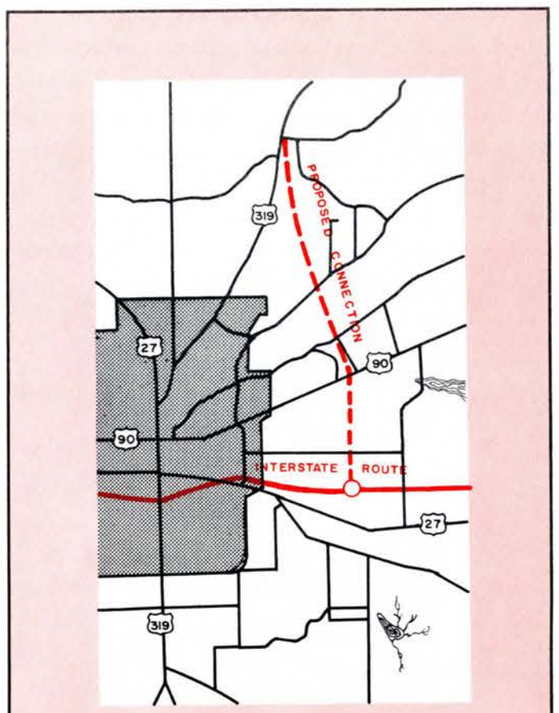
The traffic handling capability of the local streets of Tallahassee has been the subject of a comprehensive investigation by the Traffic Division of the Florida Road Department for the past several months. Consequently, the matter of local street improvements was not included within the scope of this report when it was commissioned, so only a minimum of material on the subject has been assembled. However, certain desirable adjuncts to the expressway became apparent during the development of this report, and it is the purpose of this section to briefly comment on these findings.

East By-Pass

Outside of the location of the expressway itself, the most important conclusion developed was the recognition of a need for an additional facility to handle certain north-south movements. This is especially true of the movement of petroleum products from St. Marks — a gulf port located 18 miles south of Tallahassee, to the large marketing area more or less centered around Atlanta, Georgia. St. Marks is the principal point of transfer of oil from the ocean tankers to the highway tankers which provide the bulk of the land transport for this commodity in this area.

These vehicles must move into western Georgia via U. S. Route 319, which passes north-south through the heart of Tallahassee. This means that loaded northbound vehicles must climb the steep and, for this part of the country, long grade up Monroe Street from the Seaboard Air Line Railroad underpass to Pensacola Street. Both loaded and returning empty tankers add to the traffic congestion in the central business district.

At First Avenue, U. S. Route 319 turns off Monroe Street onto the Thomasville Road which extends northeasterly to the Georgia line. Thus, U. S. Route 319 turns an angle of about 30 degrees near the center of the City, and this fact of geography offers the opportunity of diverting the oil traffic from the center of the city with little appreciable distance penalty, by the provision of a north-south connection between the new Interstate Route and the northern leg of U. S. Route 319 a short distance east of the city.



RECOMMENDED
EAST CONNECTOR
TALLAHASSEE, FLORIDA
FIGURE 44

Such a connection to serve as a partial periphery road is strongly endorsed and recommended. Since little detailed examination of the terrain east of the city limits or north of the Centerville Road was possible due to a lack of suitable aerial photographic coverage, the location of the recommended connection cannot be other than generally indicated. Figure 44 shows a possible location which would begin at the Interstate location approximately a mile and a half east of Magnolia Drive and extend northerly to pass east of the W. T. Edwards Tuberculosis Hospital grounds and connect to U. S. Route 319 at some appropriate point south of the State Park.

It is recommended that sufficient right-of-way be acquired for this facility so that a limited access

highway can be constructed. In this way, future roadside development can be adequately controlled. Sufficient traffic volumes to justify more than the construction of a two-lane at-grade type of highway cannot be foreseen. The grade separations and frontage roads utilized for the usual limited access facilities should not be needed for this road in the near future. Obviously, a separation structure to eliminate conflict potentials must be constructed at the intersection where the proposed new by-pass highway departs from the Interstate Route. All other major highway crossings could be controlled initially with conventional traffic control devices.

Other Improvements

Other traffic improvements needed as adjuncts to the expressway are all minor and have elsewhere been referred to in the text or functional plans. These include the frontage roads shown on the several functional plan sheets; the designation of Bloxham Street as a one-way westbound roadway; and the construction of a missing segment of roadway between Bronough and Boulevard Streets along the proposed northern boundary of the expressway right-of-way.

An additional improvement not specifically shown on the functional plan might prove desirable after the expressway is constructed and the proposed one-way street system is inaugurated. This would involve construction of an eastbound service road on the south side of the expressway to connect the collector road at Monroe Street to Gadsden Street. The necessity for this frontage road is dependent to some extent upon the further implementation of the Capitol Center Plan and upon the future success of the proposed one-way street system.

Summary

The segment of Interstate Highway proposed, when complemented and supplemented by the major street improvements presently being studied by the State Road Department, should provide the Metropolitan Area of Tallahassee with an excellent street system adequate to meet the traffic needs of the future. It is recognized that the scope of the proposed improvements is of considerable magnitude; however, it is readily apparent that a long range plan of improvements must be undertaken. The immediate approval of a programmed arterial street plan which will permit the establishment of adequate setback requirements and priorities of improvement cannot be over emphasized.

In conjunction with the improved major street and expressway system, other improvements in traffic services must be carefully integrated if full benefit is to be derived. The proposed Interstate Route, Apalachee Trail, and other street improvements will have noticeable effects on travel patterns, particularly in movements to and from the central business district. The improved accessibility to the central area and the attraction of additional motorists will necessitate a planned program of adequate terminal facilities.

Serious consideration should be given to the development of additional off-street parking facilities which should be closely integrated with the over-all improvement plans.

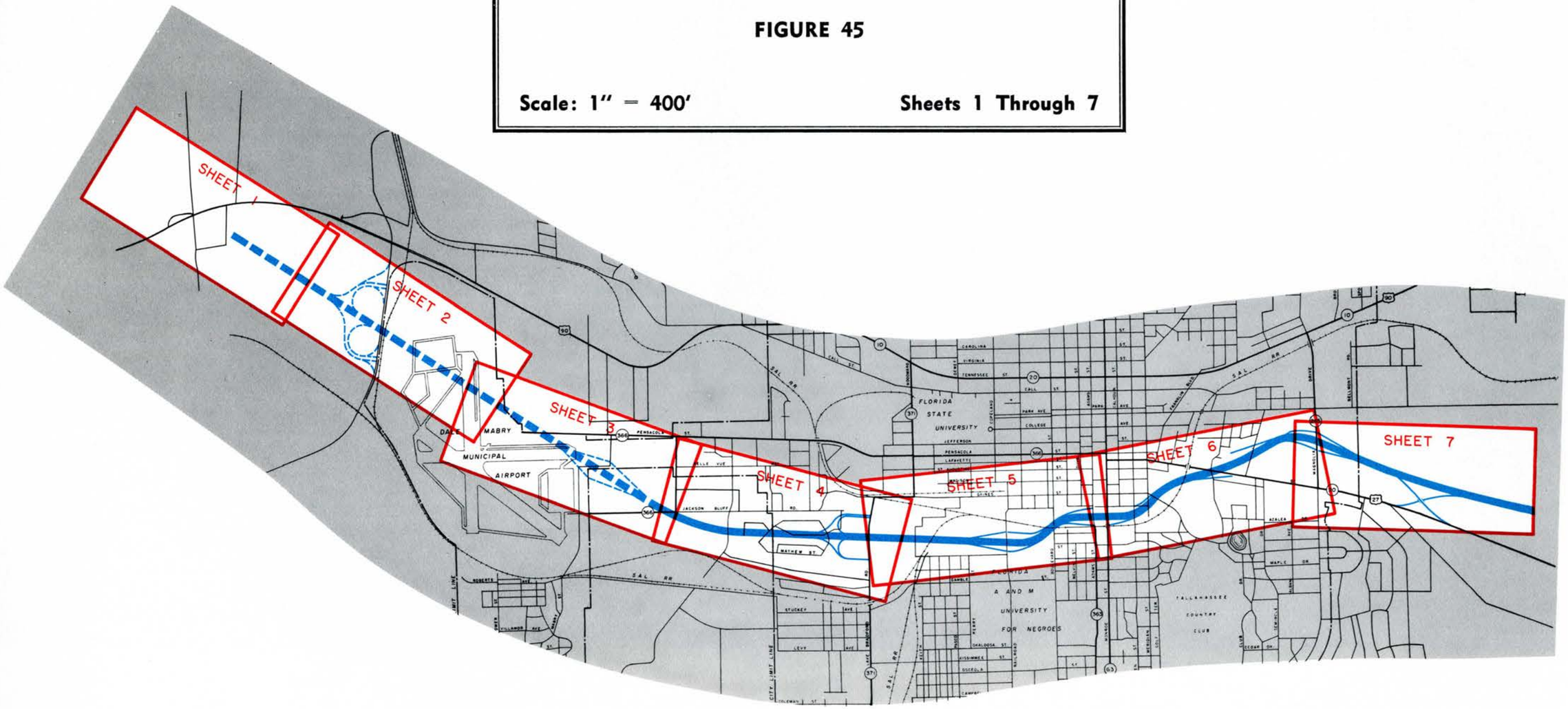
CHAPTER XII

FUNCTIONAL PLAN

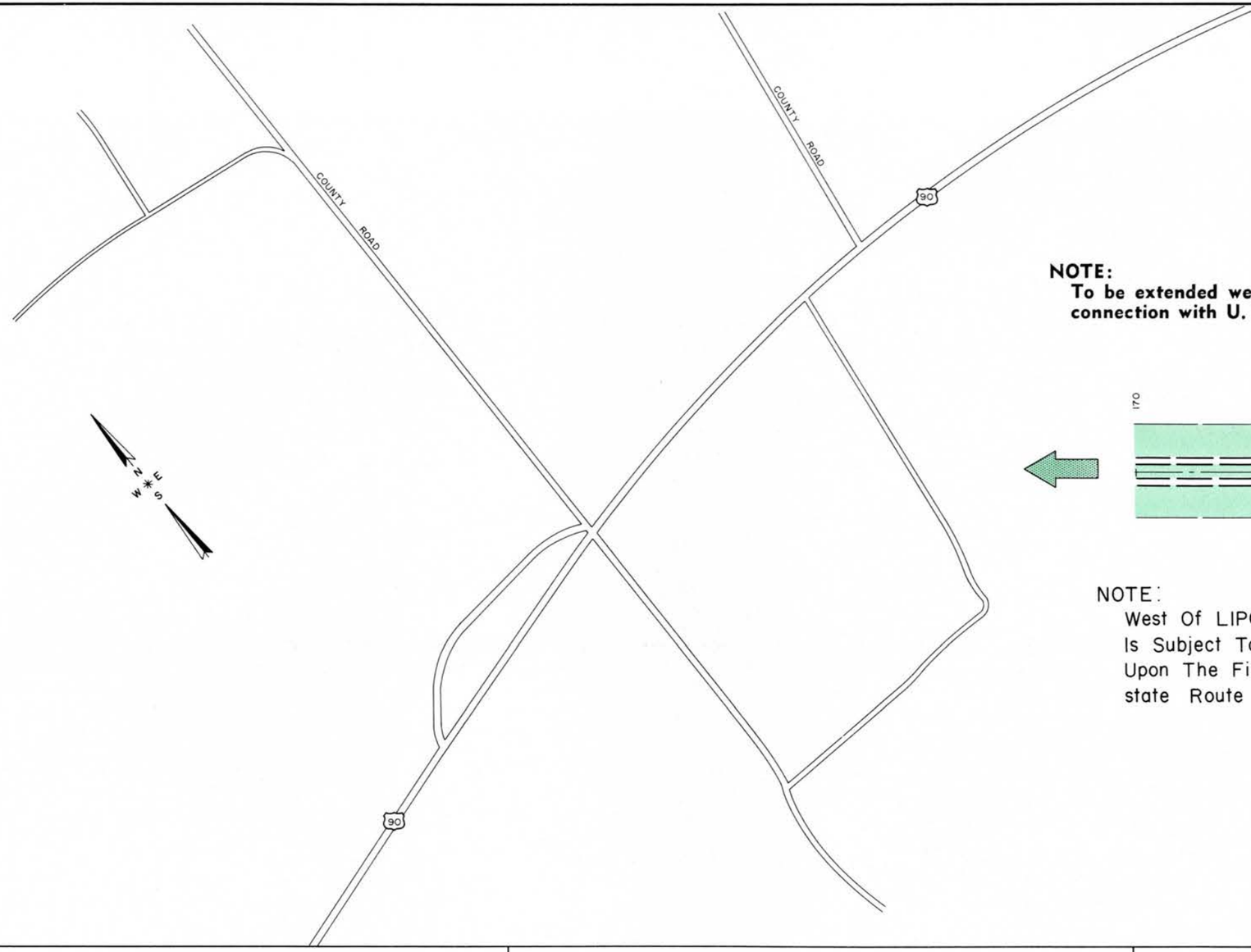
RECOMMENDED INTERSTATE ROUTE

FIGURE 45

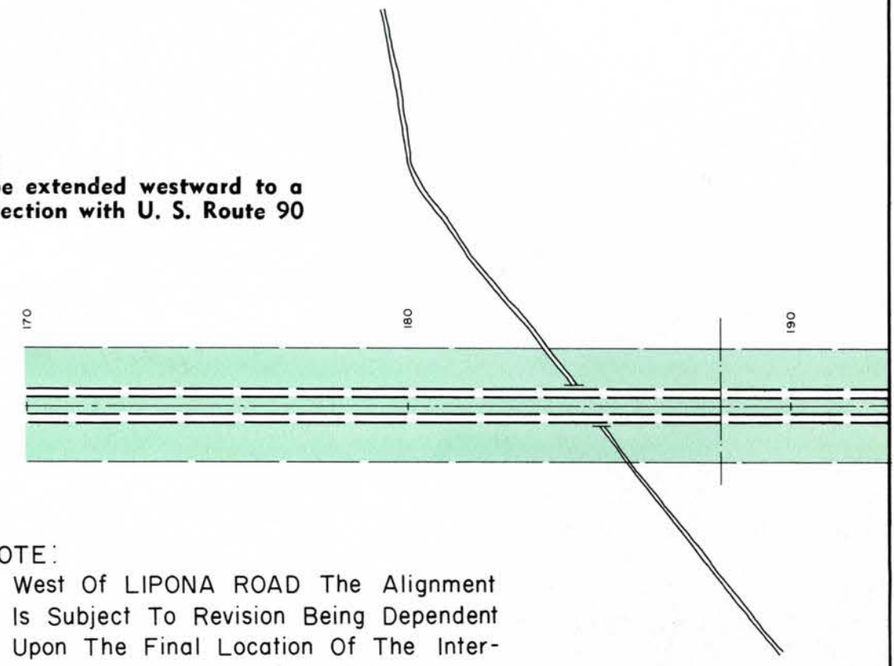
Scale: 1" = 400' Sheets 1 Through 7




U. S. ROUTE 90
NOTE
West Of LIPONA ROAD The Alignment Is Subject To Revision Being Dependent Upon The Final Location Of The Interstate Route West Of Tallahassee.



NOTE:
To be extended westward to a connection with U. S. Route 90



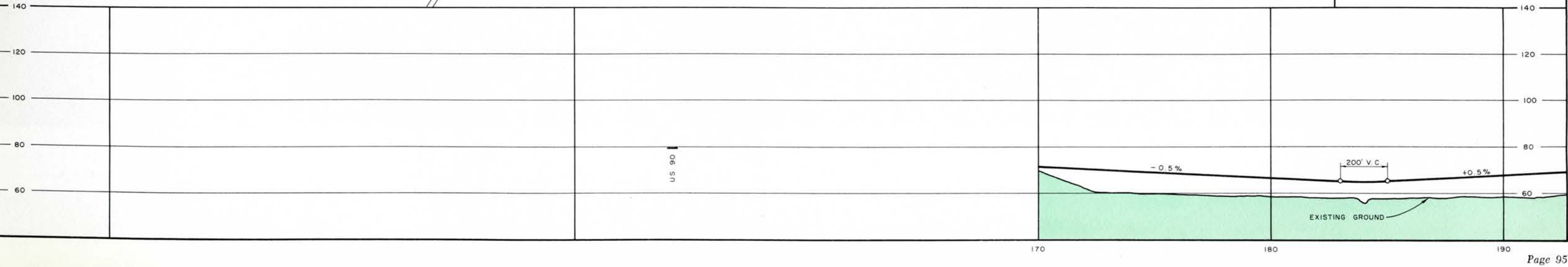
NOTE:
West Of LIPONA ROAD The Alignment Is Subject To Revision Being Dependent Upon The Final Location Of The Interstate Route West Of Tallahassee.

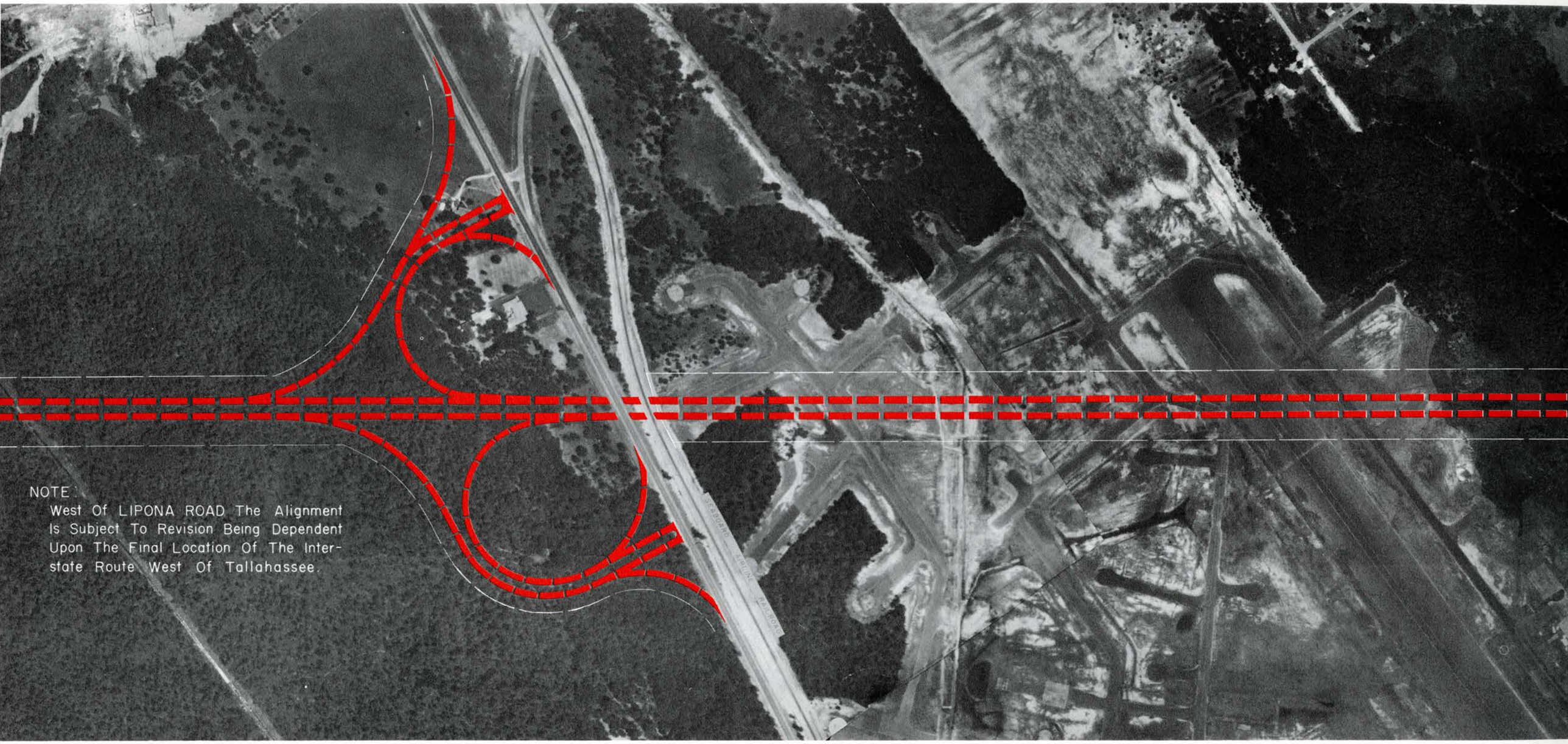
FUNCTIONAL PLAN

INTERSTATE ROUTE

Scale: 1" – 400' **Sheet 1 of 7**

Wilbur Smith and Associates




NOTE:
West Of LIPONA ROAD The Alignment
Is Subject To Revision Being Dependent
Upon The Final Location Of The Inter-
state Route West Of Tallahassee.

NOTE:

West Of LIPONA ROAD The Alignment Is Subject To Revision Being Dependent Upon The Final Location Of The Interstate Route West Of Tallahassee.

190 200 210 220 230 240 250

SEABOARD AIRLINE RAILROAD

20

N E S W

TALLAHASSE MUNICIPAL AIRPORT

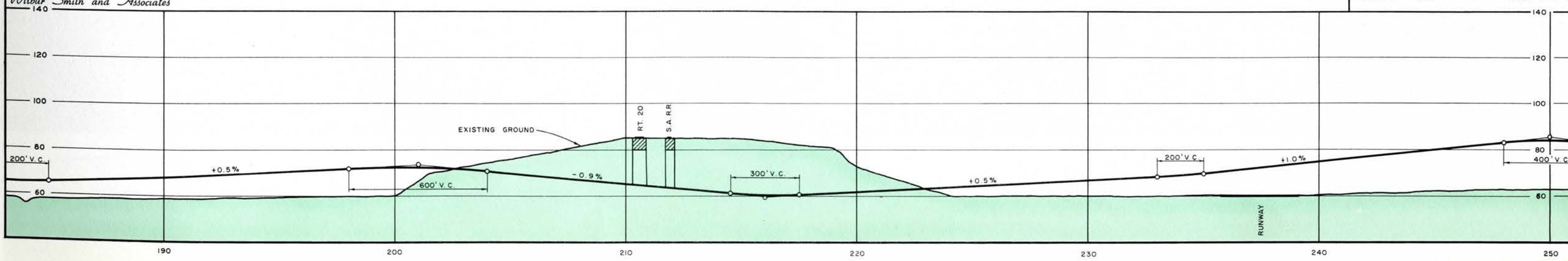
FUNCTIONAL PLAN

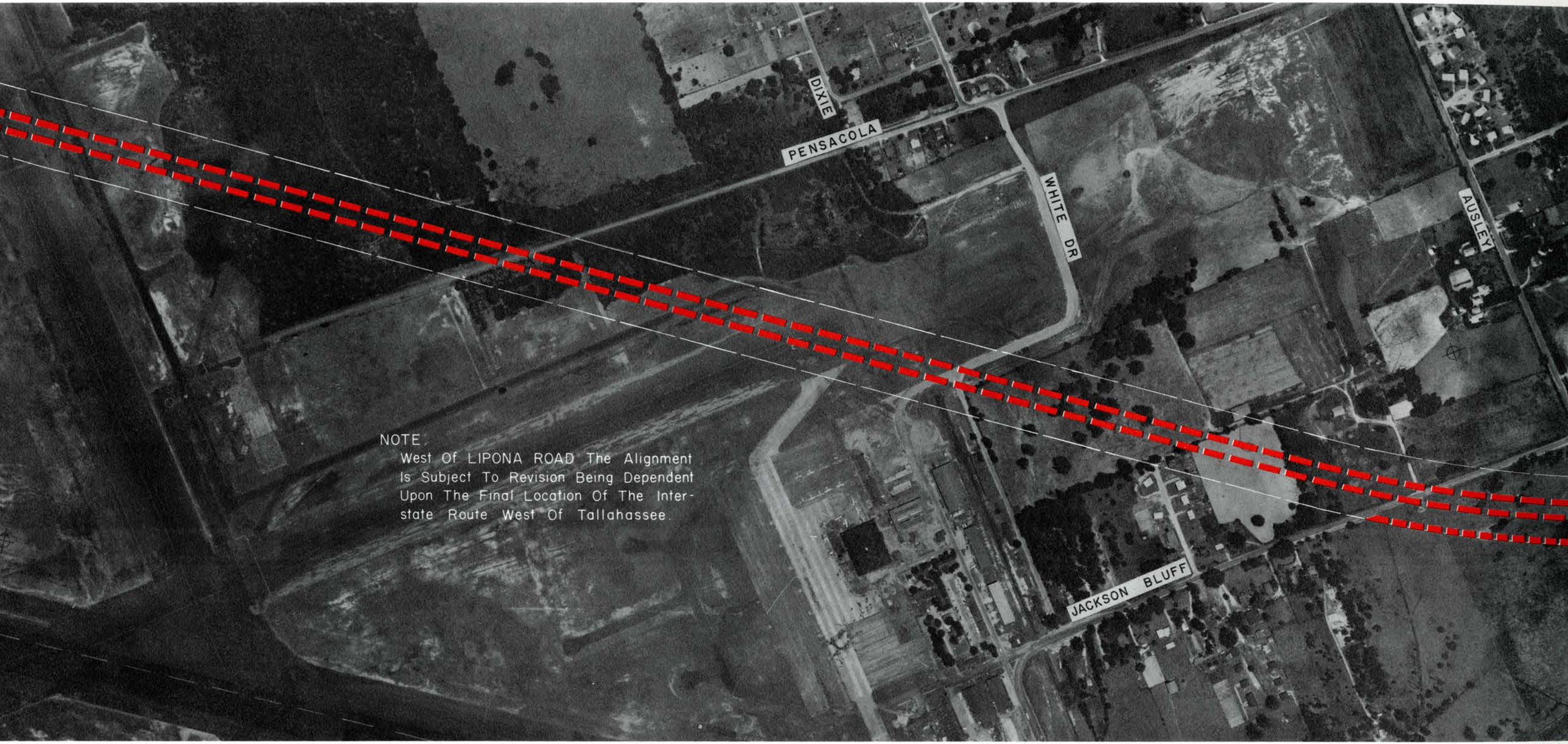
INTERSTATE ROUTE

Scale: 1" – 400'

Sheet 2 of 7

Wilbur Smith and Associates




DIXIE
PENSACOLA
WHITE DR
AUSLEY
JACKSON BLUFF
NOTE:
West Of LIPONA ROAD The Alignment Is Subject To Revision Being Dependent Upon The Final Location Of The Interstate Route West Of Tallahassee.

NOTE:
FUTURE INTERCHANGE TO BE PROVIDED AS REQUIRED BY AIRPORT REDEVELOPMENT

NOTE:
West Of LIPONA ROAD The Alignment Is Subject To Revision Being Dependent Upon The Final Location Of The Interstate Route West Of Tallahassee.

DIXIE DRIVE
WHITE DRIVE
PENSACOLA STREET
366
WHITE DRIVE
BELLE VUE WAY
MABRY STREET
JACKSON BLUFF ROAD
TALLAHASSEE MUNICIPAL AIRPORT
240
250
260
270
280
290
300
P C STA 294+96
D = 1° - 00'

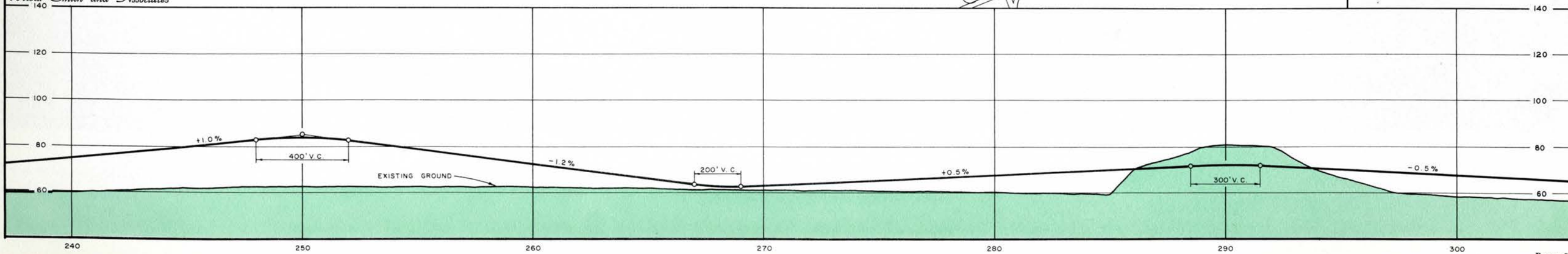
FUNCTIONAL PLAN

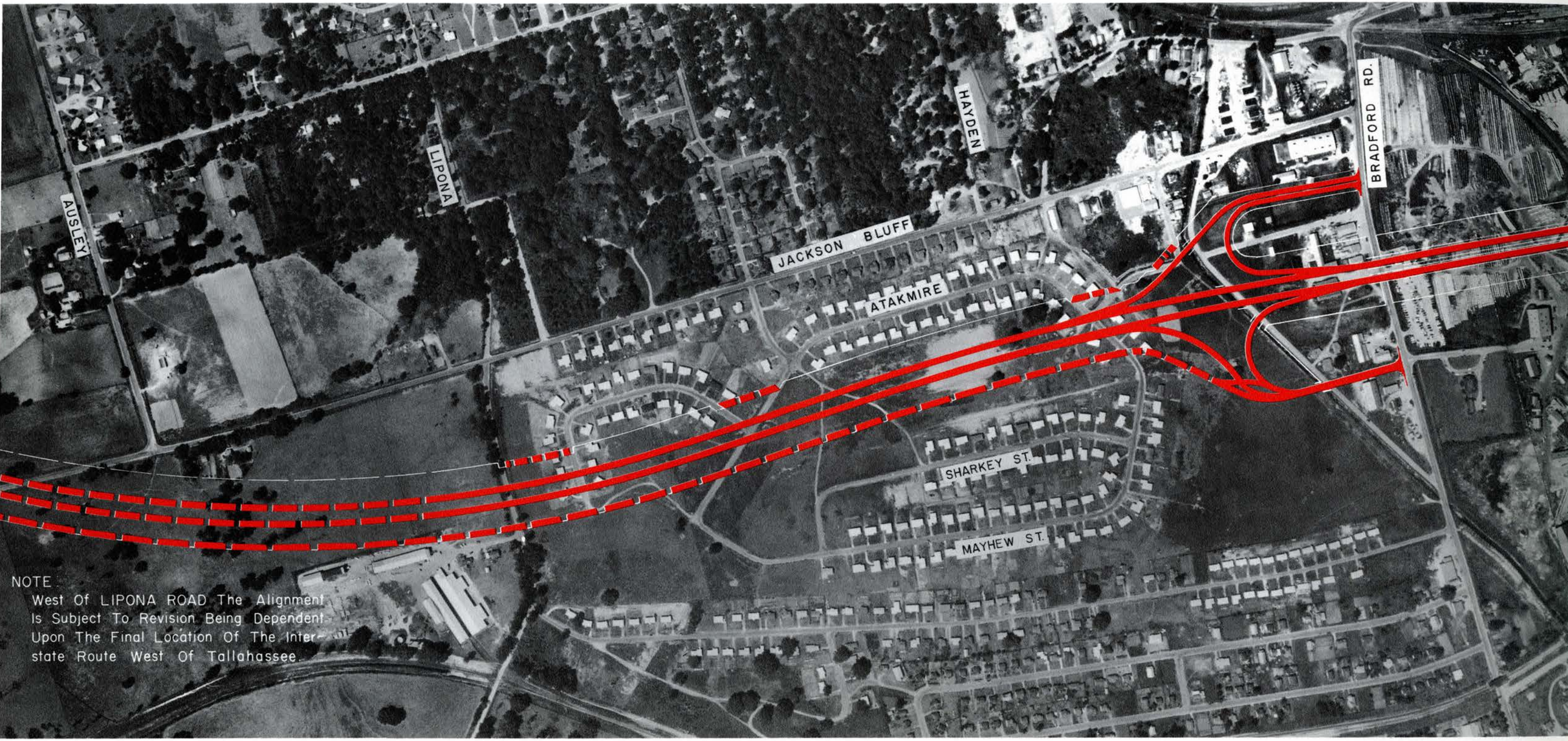
INTERSTATE ROUTE

Scale: 1" = 400'

Sheet 3 of 7

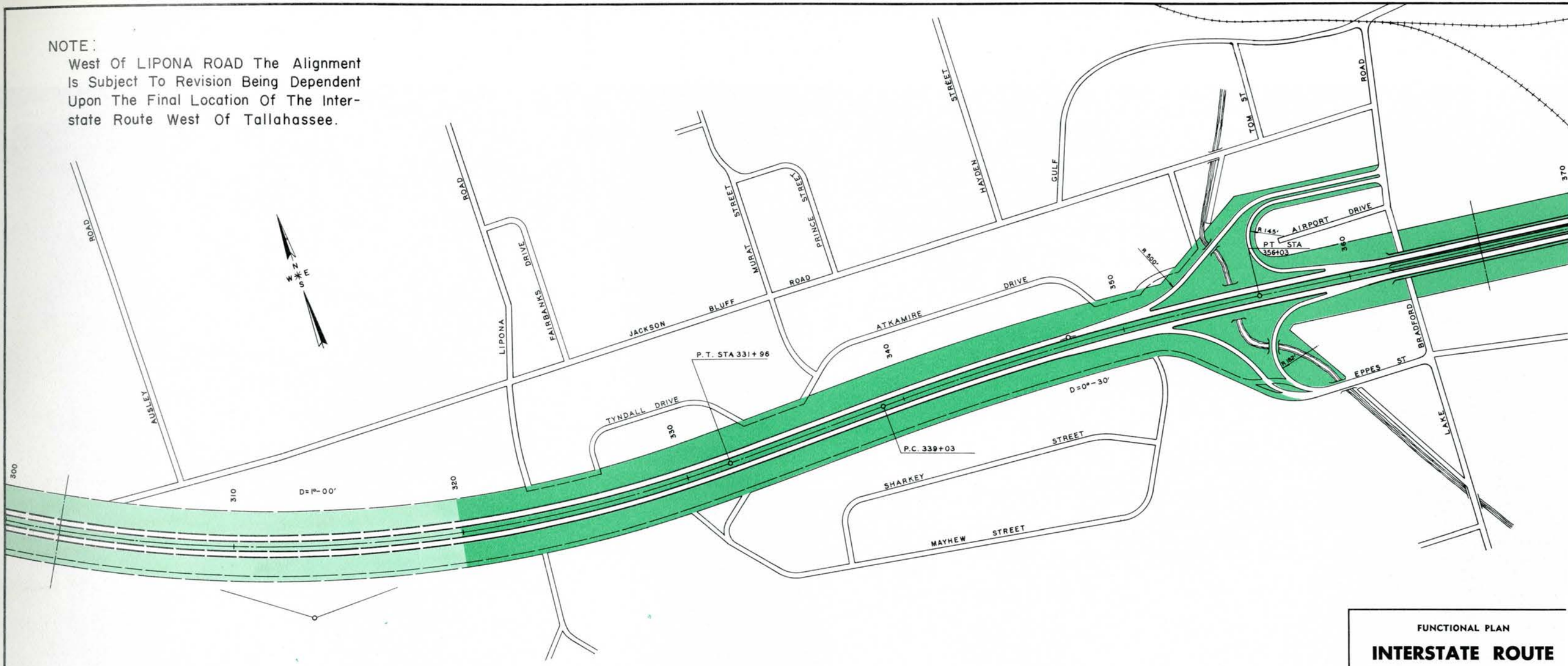
Wilbur Smith and Associates




AUSLEY
LIPONA
JACKSON BLUFF
HAYDEN
ATAKMIRE
BRADFORD RD.
SHARKEY ST.
MAYHEW ST.
NOTE:
West Of LIPONA ROAD The Alignment
Is Subject To Revision Being Dependent
Upon The Final Location Of The Inter-
state Route West Of Tallahassee.

NOTE:

West Of LIPONA ROAD The Alignment Is Subject To Revision Being Dependent Upon The Final Location Of The Interstate Route West Of Tallahassee.



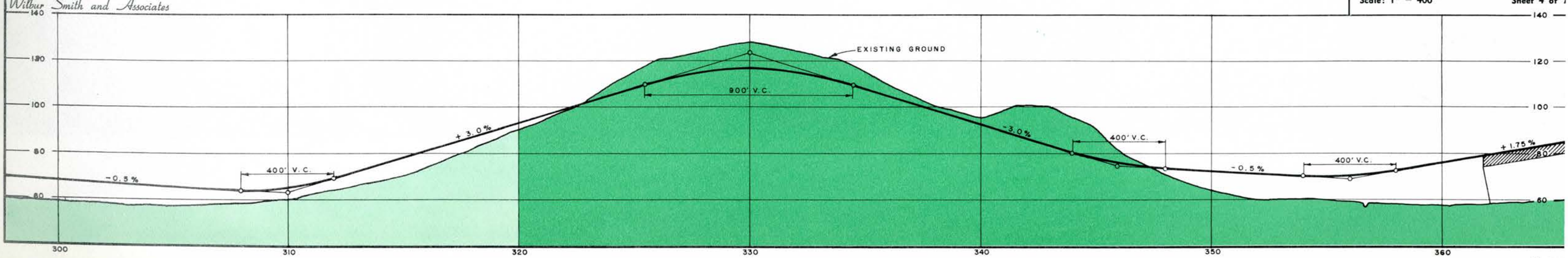
FUNCTIONAL PLAN

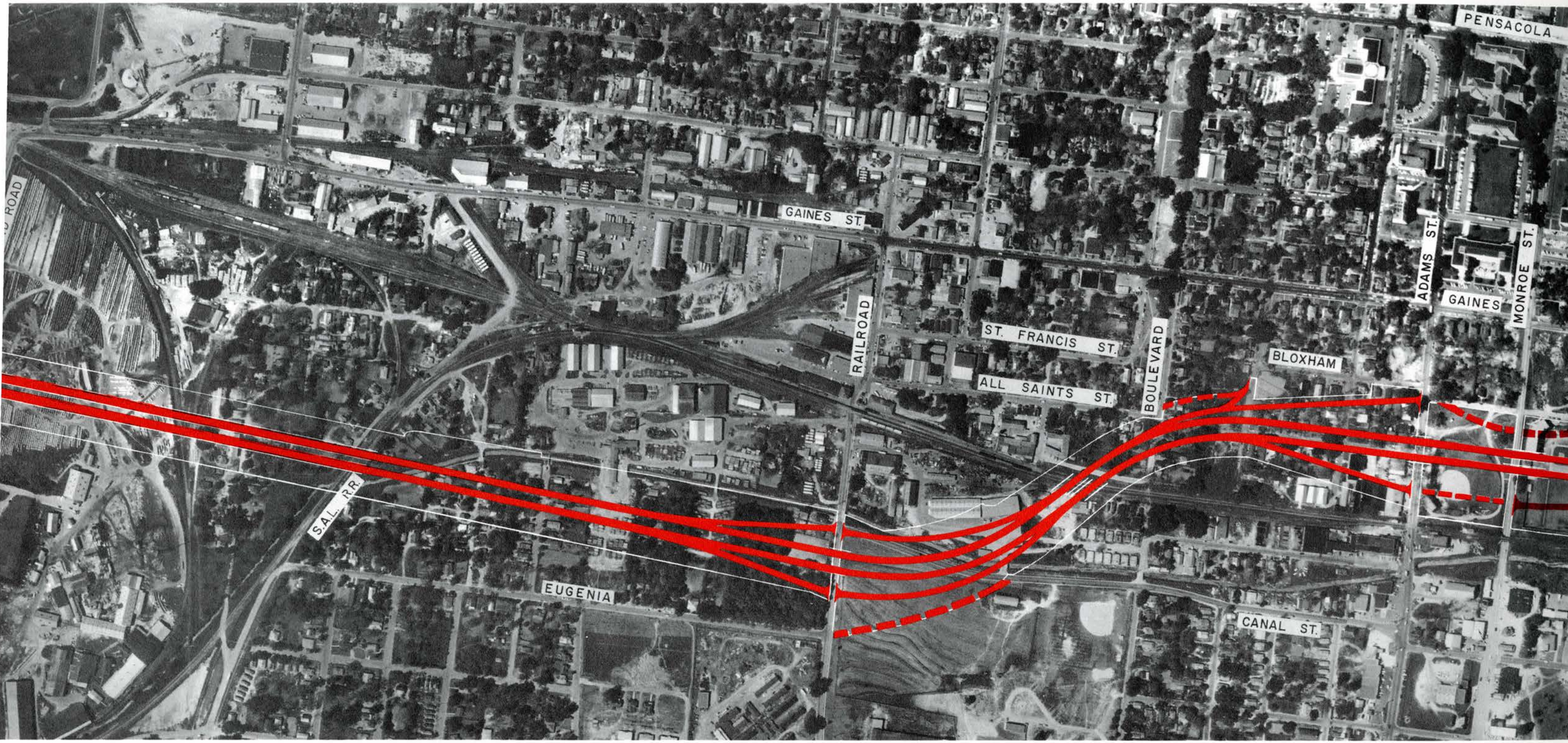
INTERSTATE ROUTE

Scale: 1" – 400'

Sheet 4 of 7

Wilbur Smith and Associates




PENSACOLA
GAINES ST.
RAILROAD
ST. FRANCIS ST.
ALL SAINTS ST.
BOULEVARD
BLOXHAM
ADAMS ST.
GAINES
MONROE ST.
S.A.L. R.R.
EUGENIA
CANAL ST.

GAINES ST.
BRADFORD RD
LAKE
RAILROAD
SEABOARD AIR LINE
370
380
390
400
410
420
430
CHANGE CHANNEL FLOW
CANAL
RAILROAD AVE.
D=6°-00'
PT STA 410+01
P.C. STA 402+01
CHANGE CHANNEL FLOW
D=6-00'
PT STA 421+46
P.C. STA 414+13
PROPOSED FRONTAGE RD
PROPOSED COLLECTOR RD
MADISON ST.
GAINES ST.
ST FRANCIS ST.
ALL SAINT ST.
MACOMB ST
BOULEVARD
BRONOUGH
DUVAL
ADAMS
MONROE
VAN BUREN ST.
CANAL ST.
OAKLAND AVE
HARRISON
MELVIN ST
BRONOUGH ST
BOULEVARD ST
SEABOARD AIR LINE
EUGENIA ST.
WAILES ST
DISSTON ST
RUSSEL ST
CLEVELAND ST
PINELLAS ST
PERRY ST

FUNCTIONAL PLAN

INTERSTATE ROUTE

Scale: 1" – 400' Sheet 5 of 7

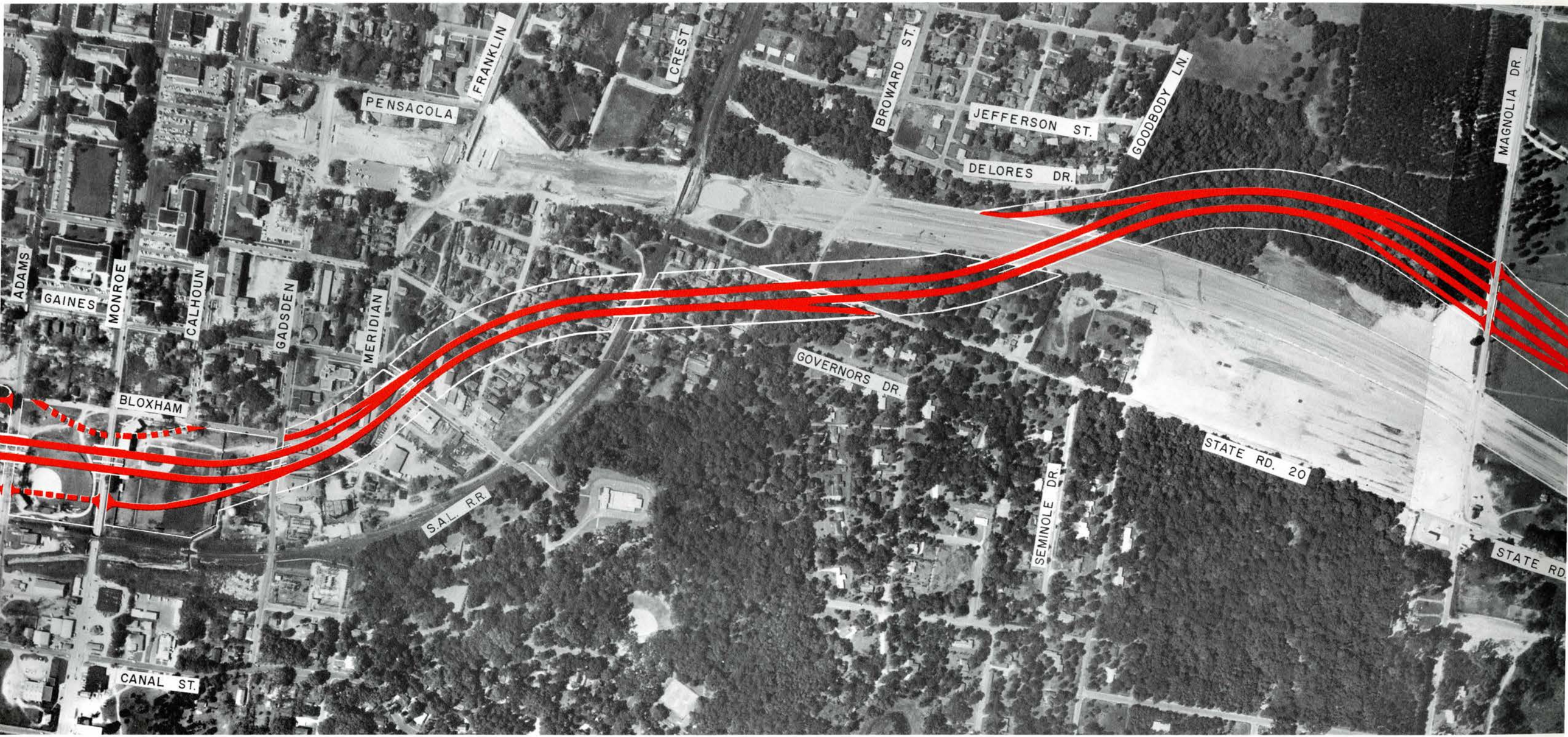
Wilbur Smith and Associates

160
140
120
100
80

+1.75%
400' V.C.
+0.8%
400' V.C.
-1.0%
400' V.C.
250' V.C.
-4.0%
200' V.C.
300' V.C.
+0.3%
200' V.C.
+5.0%
+1.1%
300' V.C.
200' V.C.
200' V.C.
300' V.C.
+0.5%
-0.20%
-0.82%
-4.7%
0.00%
250' V.C.
250' V.C.

EXISTING GROUND
S.A.L.
S.A.L.
RAILROAD AVENUE
S.A.L. R.R.
ADAMS ST

370 380 390 400 410 420 430


PENSACLA
FRANKLIN
CREST
BROWARD ST.
JEFFERSON ST.
GOODBODY LN.
MAGNOLIA DR.
DELORES DR.
ADAMS
GAINES
MONROE
CALHOUN
GADSDEN
MERIDIAN
BLOXHAM
GOVERNORS DR.
STATE RD. 20
S.A.L. R.R.
SEMINOLE DR.
STATE RD
CANAL ST.

STATE CAPITOL

MADISON STREET

ADAMS STREET

MONROE STREET

CALHOUN STREET

GADSDEN STREET

MERIDIAN STREET

SUWANEE STREET

ST AUGUSTINE ST

ST AUGUSTINE STREET

LAFAYETTE STREET

GAINES STREET

BLOXHAM STREET

VAN BUREN STREET

OAKLAND AVENUE

PROPOSED COLLECTOR ST

P C STA 435+79

PT STA 445+39

P C STA 447+52

D=5°-00'

D=4°-00'

MYERS PARK

RAILROAD

S A L

MYERS SWIMMING POOL

MYERS PARK DRIVE

PT STA 456+27

STA 469+39

P C STA 479+57

PT STA 473+77

PT STA 493+22

APALACHEE TRAIL

BROWARD STREET

JEFFERSON STREET

DELORES DRIVE

GOODBODY LANE

APALACHEE FRONTAGE ROAD

LAFAYETTE ST.

GOVERNORS DRIVE

PARK DRIVE

MERRITT

MYERS

CARLTON

STOUTAMIRE

HOLLAND DRIVE

SEMINOL DRIVE

MAGNOLIA DRIVE

N
W E
S

FUNCTIONAL PLAN

INTERSTATE ROUTE

Scale: 1" – 400'

Sheet 6 of 7

Wilbur Smith and Associates

+0.50%

400 V.C.

GRADE LINE OF WEST BOUND LANE

-0.82%

-0.80%

-0.20%

GRADE LINE OF EAST BOUND LANE

0.00%

+0.23%

6.00%

EAST BOUND ON RAMP

-4.10%

COLLECTOR ST

REVISED GRADE LINE OF BLOXHAM STREET

ADAMS ST

MONROE ST

-1.00%

700' V.C.

+4.70%

+3.70%

EXISTING GROUND

GADSDEN ST

MEYERS PARK DR

S A L RR

300' V.C.

320' V.C.

2.50%

400' V.C.

-4.00%

2.30%

LAFAYETTE ST

+4.84%

100' V.C.

+5.80%

U.S.HWY NO 27

300' V.C.

270' V.C.

-1.10%

300' V.C.

500' V.C.

EXISTING GROUND

180

160

140

120

100

80

430

440

450

460

470

480

490

APPENDIX

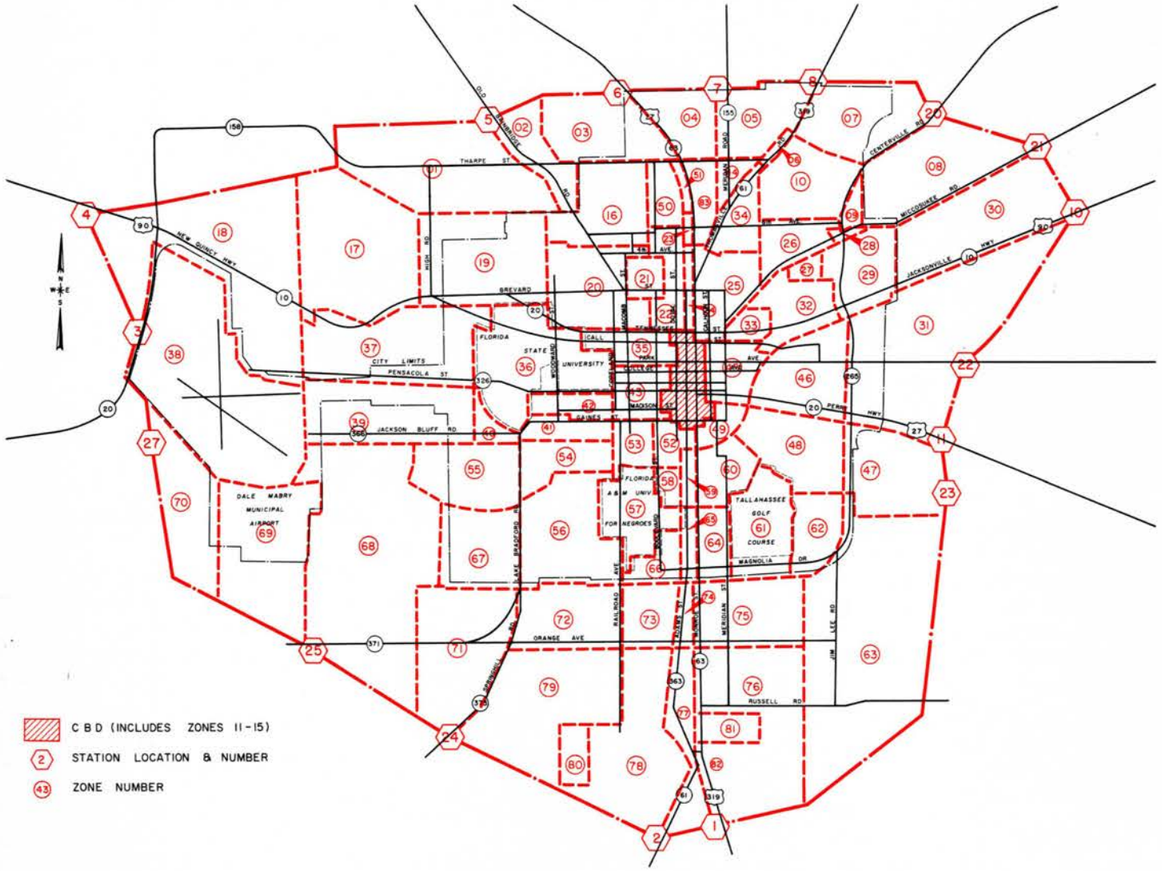
A – Zone Maps

B – Statistical Forecast

C – Interstate Design Standards

D – Origin and Destination Data

Appendix A
ZONE MAPS

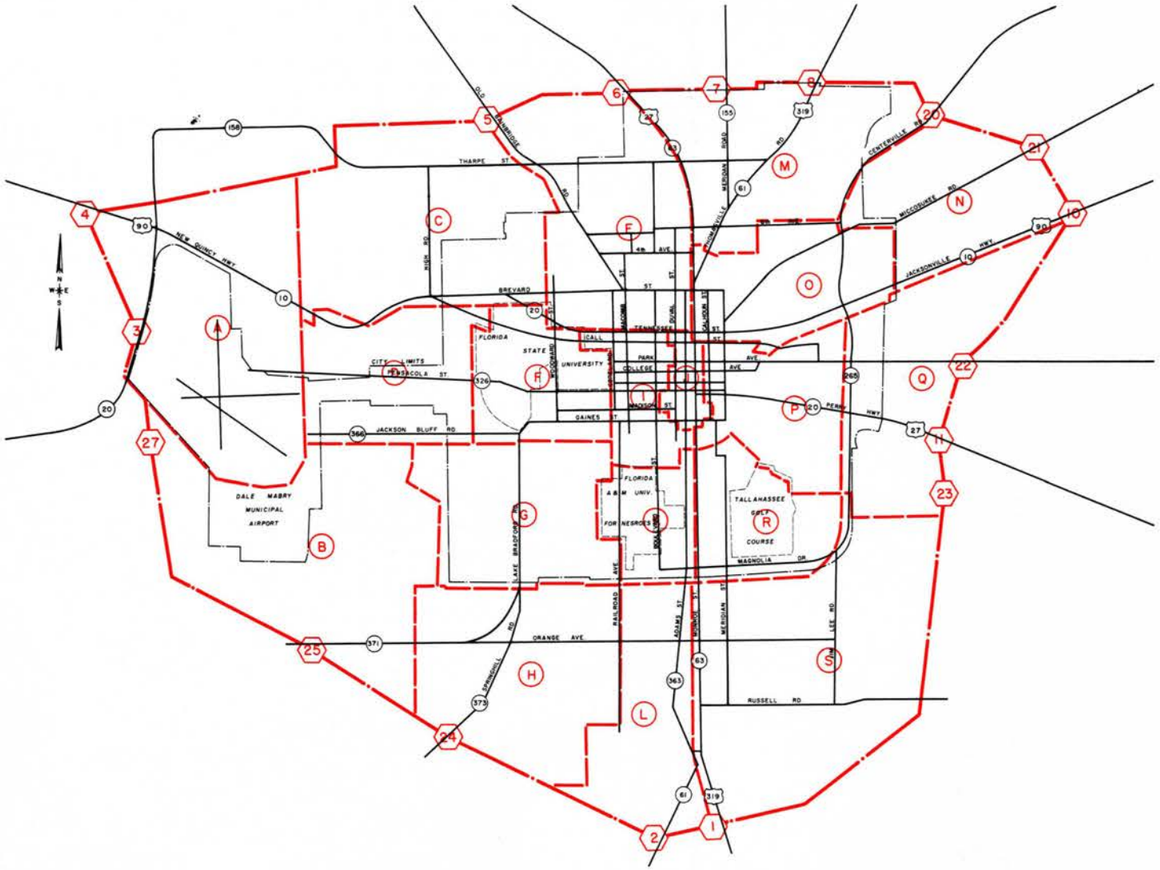


ORIGIN AND DESTINATION ZONE MAP

TALLAHASSEE , AREA
1957

Wilbur Smith and Associates

FIGURE A



ORIGIN AND DESTINATION ZONE MAP BY DISTRICT

TALLAHASSEE , AREA
1957

Wilbur Smith and Associates

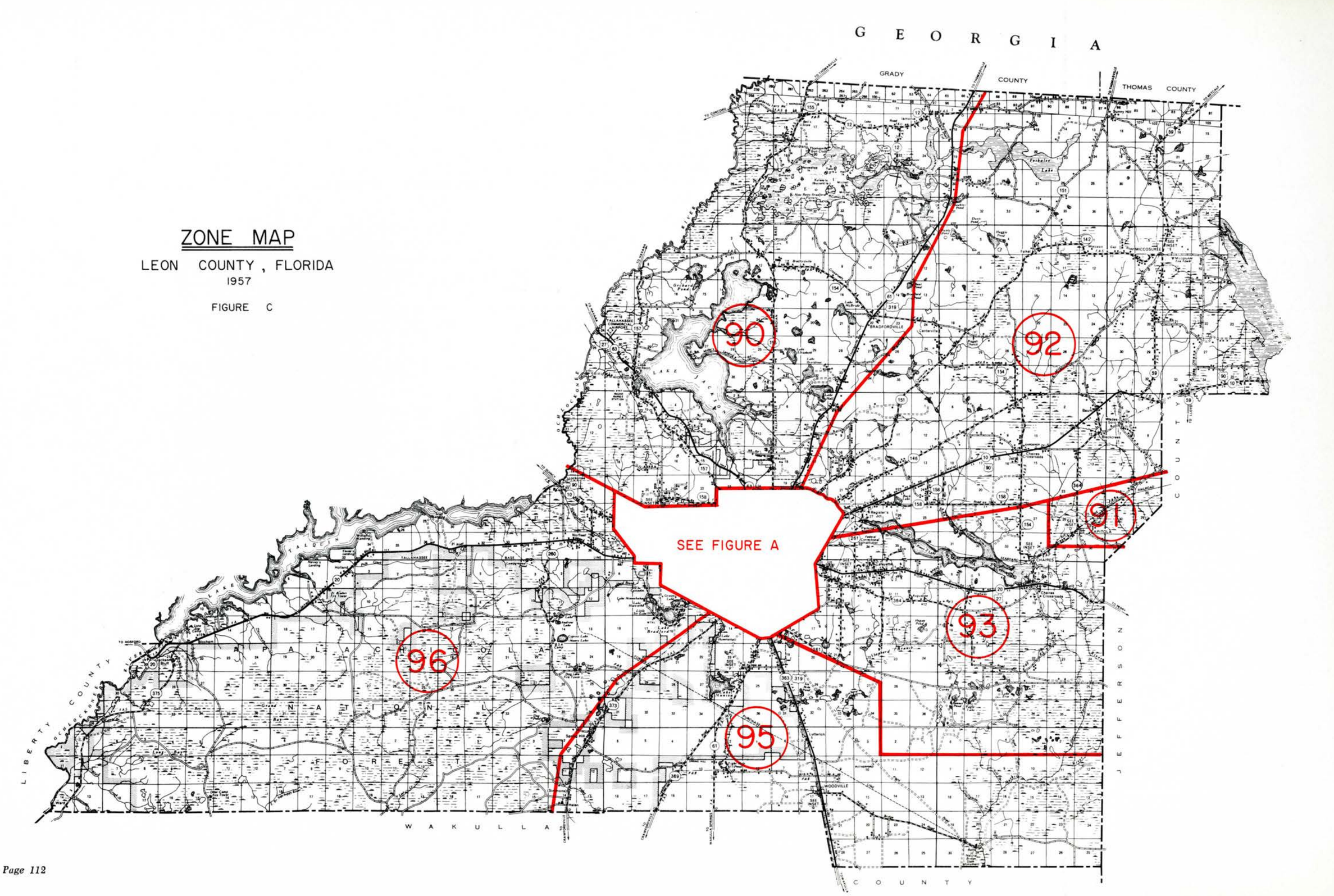
FIGURE B

ZONE MAP

LEON COUNTY, FLORIDA

1957

FIGURE C



Appendix B
STATISTICAL FORECAST

EXCERPTS FROM A REPORT PREPARED FOR WILBUR SMITH AND ASSOCIATES BY TRAFFIC AND TRADE, INCORPORATED, NEW HAVEN, CONNECTICUT.

TALLAHASSEE AND LEON COUNTY
By O. and D. Zones of the 1957 Traffic Survey

Introduction — The attached tables report population, dwelling units, labor force, retail sales, and passenger car and light truck registrations for the individual origin and destination zones used in the 1957 Traffic Study of Tallahassee

Statistics are given for the year 1956, and a forecast for 1975. The O. and D. Zones of 1957 are identified with the Central Business District, the City and the rest of the County, as explained in the attached Table, "Codes - Tallahassee Statistics". The zone figures are summarized by these divisions at the end of each Table.

The statistics reported are estimates, based on all available sources. The data for individual zones are presented in unrounded form only for convenience of processing, not as a measure of precision.

All projected figures have been mutually reconciled to fit a logically inter-related 1975 statistical structure.

Sources of Data

1. Published statistics of the U. S. Bureau of the Census for 1948, 1950 and 1954.
2. Unpublished statistics of retail sales, based on sales tax records for the years 1950 to 1956.
   The 1956 records were tabulated by the O. and D. zones in Tallahassee and Leon County.
   Summary records of real estate tax collections.
3. Traffic Study of 1957; system of O. and D. Zones; Tabulation of Buildings; car and truck trip volumes.
4. Motor Vehicle Registration List of Leon County for 1956. Summary of statistics since 1950.
5. Commercial statistical publications, including Polk's Directory of Leon County and Sales Management's "Survey of Buying Power", for the years 1950 to 1956.
6. Maps — County and City, of Zoning, Election Districts and Land Use furnished by the City Engineer's Office, the Florida State Highway Department, and the Plan Board of Tallahassee.
7. General reference material, most kindly furnished by County Departments, the Tallahassee Chamber of Commerce, the Planning Board, and the Florida State University.

Definitions of Terms — "Zone", Column 1, designates the code numbers assigned to the O. and D. Zones in the 1957 Traffic Study.

"Location", Column 2, means the code numbers of the Central Business District, the Tallahassee City Limits, O. and D. District No. 484, and the rest of Leon County, outside District No. 484. By these Location codes, the O. and D. Zones are identified with the civil and statistical divisions of the City and County.

Population — includes all residents of all ages. Distribution among the zones was guided by the zonal enumeration of buildings in 1956 made in the Traffic Study, City and County, with references to the 1950 Census, and to current land use. Forecasts were guided by trends since 1940, current densities of population in the zones, and land use.

Dwelling Units include all occupied units, as defined by the Bureau of the Census for 1950. Forecasts were guided by the trend in relationship to population since 1950, and by current land use.

Labor Force includes all employed persons, by zones where employed and where resident. Distribution among the zones was based on a 10% sample of home addresses and working addresses of persons employed in Leon County in 1956. Numbers of resident workers were reconciled with zone populations and dwelling units. Numbers in zones of employment were reconciled with zonal distribution of commercial, industrial and professional establishments.

Passenger Car and Light Truck Registration — Forecasts were guided by the trend in the relationship to population, and by projections of current land use.

Retail Sales — in dollar volume were distributed among the zones on the basis of the zonal summary of 1956 volumes of taxed sales. These taxed volumes were adjusted to correspond with the totals of the categories used by the Bureau of the Census.

Forecasts were guided by trends, current distribution and projections of current land use and population.

Passenger Car and Light Truck Registration — were distributed among the zones on the basis of 20% samples of car and truck owners, taken from the 1956 registration lists for Leon County.

Forecasts were guided by trends in total registration, in the ratio of vehicle-ownership, and by projections of population and dwelling units.

CODES — TALLAHASSEE STATISTICS

Column 1 — Zones

01-0 to 83-0 are the Zones included in District 484, which is bounded by the Study cordon line, and includes the City.

00-1 and 00-2 designate parts of Zones which are divided by the boundary of the City. 00-1 is the part inside the City Limits, and 00-2, the part outside, in the "Rest of 484".

90-0, 91-0, 92-0, 93-0, 95-0 an96-0 are the remaining six Study Districts which make up the rest of Leon County, beyond District 484. Their Study designations are 480, 481, 482, 485 and 486.

Column 2 — Location

Each Zone, and each part of Zones split by the City Limits in District 484 are coded to designate their locations in the statistical divisions used for Leon County, as follows:

Locations	*Code*
Central Business District, Zones 11, 12, 13, 14 and 15	1
City Limits	2
Rest of District 484, outside the City Limits	3
Rest of the County, outside District 484	4

TABLE B-I
POPULATION
LEON COUNTY, FLORIDA

Zone	*Location*	*1956*	*1975*
01-0	3	600	820
02-0	3	296	405
03-1	2	185	1,218
03-2	3	473	646
04-0	2	761	2,257
05-0	2	1,054	2,623
06-0	2	28	657
07-1	2	622	2,744
07-2	3	245	335
08-0	3	207	283
09-0	2	—	—
10--	2	1,084	3,567
11-0	1	66	475
12-0	1	28	502
13-0	1	24	474
14-0	2	—	—
15-0	2	28	29
16-0	2	2,977	5,270
17-0	3	87	119
18-0	3	227	310
19-1	2	1,818	5,665
19-2	3	754	1,030
20-2	2	2,901	4,095
21-0	2	—	—
22-0	2	1,508	1,564
23-0	2	47	30
24-0	2	163	—
25-0	2	1,480	2,286
26-0	2	1,041	2,045
27-0	2	—	—
28-0	2	19	—
29-0	2	1,023	2,425
30-0	3	116	159
31-1	2	50	1,432
31-2	3	171	234
32-0	2	1,030	2,168
33-0	2	—	—
34-0	2	1,006	1,354
35-0	2	1,103	962
36-0	2	760	872
37-1	2	529	2,124
37-2	3	848	1,159
38-0	2	—	—
39-1	2	623	2,439
39-2	3	503	688
40-0	2	223	145
41-0	2	95	—
42-0	2	1,117	1,229
43-0	2	1,551	1,487
44-0	2	457	1,001

Zone	Location	1956	1975
45-0	2	2,295	177
46-0	2	578	3,349
47-1	2	50	194
47-2	3	845	1,155
48-0	2	964	2,498
49-0	2	95	479
50-0	2	891	1,979
51-0	2	—	—
52-0	2	963	497
53-0	2	441	—
54-0	2	771	—
55-1	2	1,324	2,181
55-2	3	430	509
56-0	2	2,510	2,707
57-0	2	—	—
58-0	2	760	501
59-0	2	41	—
60-0	2	968	980
61-0	2	—	—
62-0	2	275	1,563
63-1	2	14	132
63-2	3	1,600	2,187
64-0	2	367	729
65-0	2	63	—
66-0	2	556	739
67-1	2	836	1,587
67-2	3	63	74
68-1	2	2	82
68-2	3	116	137
69-1	2	282	687
69-2	3	260	308
70-0	3	1,013	1,199
71-0	3	266	315
72-1	2	14	—
72-2	3	1,064	1,259
73-1	2	3	242
73-2	3	26	31
74-0	3	201	238
75-1	2	60	237
75-2	3	1,253	1,483
76-0	3	868	1,027
77-0	3	366	433
78-0	3	115	136
79-0	3	187	221
80-0	3	—	—
81-0	3	—	—
82-0	3	—	—
83-0	2	376	1,421
90-0	4	2,827	2,877
91-0	4	36	36
92-0	4	965	973
93-0	4	1,992	2,009
95-0	4	1,774	1,790
96-0	4	1,006	1,015

SUMMARY — Population

	1956	1975
C. B. D.	118	1,480
TOTAL CITY	40,900	76,100
Rest of 484	13,200	16,900
Rest of County	8,600	8,700
TOTAL COUNTY	62,700	101,700

TABLE B-II
MOTOR VEHICLE REGISTRATION
Cars and Light Trucks (GH & GK)

LEON COUNTY, FLORIDA

Zone	Location	1956 Cars	1956 Lt. Trucks	1975 Cars	1975 Lt. Trucks
01-0	3	90	—	273	—
02-0	3	62	24	188	60
03-1	2	40	25	338	63
03-2	3	100	62	302	156
04-0	2	167	8	637	20
05-0	2	274	16	874	40
06-0	2	38	48	1,145	121
07-1	2	156	6	862	15
07-2	3	60	2	180	5
08-0	3	43	8	130	20
09-0	2	14	2	14	1
10-0	2	226	6	955	19
11-0	1	82	16	293	40
12-0	1	82	72	729	181
13-0	1	503	152	646	382
14-0	2	48	—	48	—
15-0	2	48	—	62	—
16-0	2	347	40	790	101
17-0	3	14	8	42	20
18-0	3	34	8	104	20
19-1	2	239	16	956	40
19-2	3	98	7	297	17
20-0	2	298	40	541	101
21-0	2	—	—	—	—
22-0	2	279	80	372	201
23-0	2	63	23	67	58
24-0	2	67	16	221	40
25-0	2	245	24	486	60
26-0	2	274	24	690	60
27-0	2	10	—	10	—
28-0	2	29	—	94	—
29-0	2	255	8	774	20
30-0	3	24	—	73	—
31-1	2	11	—	403	—
31-2	3	37	—	113	—
32-0	2	207	32	556	80
33-0	2	53	—	53	—
34-0	2	294	23	507	58
35-0	2	217	16	243	40
36-0	2	366	40	538	101
37-1	2	104	12	536	30
37-2	3	166	19	502	48
38-0	2	14	—	14	—
39-1	2	120	40	603	101
39-2	3	97	32	292	80
40-0	2	5	—	3	—
41-0	2	67	57	221	143
42-0	2	231	16	326	40
43-0	2	303	40	372	101
44-0	2	144	8	405	20
45-0	2	279	16	27	40
46-0	2	241	32	1,793	80
47-1	2	11	1	54	3
47-2	3	182	15	550	38
48-0	2	149	16	496	40
49-0	2	91	16	589	40
50-0	2	168	8	478	20
51-0	2	38	—	38	—
52-0	2	154	—	102	—
53-0	2	106	104	344	262
54-0	2	67	—	221	—
55-1	2	182	23	385	58
55-2	3	59	8	154	20
56-0	2	226	145	313	365
57-0	2	87	—	284	—
58-0	2	38	—	32	—
59-0	2	91	65	298	163
60-0	2	226	16	294	40
61-0	2	5	—	5	—
62-0	2	67	—	487	—
63-1	2	2	—	24	—
63-2	3	196	—	591	—
64-0	2	63	—	161	—
65-0	2	29	56	94	141
66-0	2	43	—	74	—
67-1	2	139	51	337	38
67-2	3	10	1	26	3
68-1	2	1	—	2	—
68-2	3	42	—	110	—
69-1	2	7	—	24	—
69-2	3	7	4	18	10
70-0	3	197	16	516	40
71-0	3	10	8	26	20
72-1	2	2	—	6	—
72-2	3	128	—	334	—
73-1	2	1	—	103	—
73-2	3	4	—	10	—
74-0	3	106	6	277	15
75-1	2	4	1	20	3
75-2	3	92	31	239	78
76-0	3	91	5	237	12
77-0	3	38	1	98	3
78-0	3	34	—	89	—
79-0	3	5	—	13	—
80-0	3	—	—	—	—
81-0	3	—	—	—	—
82-0	3	—	—	—	—
83-0	2	96	—	465	—
90-0	4	813	33	1,014	83
91-0	4	10	—	12	—
92-0	4	279	16	344	40
93-0	4	573	13	708	33
95-0	4	510	20	630	51
96-0	4	289	5	357	13

SUMMARY — Motor Vehicle Registration
Cars and Light Trucks (GH & GK)

	1956 Cars	1956 Lt. Trucks	1975 Cars	1975 Lt. Trucks
C. B. D.	763	240	1,778	603
TOTAL CITY	8,529	1,424	23,934	3,582
Rest of 484	2,026	265	5,784	665
Rest of County	2,474	87	3,066	220
TOTAL COUNTY	13,029	1,776	32,784	4,467
Out of County	438	69	1,101	173
Out of State	82	16	208	42
TOTAL	13,549	1,861	34,093	4,682

TABLE B-III
RETAIL SALES ($000)

LEON COUNTY, FLORIDA

Zone	Location	1956	1975
01-0	3	—	2
02-0	3	29	276
03-1	2	1,031	2,504
03-2	3	824	7,854
04-0	2	106	257
05-0	2	329	1,100
06-0	2	357	868
07-1	2	54	130
07-2	3	7	67
08-0	3	—	2
09-0	2	36	40
10-0	2	13	31
11-0	1	3,884	7,808
12-0	1	4,122	8,287
13-0	1	14,214	28,572
14-0	2	75	80
15-0	2	26	62

Zone	Location	1956	1975
16-0	2	139	338
17-0	3	—	—
18-0	3	346	3,295
19-1	2	144	348
19-2	3	19	181
20-0	2	1,538	3,734
21-0	2	—	—
22-0	2	2,422	5,885
23-0	2	3,926	9,536
24-0	2	5,454	13,244
25-0	2	29	70
26-0	2	61	148
27-0	2	—	—
28-0	2	2	5
29-0	2	204	496
30-0	3	—	—
31-1	2	—	—
31-2	3	—	—
32-0	2	73	177
33-0	2	—	—
34-0	2	939	2,280
35-0	2	1,333	3,238
36-0	2	1,188	2,886
37-1	2	850	2,064
37-2	3	434	4,136
38	2	1,926	4,677
39-1	2	71	171
39-2	3	18	173
40-0	2	372	904
41-0	2	9,856	23,936
42-0	2	163	395
43-0	2	368	892
44-0	2	1	1
45-0	2	1,360	3,303
46-0	2	75	836
47-0	2	6	15
47-0	3	33	315
48-0	2	274	666
49-0	2	403	977
50-0	2	25	361
51-0	2	260	631
52-0	2	1,316	3,196
53-0	2	2,821	6,246
54-0	2	2,812	6,830
55-1	2	177	429
55-2	3	18	175
56-0	2	552	1,341
57-0	2	145	160
58-0	2	—	7
59-0	2	4,153	10,087
60-0	2	1,373	3,336
61-0	2	—	—
62-0	2	254	617
63-1	2	1	1
63-2	3	9	84
64-0	2	106	258
65-0	2	2,775	6,738
66-0	2	3	8
67-1	2	—	10
67-2	3	—	—
68-1	2	1	2
68-2	3	16	155
69-1	2	—	—
69-2	3	—	—
70-0	3	—	—
71-0	3	—	—
72-1	2	—	—
72-2	3	—	2
73-1	2	—	—
73-2	3	—	—
74-0	3	38	360
75-1	2	1	2
75-2	3	5	42
76-0	3	—	—
77-0	3	62	587
78-0	3	247	2,356
79-0	3	—	—
80-0	3	—	—
81-0	3	—	—
82-0	3	—	—
83-0	2	—	—
90-0	4	341	364
91-0	4	—	—
92-0	4	133	142
93-0	4	185	198
95-0	4	226	242
96-0	4	416	446

SUMMARY — Retail Sales ($000)

	1956	1975
C. B. D.	22,321	44,809
TOTAL CITY	74,199	171,221
Rest of 484	2,105	20,062
Rest of County	1,301	1,392
TOTAL COUNTY	$77,605	$192,675

TABLE B-IV
EMPLOYMENT
LEON COUNTY, FLORIDA

		1956		1975	
Zone	Location	Resident	Employed	Resident	Employed
01-0	3	321	21	400	25
02-0	3	92	—	115	—
03-1	2	49	4	317	8
03-2	3	119	15	148	17
04-0	2	347	151	1,005	289
05-0	2	356	33	865	63
06-0	2	9	51	210	97
07-1	2	179	42	771	81
07-2	3	68	20	86	24
08-0	3	37	—	46	—
09-0	2	—	269	—	513
10-0	2	318	67	1,020	129
11-0	1	20	647	141	1,232
12-0	1	9	748	160	1,424
13-0	1	7	2,229	141	4,244
14-0	2	—	1,800	—	2,079
15-0	2	7	320	7	608
16-0	2	1,089	125	1,882	239
17-0	3	46	—	57	—
18-0	3	27	21	34	25
19-1	2	676	125	2,054	237
19-2	3	265	63	329	74
20-0	2	1,122	422	1,546	803
21-0	2	—	22	—	25
22-0	2	564	312	572	594
23-0	2	15	93	12	176
24-0	2	87	84	—	160
25-0	2	501	84	756	160
26-0	2	269	51	517	97
27-0	2	—	21	—	24
28-0	2	5	9	—	16
29-0	2	327	24	757	46
30-0	3	27	258	34	299
31-1	2	8	13	230	25
31-2	3	28	56	35	64
32-0	2	348	41	712	79
33-0	2	—	60	—	69
34-0	2	270	17	355	33
35-0	2	482	328	410	625
36-0	2	184	2,818	206	5,366
37-1	2	157	26	616	49
37-2	3	232	50	289	58
38-0	2	—	93	—	107
39-1	2	246	48	939	91
39-2	3	183	46	228	53
40-0	2	48	—	30	—
41-0	2	58	328	—	625
42-0	2	395	144	424	274
43-0	2	993	437	929	833
44-0	2	221	51	473	97
45-0	2	319	310	24	590
46-0	2	413	75	2,335	143
47-1	2	16	—	59	—
47-2	3	252	—	314	—
48-0	2	240	51	608	97
49-0	2	29	228	144	434
50-0	2	173	42	376	79
51-0	2	—	76	—	88
52-0	2	299	184	151	350
53-0	2	135	480	—	913
54-0	2	251	597	—	1,138
55-1	2	519	140	835	267
55-2	3	160	55	172	63
56-0	2	859	185	904	353
57-0	2	—	361	—	688
58-0	2	193	59	124	112
59-0	2	13	126	—	239
60-0	2	280	228	277	434
61-0	2	—	9	—	10
62-0	2	116	9	644	16
63-1	2	3	—	25	—
63-2	3	320	51	398	60
64-0	2	144	75	280	143
65-0	2	29	93	—	176
66-0	2	58	—	75	—
67-1	2	217	48	403	91
67-2	3	15	4	17	5
68-1	2	1	—	37	—
68-2	3	9	—	10	—
69-1	2	30	9	71	16
69-2	3	27	11	28	12
70-0	3	175	11	189	12
71-0	3	19	30	20	35
72-1	2	4	1	—	2
72-2	3	271	50	292	59
73-1	2	1	1	72	2
73-2	3	8	9	9	10
74-0	3	92	62	100	72
75-1	2	9	3	36	7
75-2	3	185	98	201	114
76-0	3	74	41	80	47
77-0	3	27	10	29	12
78-0	3	33	12	29	12
79-0	3	31	—	29	—
80-0	3	—	—	—	—
81-0	3	—	10	—	11
82-0	3	—	—	—	—
83-0	2	29	24	108	46
90-0	4	1,818	1,724	2,162	1,998
91-0	4	26	191	31	222
92-0	4	236	—	278	—
93-0	4	754	1,151	889	1,334
95-0	4	728	765	858	887
96-0	4	597	1,148	704	1,330

SUMMARY — Employment

	1956		1975	
	Resident	Employed	Resident	Employed
C. B. D.	43	5,744	449	9,587
TOTAL CITY	13,746	15,551	25,645	28,051
Rest of 484	3,142	1,004	3,718	1,163
Rest of County	4,159	4,979	4,922	5,771
TOTAL COUNTY	21,047	21,534	34,285	34,985
Out of County	487	—	700	
Out of State	—	—	—	
TOTAL	21,534	21,534	34,985	34,985

TABLE B-V

DWELLING UNITS

LEON COUNTY, FLORIDA

Zone	Location	1956	1975
01-0	3	173	222
02-0	3	85	109
03-1	2	50	354
03-2	3	136	174
04-0	2	202	656
05-0	2	280	761
06-0	2	8	191
07-1	2	165	797
07-2	3	71	90
08-0	3	60	76
09-0	2	—	—
10-0	2	288	1,036
11-0	1	14	18
12-0	1	6	19
13-0	1	5	18
14-0	2	—	—
15-0	2	8	8
16-0	2	791	1,532
17-0	3	25	32
18-0	3	66	84
19-1	2	482	1,646
19-2	3	218	278
20-0	2	770	1,189
21-0	2	—	—
22-0	2	401	454
23-0	2	13	11
24-0	2	44	—
25-0	2	393	664
26-0	2	276	595
27-0	2	—	—
28-0	2	5	—
29-0	2	271	704
30-0	3	34	43
31-1	2	14	416
31-2	3	49	63
32-0	2	274	627
33-0	2	—	—
34-0	2	267	394
35-0	2	310	279
36-0	2	202	253
37-1	2	141	616
37-2	3	245	312
38-0	2	—	—
39-1	2	165	708
39-2	3	145	186
40-0	2	63	42
41-0	2	27	—
42-0	2	313	358
43-0	2	435	432
44-0	2	121	290
45-0	2	644	51
46-0	2	153	972
47-1	2	14	56
47-2	3	259	312
48-0	2	256	725
49-0	2	27	140
50-0	2	237	576
51-0	2	—	—
52-0	2	270	145
53-0	2	124	—
54-0	2	216	—
55-1	2	371	634
55-2	3	131	137
56-0	2	704	786
57-0	2	—	—
58-0	2	214	146
59-0	2	12	—
60-0	2	257	284
61-0	2	—	—
62-0	2	73	454
63-1	2	4	38
63-2	3	465	860
64-0	2	97	212
65-0	2	18	—
66-0	2	156	215
67-1	2	252	461
67-2	3	21	20
68-1	2	1	24
68-2	3	35	37
69-1	2	74	204
69-2	3	75	83
70-0	3	292	323
71-0	3	81	85
72-1	2	4	—
72-2	3	329	339
73-1	2	1	71
73-2	3	4	8
74-0	3	61	64
75-1	2	17	68
75-2	3	379	401
76-0	3	264	277
77-0	3	112	117
78-0	3	35	37
79-0	3	57	60
80-0	3	—	—
81-0	3	—	—
82-0	3	—	—
83-0	2	100	413
90-0	4	599	690
91-0	4	8	9
92-0	4	205	234
93-0	4	422	483
95-0	4	376	430
96-0	4	213	244

SUMMARY — Dwelling Units

	1956	1975
C. B. D.	33	63
TOTAL CITY	11,100	21,743
Rest of 484	3,907	4,829
Rest of County	1,823	2,090
TOTAL COUNTY	16,830	28,662

Appendix C
INTERSTATE DESIGN STANDARDS

The following excerpts relative to urban development of the National System of Interstate and Defense Highways were taken from geometric standards adopted by the American Association of State Highway Officials and approved by the U. S. Bureau of Public Roads in July 1956:

"Interstate highways shall be designed to serve safely and efficiently the volumes of passenger vehicles, buses, and trucks, including tractor-trailer and semitrailer combinations and corresponding military equipment, estimated to be that which will exist in 1975, including attracted, generated, and development traffic on the basis that the entire system is completed."

"The peak-hour traffic used as a basis for design shall be as high as the 30th highest hourly volume of the year 1975."

"All at-grade intersections of public highways and private driveways shall be eliminated, or the connecting road terminated, rerouted, or intercepted by frontage roads, except as otherwise provided under control of access."

"The design speed of all highways on the system shall be at least 70, 60, and 50 miles per hour for flat, rolling, and mountainous topography, respectively, and depending upon the nature of the terrain and development. The design speed in urban areas should be at least 50 miles per hour."

"For design speeds of 70, 60, and 50 miles per hour, gradients generally shall be not steeper than three, four, and five per cent, respectively, Gradients two per cent steeper may be provided in rugged terrain."

"Traffic lanes shall not be less than 12 feet wide."

"Where the design hourly volume (1975) exceeds 700 or exceeds a lower two-lane design capacity applicable for the conditions on a particular section, the highway shall be a divided highway. For lower volumes, the highway shall be a two-lane highway so designed and located on the right-of-way that an additional two-lane pavement can be added in the future to form a divided highway."

"Medians in rural areas in flat and rolling topography shall be at least 36 feet wide. Medians in urban and mountainous areas shall be at least 16 feet wide. Narrower medians may be provided in urban areas of high right-of-way cost, on long and costly bridges, and in rugged mountainous terrain, but no median shall be less than four feet wide."

"Curbs or other devices may be used where necessary to prevent traffic from crossing the median."

"In urban areas right-of-way width shall be not less than that required for the necessary cross section elements, including median, pavements, shoulders, outer separations, ramps, frontage roads, slopes, walls, border areas, and other requisite appurtenances."

"Bridges and overpasses, preferably of deck construction, should be located to fit the over-all alinement and profile of the highway."

"The clear height of structures shall be not less than 14 feet over the entire roadway width, including the usable width of shoulders. Allowance should be made for any contemplated resurfacing."

"The width of all bridges, including grade separation structures, of a length of 150 feet or less between abutments or end supporting piers shall equal the full roadway width on the approaches, including the usable width of shoulders."

Appendix D

ORIGIN AND DESTINATION DATA

TABLE D-I

INTERNAL ZONE MOVEMENTS

1975

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
1	02	6	1	3
1	03	32	6	18
1	04	13	2	5
1	05	12	2	5
1	06	7	1	3
1	07	14	2	7
1	08	1		
1	09	12	2	3
1	10	16	3	8
1	11	79	13	29
1	12	34	6	14
1	13	107	20	45
1	14	24	4	6
1	15	15	3	3
1	16	30	5	14
1	17	2		1
1	18	17	3	9
1	19	75	12	32
1	20	28	5	12
1	21	3		1
1	22	30	5	11
1	23	16	3	8
1	24	33	5	17
1	25	9	1	4
1	26	8	1	3
1	27			
1	28			
1	29	10	1	5
1	30	7	1	2
1	31	6	1	3
1	32	7	1	3
1	33			
1	34	12	2	6
1	35	22	4	7
1	36	375	44	95
1	37	28	5	15
1	38	11	2	4
1	39	19	3	9
1	40	4	1	1
1	41	50	9	21
1	42	14	2	4
1	43	24	4	7
1	44	15	2	5
1	45	14	2	5
1	46	9	1	4
1	47	2		1
1	48	10	1	5
1	49	7	1	2
1	50	30	5	14
1	51	4		1
1	52	14	2	5
1	53	24	4	8
1	54	19	3	6
1	55	12	2	5
1	56	9	1	4
1	57	20	4	4
1	58	2		1
1	59	13	2	5
1	60	12	2	5
1	61	4	1	1
1	62	4		2
1	63	9	1	5
1	64	3	1	1
1	65	9	1	4
1	66	2		1
1	67	6	1	3
1	68	1		
1	69	4		2
1	70	5	1	2
1	71	3		1
1	72	2		1
1	73			
1	74	2		1
1	75	5	1	2
1	76	3		1
1	77	3		1
1	78	4	1	1
1	79	2		1
1	80	3		1
1	81			
1	82			
1	83	12	2	6
2	03	31	5	17
2	04	8	1	4
2	05	10	2	5
2	06	5	1	3
2	07	11	2	6
2	08			
2	09	3		
2	10	16	3	8
2	11	18	3	4
2	12	16	3	6
2	13	46	8	20
2	14	6	1	1
2	15	6	1	1
2	16	35	6	17
2	17			
2	18	5	1	2
2	19	27	4	14
2	20	11	2	5
2	21			
2	22	8	1	2
2	23	1		
2	24	2		
2	25	7	1	3
2	26	9	1	5
2	27			
2	28			
2	29	8	1	4
2	30			
2	31	6	1	3
2	32	6	1	3
2	33	18	3	5
2	34	10	2	5
2	35	7	1	2
2	36	104	17	30
2	37	22	4	12
2	38	5	1	2
2	39	8	1	4
2	40			
2	41	16	3	7
2	42	5		2
2	43	7	1	2
2	44	4		2
2	45	5	1	1
2	46	7	1	3
2	47	2		1
2	48	8	1	4
2	49	2		
2	50	32	5	16
2	51			
2	52	6	1	2
2	53	7	1	1
2	54	8	1	2
2	55	7	1	3
2	56	4	1	1
2	57	7	1	1
2	58	1		
2	59	7	1	3
2	60	5		2
2	61			
2	62	4		2
2	63	7	1	3
2	64	1		
2	65	5	1	2
2	66	1		
2	67	3		1
2	68			
2	69	1		
2	70	3		1
2	71	1		
2	72	2		1
2	73			
2	74			
2	75	3	1	2
2	76	2		1
2	77	1		
2	78	4	1	1
2	79			
2	80			
2	81			
2	82			
2	83	9	1	4
3	04	104	17	53
3	05	76	12	42
3	06	35	6	18
3	07	136	25	76
3	08	5		2
3	09	33	5	9
3	10	154	29	86
3	11	139	22	68
3	12	89	16	41
3	13	273	51	127
3	14	78	10	31
3	15	22	4	6
3	16	266	43	144
3	17	2		1
3	18	44	7	25
3	19	211	34	118
3	20	127	20	69
3	21	5		2
3	22	103	19	55
3	23	66	11	35
3	24	114	18	61
3	25	81	15	45
3	26	84	15	47
3	27	37	6	15
3	28	9	1	4
3	29	70	13	39
3	30	12	2	4
3	31	50	9	27
3	32	56	10	31
3	33	8	10	3
3	34	73	12	41
3	35	57	10	28
3	36	441	55	146
3	37	159	30	90
3	38	20	3	9
3	39	86	16	48
3	40	6	1	2
3	41	108	20	57
3	42	48	9	25
3	43	53	10	25
3	44	55	10	28
3	45	34	5	14
3	46	68	12	37
3	47	26	4	14
3	48	70	13	39
3	49	21	3	8
3	50	121	20	61
3	51	10	1	3
3	52	48	8	22
3	53	52	8	22
3	54	53	10	22
3	55	78	14	42
3	56	57	9	30
3	57	28	4	7
3	58	13	2	6
3	59	40	7	21
3	60	47	8	23
3	61	6	1	2
3	62	30	5	17
3	63	57	10	32
3	64	11	2	6
3	65	26	4	14
3	66	11	2	6
3	67	25	4	13
3	68	5		2
3	69	20	3	11
3	70	18	3	10
3	71	8	1	4
3	72	14	2	8
3	73	7	1	3
3	74	6	1	3
3	75	20	3	11
3	76	20	3	11
3	77	13	2	7
3	78	11	2	6
3	79	3		1
3	80	3		1
3	81	3		1
3	82	10	2	4
3	83	84	13	47
4	05	62	10	52
4	06	47	8	20
4	07	58	9	27
4	08	2		1
4	09	57	9	15
4	10	107	17	45
4	11	126	20	50
4	12	90	14	35
4	13	298	48	119
4	14	39	6	11
4	15	29	5	8
4	16	150	24	58
4	17	1		1
4	18	14	2	7
4	19	75	12	36
4	20	54	9	24
4	21	2		1
4	22	49	8	20
4	23	74	12	34
4	24	66	11	34
4	25	29	5	13
4	26	28	4	14
4	27	30	5	7
4	28	5	1	2
4	29	36	6	18
4	30	11	2	2
4	31	18	3	9
4	32	27	4	13
4	33	6	1	1
4	34	97	16	35
4	35	41	7	15
4	36	270	27	83
4	37	45	7	23
4	38	16	3	8
4	39	24	4	12
4	40	5	1	2
4	41	65	10	34
4	42	15	2	6
4	43	41	7	13
4	44	41	7	13
4	45	41	7	16
4	46	27	4	11

TABLE D-I — *Continued*

INTERNAL ZONE MOVEMENTS

1975

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
4	47	10	2	4
4	48	25	4	13
4	49	13	2	4
4	50	43	7	15
4	51	11	2	3
4	52	27	4	10
4	53	38	6	16
4	54	36	6	14
4	55	29	5	13
4	56	21	3	9
4	57	28	4	8
4	58	6	1	1
4	59	29	5	15
4	60	21	3	9
4	61	6	1	3
4	62	15	2	7
4	63	20	3	10
4	64	6	1	2
4	65	29	5	14
4	66	5	1	2
4	67	11	2	4
4	68	2		1
4	69	7	1	4
4	70	6	1	3
4	71	3		2
4	72	6	1	2
4	73	2		1
4	74	4	1	1
4	75	8	1	4
4	76	8	1	4
4	77	5	1	2
4	78	6	1	2
4	79	2		1
4	80	2		1
4	81	2		1
4	82	7	1	1
4	83	48	8	23
5	06	48	8	21
5	07	106	17	54
5	08	5	1	2
5	09	48	8	12
5	10	108	17	53
5	11	146	23	62
5	12	103	16	44
5	13	147	16	62
5	14	32	5	9
5	15	24	4	7
5	16	70	11	38
5	17	1		1
5	18	17	3	10
5	19	62	10	33
5	20	67	11	32
5	21	4	1	2
5	22	55	9	25
5	23	56	9	29
5	24	90	14	46
5	25	37	6	19
5	26	64	10	31
5	27	22	4	7
5	28	9	1	4
5	29	41	7	22
5	30	19	3	6
5	31	28	4	15
5	32	32	5	18
5	33	6	1	1
5	34	70	11	32
5	35	46	7	19
5	36	281	29	89
5	37	58	9	32
5	38	19	3	9
5	39	25	4	13
5	40	5	1	2
5	41	82	13	43
5	42	16	3	7
5	43	38	6	14
5	44	20	3	9
5	45	44	7	17
5	46	35	6	18
5	47	11	2	6
5	48	32	5	17
5	49	22	4	8
5	50	52	10	26
5	51	11	2	3
5	52	29	5	13
5	53	38	6	16
5	54	41	7	18
5	55	33	5	15
5	56	20	3	11
5	57	25	4	7
5	58	6	1	2
5	59	36	6	18
5	60	25	4	12
5	61	8	1	4
5	62	20	3	11
5	63	25	4	13
5	64	6	1	3
5	65	30	5	15
5	66	6	1	3
5	67	12	2	6
5	68	3		1
5	69	9	1	5
5	70	8	1	5
5	71	4	1	2
5	72	7	1	3
5	73	3		1
5	74	4	1	2
5	75	10	2	5
5	76	11	2	5
5	77	6	1	3
5	78	8	1	5
5	79	2		1
5	80	2		1
5	81	2		1
5	82	7	1	4
5	83	62	10	32
6	07	79	13	36
6	08	4	1	
6	09	87	14	21
6	10	78	12	34
6	11	172	28	85
6	12	40	7	17
6	13	127	24	57
6	14	43	7	11
6	15	17	3	3
6	16	41	7	20
6	17			
6	18	6	1	4
6	19	36	6	17
6	20	39	6	18
6	21	4	1	1
6	22	34	5	14
6	23	20	3	10
6	24	46	7	22
6	25	22	4	9
6	26	46	7	18
6	27	30	5	7
6	28	34	6	11
6	29	23	4	12
6	30	10	2	4
6	31	17	3	8
6	32	18	3	9
6	33	6	1	1
6	34	61	10	24
6	35	25	4	10
6	36	178	12	66
6	37	31	5	16
6	38	6	1	4
6	39	14	2	7
6	40	5	1	1
6	41	33	5	16
6	42	10	2	4
6	43	23	4	8
6	44	20	3	7
6	45	19	3	6
6	46	27	4	12
6	47	8	1	3
6	48	18	3	9
6	49	8	1	1
6	50	90	14	41
6	51	8	1	1
6	52	11	2	5
6	53	22	4	10
6	54	20	3	8
6	55	22	4	9
6	56	12	2	6
6	57	9	1	2
6	58	1		
6	59	30	5	15
6	60	9	1	4
6	61	5	1	1
6	62	10	2	4
6	63	12	2	7
6	64	1		1
6	65	10	2	5
6	66	3		1
6	67	7	1	3
6	68			
6	69	4	1	1
6	70	5	1	2
6	71	1		
6	72	4	1	2
6	73			
6	74			
6	75	5	1	2
6	76	4	1	1
6	77	1		
6	78	5	1	1
6	79			
6	80			
6	81			
6	82			
6	83	35	6	18
7	08	21	3	11
7	09	222	36	57
7	10	189	35	94
7	11	273	44	107
7	12	109	20	50
7	13	147	18	65
7	14	61	11	17
7	15	38	6	10
7	16	132	21	69
7	17	2		1
7	18	22	4	12
7	19	108	17	58
7	20	74	12	37
7	21	6	1	3
7	22	120	22	53
7	23	98	16	50
7	24	165	26	85
7	25	68	12	34
7	26	110	20	54
7	27	52	8	22
7	28	25	4	11
7	29	100	19	52
7	30	42	7	13
7	31	60	11	32
7	32	63	11	33
7	33	17	3	6
7	34	131	21	60
7	35	48	9	21
7	36	294	47	98
7	37	75	14	40
7	38	31	5	15
7	39	45	8	24
7	40	10	2	5
7	41	140	26	74
7	42	31	5	15
7	43	45	8	18
7	44	43	8	18
7	45	97	16	35
7	46	76	14	38
7	47	20	3	10
7	48	59	11	32
7	49	21	3	9
7	50	45	7	18
7	51	9	1	3
7	52	48	8	22
7	53	70	11	29
7	54	66	12	28
7	55	52	9	25
7	56	35	6	18
7	57	42	7	11
7	58	10	1	5
7	59	58	11	30
7	60	42	7	21
7	61	10	2	5
7	62	33	6	18
7	63	43	8	23
7	64	10	2	4
7	65	38	6	19
7	66	10	2	5
7	67	20	3	10
7	68	5		2
7	69	15	2	8
7	70	13	2	7
7	71	5		2
7	72	10	2	5
7	73	6	1	3
7	74	9	1	3
7	75	15	2	8
7	76	19	3	9
7	77	9	1	5
7	78	12	2	6
7	79	4		2
7	80	5		2
7	81	4		2
7	82	14	2	7
7	83	74	12	39
8	09	12	2	3
8	10	21	3	10
8	11	18	3	8
8	12	12	2	5
8	13	31	5	15
8	14	5		1
8	15	3		
8	16	7	1	4
8	17			
8	18	4	1	1
8	19	10	2	5
8	20	10	2	4
8	21			
8	22	10	1	4
8	23	3		1
8	24	4	1	1
8	25	8	1	3
8	26	7	1	2
8	27	10	2	3
8	28			
8	29	16	3	9
8	30	6	1	1
8	31	6	1	3
8	32	6	1	3
8	33			
8	34	5	1	2
8	35	5	1	4
8	36	14	2	7
8	37	9	1	5
8	38	4	1	1
8	39	5		2
8	40			
8	41	13	2	7
8	42	3		1
8	43	5		1
8	44	5		1
8	45	5	1	1
8	46	8	1	3
8	47	2		1
8	48	5		2
8	49	1		
8	50	9	1	5
8	51			
8	52	2		
8	53	6	1	1
8	54			
8	55	3		1
8	56	4	1	1
8	57			
8	58	1		
8	59			
8	60	1		
8	61			

TABLE D-I — *Continued*

INTERNAL ZONE MOVEMENTS

1975

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
8	62	3		1
8	63	4		2
8	64	1		
8	65	4	1	1
8	66	1		
8	67	2		1
8	68			
8	69	1		
8	70			
8	71			
8	72	1		
8	73			
8	74			
8	75	2		1
8	76	1		
8	77			
8	78	4	1	1
8	79			
8	80			
8	81			
8	82			
8	83	11	2	5
9	10	264	42	69
9	11	14	2	
9	12	9	1	
9	13	9	1	
9	14			
9	15			
9	16	91	15	24
9	17			
9	18			
9	19	63	10	16
9	20	48	8	13
9	21			
9	22	42	7	9
9	23			
9	24	10	2	4
9	25	111	18	21
9	26	138	22	36
9	27			
9	28	200	30	50
9	29	22	6	7
9	30	4	1	
9	31	30	5	6
9	32	102	16	27
9	33	28	7	8
9	34	182	24	94
9	35	39	6	9
9	36	210	20	90
9	37	42	7	9
9	38			
9	39	24	4	6
9	40			
9	41			
9	42	30	5	6
9	43	66	11	18
9	44	108	17	27
9	45	45	13	12
9	46	120	19	300
9	47	33	5	9
9	48	42	7	12
9	49	9	1	
9	50	78	12	14
9	51			
9	52	14	2	
9	53			
9	54			
9	55	45	7	12
9	56	32	5	8
9	57	27	4	7
9	58	9	2	2
9	59			
9	60	24	4	6
9	61			
9	62	30	5	6
9	63	21	3	6
9	64	10	2	2
9	65			
9	66			
9	67	8	1	2
9	68			
9	69			
9	70	5	1	
9	71			
9	72	5	1	
9	73			
9	74	6	1	
9	75	11	2	3
9	76			
9	77			
9	78			
9	79			
9	80			
9	81			
9	82			
9	83	41	7	9
10	11	224	36	99
10	12	160	30	71
10	13	137	18	64
10	14	112	21	32
10	15	57	9	15
10	16	129	21	69
10	17	3		1
10	18	35	6	19
10	19	112	18	59
10	20	111	18	59
10	21	6	1	3
10	22	98	18	47
10	23	145	23	78
10	24	178	28	94
10	25	109	20	51
10	26	109	20	53
10	27	111	18	44
10	28	18	3	9
10	29	128	24	64
10	30	26	4	10
10	31	61	11	33
10	32	99	16	50
10	33	13	2	6
10	34	131	21	60
10	35	68	12	29
10	36	291	47	102
10	37	107	20	58
10	38	35	6	18
10	39	44	8	23
10	40	11	2	6
10	41	153	29	82
10	42	31	5	15
10	43	65	12	25
10	44	56	10	24
10	45	70	11	30
10	46	66	12	33
10	47	20	3	10
10	48	69	13	37
10	49	40	7	16
10	50	103	19	52
10	51	20	3	7
10	52	78	12	35
10	53	72	12	31
10	54	72	13	32
10	55	63	11	32
10	56	43	7	22
10	57	42	7	11
10	58	14	2	6
10	59	65	12	34
10	60	48	9	23
10	61	13	2	6
10	62	32	6	17
10	63	63	11	34
10	64	16	3	6
10	65	55	9	29
10	66	14	2	8
10	67	20	3	11
10	68	5		2
10	69	22	4	12
10	70	15	2	8
10	71	8	1	4
10	72	11	2	6
10	73	5		2
10	74	8	1	3
10	75	19	3	10
10	76	18	3	10
10	77	14	2	7
10	78	16	3	8
10	79	4		2
10	80	4		2
10	81	4		2
10	82	14	2	7
10	83	107	17	56
11	12	566	75	225
11	13	567	72	230
11	14	404	78	93
11	15	175	28	43
11	16	273	44	124
11	17	11	2	3
11	18	28	4	11
11	19	326	52	150
11	20	210	50	177
11	21	5		2
11	22	192	31	89
11	23	34	5	18
11	24	277	22	62
11	25	227	36	98
11	26	120	19	56
11	27	47	10	20
11	28	43	7	10
11	29	141	23	63
11	30	4	1	
11	31	92	15	42
11	32	189	30	84
11	33	129	21	42
11	34	148	24	61
11	35	117	19	51
11	36	1860	90	1201
11	37	222	36	108
11	38	11	2	6
11	39	171	27	80
11	40	4	1	
11	41	147	23	75
11	42	110	18	48
11	43	162	26	63
11	44	54	9	21
11	45	325	44	130
11	46	175	22	103
11	47	80	13	35
11	48	131	21	60
11	49	53	8	23
11	50	135	28	97
11	51			
11	52	99	16	46
11	53	42	7	17
11	54	29	5	12
11	55	185	30	81
11	56	124	20	57
11	57	301	49	61
11	58	48	77	20
11	59	230	20	86
11	60	105	17	48
11	61	6	1	3
11	62	117	19	48
11	63	122	20	59
11	64	36	6	16
11	65	19	3	10
11	66	26	4	13
11	67	67	11	29
11	68	15	1	5
11	69	42	7	21
11	70	44	7	22
11	71	11	2	5
11	72	26	4	12
11	73	11	2	3
11	74	9	1	2
11	75	48	8	23
11	76	45	7	21
11	77	18	3	9
11	78	14	2	7
11	79	8	1	3
11	80			
11	81	5	1	2
11	82			
11	83	167	27	81
12	13	228	36	112
12	14	172	28	40
12	15	129	21	33
12	16	202	32	90
12	17	9	1	3
12	18	19	3	8
12	19	251	40	115
12	20	120	19	54
12	21	3		1
12	22	134	25	60
12	23	23	4	11
12	24	151	18	37
12	25	170	32	72
12	26	86	16	40
12	27			
12	28	43	7	25
12	29	129	27	57
12	30	2		
12	31	64	12	29
12	32	135	25	61
12	33	65	10	22
12	34	106	17	43
12	35	82	15	34
12	36	962	40	350
12	37	160	30	77
12	38	8	1	4
12	39	138	26	66
12	40	6	1	1
12	41	116	18	60
12	42	88	16	39
12	43	126	23	50
12	44	32	6	12
12	45	19	3	7
12	46	233	56	93
12	47	64	12	26
12	48	157	29	73
12	49	36	6	16
12	50	82	12	40
12	51			
12	52	72	12	33
12	53	29	5	12
12	54	25	4	10
12	55	134	25	58
12	56	99	16	40
12	57	129	21	1
12	58	33	6	14
12	59	387	63	11
12	60	81	15	37
12	61	4	1	1
12	62	87	16	35
12	63	111	21	50
12	64	40	6	18
12	65	13	2	6
12	66	19	3	10
12	67	45	7	20
12	68	8	1	2
12	69	34	6	16
12	70	29	5	14
12	71	8	1	4
12	72	28	5	13
12	73	9	1	2
12	74	9	1	2
12	75	33	5	15
12	76	37	7	18
12	77	7	1	2
12	78	11	2	6
12	79	10	1	4
12	80			
12	81	3		1
12	82			
12	83	66	11	35
13	14	129	21	32
13	15	172	28	43
13	16	475	78	204
13	17	23	4	8
13	18	47	7	23
13	19	482	105	159
13	20	220	69	189
13	21	3		1
13	22	278	29	85
13	23	124	24	43
13	24	186	32	51
13	25	268	51	186

TABLE D-I — *Continued*

INTERNAL ZONE MOVEMENTS

1975

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
13	26	186	31	52
13	27	35	7	10
13	28	43	7	11
13	29	357	67	157
13	30	24	4	10
13	31	121	21	52
13	32	301	57	139
13	33	43	7	10
13	34	335	54	142
13	35	273	51	123
13	36	1413	86	830
13	37	323	46	196
13	38	8	1	4
13	39	398	75	187
13	40	8	1	1
13	41	60	11	31
13	42	270	51	122
13	43	377	71	153
13	44	131	24	54
13	45	318	43	99
13	46	309	85	174
13	47	194	36	87
13	48	315	59	146
13	49	104	19	48
13	50	210	32	166
13	51			
13	52	179	29	86
13	53	30	5	13
13	54	28	5	12
13	55	436	82	194
13	56	198	30	127
13	57	169	21	1
13	58	98	18	44
13	59	129	21	60
13	60	264	50	125
13	61	4	1	1
13	62	279	53	114
13	63	361	68	164
13	64	86	14	39
13	65	213	32	64
13	66	62	10	32
13	67	167	27	74
13	68	20	3	8
13	69	95	18	49
13	70	95	15	47
13	71	25	4	12
13	72	105	17	50
13	73	18	3	4
13	74	22	4	5
13	75	107	17	50
13	76	116	22	58
13	77	23	4	7
13	78	40	6	16
13	79	20	3	8
13	80			
13	81	3		1
13	82	11	2	4
13	83	225	36	131
14	15	52	8	12
14	16	132	21	38
14	17	2		
14	18	5	1	1
14	19	149	24	44
14	20	75	12	22
14	21			
14	22	70	13	20
14	23			
14	24	76	10	23
14	25	62	11	18
14	26	49	9	15
14	27			
14	28	17	3	4
14	29	82	15	23
14	30	2		
14	31	40	7	11
14	32	60	11	17
14	33	43	7	10
14	34	73	12	19
14	35	42	7	12
14	36	354	52	210
14	37	142	26	39
14	38			
14	39	52	9	16
14	40	5	1	1
14	41	32	6	9
14	42	45	8	12
14	43	85	16	24
14	44	35	6	9
14	45	240	41	120
14	46	158	22	36
14	47	53	10	14
14	48	76	14	23
14	49	17	3	4
14	50	76	12	25
14	51			
14	52	27	4	7
14	53	48	8	11
14	54			
14	55	142	26	39
14	56	59	9	17
14	57	43	7	10
14	58	17	3	11
14	59	129	21	
14	60	41	7	32
14	61			
14	62	79	15	21
14	63	85	16	23
14	64	61	10	16
14	65	40	10	11
14	66	8	1	2
14	67	37	6	10
14	68	3		
14	69	10	1	3
14	70	12	2	3
14	71			
14	72	21	3	6
14	73	11	2	2
14	74	12	2	3
14	75	18	3	5
14	76	17	3	5
14	77	10	1	2
14	78	10	2	2
14	79	4		1
14	80			
14	81			
14	82			
14	83	18	3	6
15	16	73	12	19
15	17	3		
15	18	4	1	
15	19	84	13	23
15	20	39	6	10
15	21			
15	22	42	7	11
15	23			
15	24	6	2	4
15	25	35	6	8
15	26	25	4	7
15	27			
15	28	17	3	4
15	29	44	7	13
15	30			
15	31	17	3	4
15	32	40	6	11
15	33	60	10	16
15	34	79	13	20
15	35	33	5	8
15	36	270	30	115
15	37	50	8	14
15	38			
15	39	49	8	13
15	40			
15	41			
15	42	35	6	10
15	43	58	9	14
15	44	33	5	8
15	45	160	26	50
15	46	213	34	55
15	47	21	3	6
15	48	92	15	24
15	49	11	2	3
15	50	48	8	14
15	51			
15	52	18	3	5
15	53	64	10	18
15	54			
15	55	77	12	22
15	56	36	6	10
15	57	17	3	4
15	58	11	2	3
15	59	84	14	38
15	60	24	4	6
15	61			
15	62	34	5	8
15	63	35	6	10
15	64	26	4	6
15	65			
15	66	2		1
15	67	18	3	5
15	68	3		
15	69	7	1	1
15	70	8	1	2
15	71			
15	72	9	1	2
15	73	3		
15	74	3		
15	75	9	1	2
15	76	8	1	3
15	77	6	1	1
15	78			
15	79			
15	80			
15	81			
15	82			
15	83	6	1	2
16	17	3		2
16	18	62	10	34
16	19	188	30	99
16	20	299	48	120
16	21	18	3	6
16	22	117	19	57
16	23	209	33	98
16	24	195	31	107
16	25	68	11	35
16	26	73	12	38
16	27	74	12	30
16	28	20	3	9
16	29	74	12	39
16	30	26	4	8
16	31	48	8	25
16	32	66	11	35
16	33	74	12	36
16	34	79	13	41
16	35	80	13	34
16	36	609	42	326
16	37	182	29	98
16	38	55	9	28
16	39	78	12	41
16	40	16	3	8
16	41	171	23	89
16	42	55	9	25
16	43	77	12	29
16	44	47	8	20
16	45	84	13	36
16	46	56	9	27
16	47	22	4	11
16	48	66	11	34
16	49	48	8	19
16	50	99	15	40
16	51	30	5	10
16	52	96	15	43
16	53	140	22	56
16	54	97	16	40
16	55	72	12	35
16	56	64	10	31
16	57	66	11	18
16	58	14	2	6
16	59	74	12	39
16	60	58	9	27
16	61	13	2	8
16	62	38	6	20
16	63	52	8	28
16	64	20	3	8
16	65	68	11	35
16	66	15	2	8
16	67	35	6	18
16	68	6	1	3
16	69	30	5	15
16	70	26	4	14
16	71	12	2	6
16	72	14	2	7
16	73	7	1	4
16	74	12	2	5
16	75	21	3	11
16	76	21	3	10
16	77	16	3	9
16	78	17	3	10
16	79	6	1	3
16	80	4	1	2
16	81	6	1	2
16	82	10	2	5
16	83	134	21	68
17	18	6	1	2
17	19	10	2	5
17	20	5	1	1
17	21			
17	22	5		1
17	23			
17	24	5	1	2
17	25	2		1
17	26	2		1
17	27			
17	28			
17	29	2		1
17	30			
17	31			
17	32	2		1
17	33			
17	34	2	1	1
17	35	2		1
17	36	145	7	11
17	37	10	1	5
17	38			
17	39	3		1
17	40			
17	41	2		
17	42	4		1
17	43	4		1
17	44	2		1
17	45			
17	46	2		1
17	47			
17	48	2		1
17	49			
17	50	5	1	2
17	51			
17	52			
17	53	2	1	
17	54	6	1	1
17	55	5		1
17	56	1	1	1
17	57			
17	58			
17	59			
17	60			
17	61			
17	62			
17	63			
17	64			
17	65			
17	66			
17	67	1	1	1
17	68			
17	69			
17	70			
17	71			
17	72			
17	73			
17	74			
17	75	1	1	1
17	76			
17	77			

TABLE D-I — *Continued*

INTERNAL ZONE MOVEMENTS

1975

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
17	78			
17	79			
17	80			
17	81			
17	82			
17	83	3	1	2
18	19	98	16	54
18	20	42	7	22
18	21			
18	22	30	5	14
18	23	9	1	5
18	24	19	3	8
18	25	20	3	11
18	26	18	3	10
18	27			
18	28			
18	29	14	2	7
18	30			
18	31	12	2	6
18	32	20	3	11
18	33			
18	34	14	2	7
18	35	19	3	8
18	36	148	8	21
18	37	89	14	48
18	38	9	1	5
18	39	62	10	32
18	40			
18	41	4	1	
18	42	14	2	7
18	43	17	3	7
18	44	18	3	10
18	45	5	1	1
18	46	20	3	8
18	47	7	1	4
18	48	24	4	13
18	49	5	1	3
18	50	67	11	37
18	51			
18	52	10	2	5
18	53	5	1	1
18	54	14	2	5
18	55	30	5	17
18	56	15	2	8
18	57			
18	58	5	1	3
18	59	7	1	4
18	60	8	1	4
18	61			
18	62	10	2	5
18	63	18	3	10
18	64	5	1	2
18	65	5	1	3
18	66	8	1	4
18	67	15	2	8
18	68			
18	69	17	3	8
18	70	15	2	8
18	71	6	1	3
18	72	10	1	5
18	73			
18	74	4	1	2
18	75	6	1	3
18	76	3	1	2
18	77	4	1	1
18	78	5	1	1
18	79	4	1	1
18	80			
18	81			
18	82			
18	83	36	6	18
19	20	160	26	81
19	21	11	2	5
19	22	145	23	70
19	23	133	21	70
19	24	221	35	128
19	25	87	4	45
19	26	60	2	32
19	27	58	9	30
19	28	14	2	7
19	29	72	12	39
19	30	28	4	10
19	31	48	8	26
19	32	60	10	32
19	33	20	3	8
19	34	101	16	53
19	35	98	16	43
19	36	285	42	132
19	37	341	55	185
19	38	101	16	55
19	39	146	23	78
19	40	20	3	12
19	41	315	50	164
19	42	67	11	31
19	43	95	15	37
19	44	64	10	29
19	45	104	17	46
19	46	71	11	35
19	47	21	3	11
19	48	101	16	54
19	49	38	6	16
19	50	40	6	15
19	51	12	2	5
19	52	112	18	51
19	53	168	27	71
19	54	173	28	71
19	55	126	20	62
19	56	77	12	38
19	57	71	11	20
19	58	20	3	9
19	59	92	15	48
19	60	66	11	31
19	61	18	3	10
19	62	35	6	18
19	63	67	11	36
19	64	26	4	12
19	65	85	14	44
19	66	20	3	11
19	67	52	8	27
19	68	9	1	5
19	69	51	8	28
19	70	51	8	28
19	71	16	3	7
19	72	24	4	13
19	73	7	1	4
19	74	14	2	6
19	75	26	4	14
19	76	28	4	14
19	77	20	3	11
19	78	30	5	17
19	79	9	1	5
19	80	8	1	5
19	81	6	1	3
19	82	18	3	7
19	83	93	15	53
20	21	8	1	4
20	22	144	23	65
20	23	110	18	60
20	24	206	33	110
20	25	59	9	29
20	26	64	10	32
20	27	52	8	22
20	28	11	2	5
20	29	71	11	35
20	30	18	3	5
20	31	40	6	20
20	32	60	10	29
20	33	10	2	4
20	34	74	12	34
20	35	109	17	44
20	36	257	34	115
20	37	150	24	77
20	38	40	6	20
20	39	76	12	39
20	40	14	2	7
20	41	173	28	91
20	42	43	7	19
20	43	113	18	41
20	44	41	7	17
20	45	56	9	24
20	46	84	13	36
20	47	22	4	11
20	48	62	10	32
20	49	27	4	10
20	50	40	6	15
20	51	8	1	4
20	52	58	9	24
20	53	88	14	37
20	54	91	15	38
20	55	87	14	41
20	56	63	10	29
20	57	189	17	91
20	58	12	2	4
20	59	76	12	40
20	60	57	9	26
20	61	9	1	5
20	62	35	6	17
20	63	60	10	32
20	64	16	3	7
20	65	51	8	28
20	66	12	2	7
20	67	30	2	14
20	68	8	1	4
20	69	27	4	13
20	70	21	3	11
20	71	11	2	5
20	72	16	3	8
20	73	9	1	4
20	74	13	2	5
20	75	25	4	13
20	76	25	4	13
20	77	18	3	10
20	78	18	3	10
20	79	7	1	4
20	80	4	1	1
20	81	4	1	1
20	82	18	3	7
20	83	93	15	50
21	22	4		2
21	23			
21	24			
21	25	8	1	3
21	26	4		2
21	27			
21	28			
21	29	4		2
21	30			
21	31	4		2
21	32	3		1
21	33			
21	34	5	1	3
21	35	3		1
21	36	5	1	2
21	37	6	1	3
21	38			
21	39	3		1
21	40			
21	41			
21	42	3		1
21	43	5		1
21	44	3		1
21	45			
21	46	7	1	2
21	47	2		1
21	48	4		2
21	49			
21	50	18	3	7
21	51			
21	52			
21	53			
21	54			
21	55	6	1	3
21	56	4	1	2
21	57			
21	58			
21	59			
21	60	3		1
21	61			
21	62	3		1
21	63	4		2
21	64	2	1	1
21	65			
21	66	2	1	1
21	67	2	1	1
21	68			
21	69			
21	70			
21	71			
21	72	2	1	1
21	73			
21	74			
21	75	2	1	1
21	76			
21	77			
21	78			
21	79			
21	80			
21	81			
21	82			
21	83	6	1	3
22	23	61	10	33
22	24	133	21	70
22	25	96	18	43
22	26	48	9	23
22	27	37	6	15
22	28	5	1	2
22	29	67	12	31
22	30	16	3	5
22	31	41	7	20
22	32	73	13	34
22	33	8	1	3
22	34	91	15	38
22	35	74	14	31
22	36	293	47	94
22	37	122	23	60
22	38	35	6	18
22	39	70	13	34
22	40	7	1	4
22	41	162	30	84
22	42	54	10	24
22	43	85	16	33
22	44	34	6	14
22	45	49	8	20
22	46	85	16	33
22	47	25	4	11
22	48	69	13	34
22	49	39	7	16
22	50	145	23	74
22	51	4		1
22	52	78	12	35
22	53	79	13	34
22	54	59	11	24
22	55	74	14	33
22	56	60	10	29
22	57	28	4	7
22	58	8	1	3
22	59	41	7	21
22	60	43	8	19
22	61	10	2	5
22	62	45	8	20
22	63	52	9	27
22	64	18	3	7
22	65	46	7	24
22	66	12	2	7
22	67	26	4	11
22	68	5		2
22	69	16	3	9
22	70	17	3	8
22	71	9	1	5
22	72	14	2	7
22	73	5		1
22	74	11	2	4
22	75	23	4	12
22	76	24	4	11
22	77	13	2	7
22	78	11	2	6
22	79	4		2
22	80	3		1
22	81	4		2
22	82	11	2	4

TABLE D-I — *Continued*

INTERNAL ZONE MOVEMENTS

1975

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
22	83	74	12	36
23	24	85	15	40
23	25	86	14	45
23	26	91	15	45
23	27			
23	28			
23	29	61	10	33
23	30	1	1	
23	31	39	6	19
23	32	80	13	41
23	33			
23	34	112	18	47
23	35	31	5	16
23	36	54	9	29
23	37	95	15	51
23	38			
23	39	55	9	29
23	40			
23	41			
23	42	25	4	11
23	43	49	8	25
23	44	38	6	15
23	45			
23	46	84	13	40
23	47	34	5	18
23	48	60	10	33
23	49	14	2	8
23	50	40	7	21
23	51			
23	52	26	4	13
23	53	20	3	12
23	54			
23	55	73	12	38
23	56	38	6	20
23	57			
23	58	11	2	6
23	59			
23	60	28	4	14
23	61			
23	62	38	6	19
23	63	45	7	24
23	64	10	2	5
23	65			
23	66	8	1	5
23	67	23	4	11
23	68	4	1	1
23	69	14	2	8
23	70	11	2	6
23	71	6	1	3
23	72	13	2	7
23	73	4	1	1
23	74	4	1	1
23	75	16	3	9
23	76	14	2	8
23	77	8	1	4
23	78			
23	79	4	1	1
23	80			
23	81			
23	82			
23	83	80	13	44
24	25	154	25	82
24	26	142	23	78
24	27	16	3	8
24	28			
24	29	138	22	74
24	30			
24	31	59	9	32
24	32	147	24	77
24	33			
24	34	190	30	84
24	35	74	12	38
24	36	367	49	124
24	37	160	26	88
24	38			
24	39	102	16	56
24	40			
24	41	92	14	46
24	42	58	9	30
24	43	93	15	48
24	44	30	5	16
24	45	216	41	94
24	46	125	20	66
24	47	50	8	27
24	48	115	18	62
24	49	38	6	21
24	50	75	12	36
24	51			
24	52	72	12	38
24	53	46	7	23
24	54			
24	55	115	18	61
24	56	85	14	45
24	57	24	4	14
24	58			
24	59	142	22	73
24	60	37	6	19
24	61			
24	62	64	10	32
24	63	80	13	43
24	64	24	4	13
24	65	24	4	13
24	66	24	4	14
24	67	41	7	20
24	68	5	1	2
24	69	27	4	14
24	70	22	4	12
24	71	11	2	5
24	72	22	4	11
24	73			
24	74	13	2	6
24	75	30	5	16
24	76	4	1	22
24	77	16	3	8
24	78	6	1	2
24	79	5	1	2
24	80			
24	81			
24	82			
24	83	141	23	80
25	26	62	11	30
25	27	44	7	22
25	28	11	2	5
25	29	52	9	27
25	30	18	3	6
25	31	33	6	17
25	32	54	10	26
25	33	13	2	4
25	34	95	15	40
25	35	75	14	30
25	36	326	52	104
25	37	61	11	32
25	38	30	5	14
25	39	45	8	23
25	40	8	1	4
25	41	133	25	69
25	42	26	4	11
25	43	37	7	14
25	44	28	5	11
25	45	71	11	29
25	46	39	7	19
25	47	15	2	7
25	48	47	8	25
25	49	25	4	10
25	50	36	6	17
25	51	7	1	2
25	52	51	8	24
25	53	68	11	29
25	54	67	12	26
25	55	45	8	21
25	56	32	5	15
25	57	32	5	8
25	58	12	2	5
25	59	57	10	29
25	60	43	8	20
25	61	11	2	6
25	62	22	4	11
25	63	37	7	19
25	64	12	2	6
25	65	54	9	28
25	66	7	1	4
25	67	18	3	8
25	68	3		1
25	69	15	2	8
25	70	13	2	7
25	71	4		2
25	72	11	2	5
25	73	5		2
25	74	9	1	3
25	75	15	2	8
25	76	17	3	8
25	77	10	1	5
25	78	13	2	7
25	79	4		2
25	80	3		1
25	81	3		1
25	82	11	2	4
25	83	57	9	30
26	27	52	8	22
26	28	13	2	5
26	29	76	14	37
26	30	13	2	4
26	31	30	5	16
26	32	59	11	29
26	33	15	2	6
26	34	82	13	35
26	35	35	6	16
26	36	141	23	48
26	37	60	11	33
26	38	28	4	13
26	39	39	7	20
26	40	8	1	4
26	41	105	19	56
26	42	23	4	10
26	43	36	6	14
26	44	36	6	14
26	45	98	16	35
26	46	38	7	18
26	47	14	2	7
26	48	48	9	26
26	49	20	3	8
26	50	106	17	53
26	51	10	1	3
26	52	42	7	19
26	53	56	9	24
26	54	55	10	24
26	55	39	7	19
26	56	29	5	14
26	57	25	4	7
26	58	9	1	4
26	59	47	8	24
26	60	36	6	17
26	61	8	1	4
26	62	22	4	11
26	63	35	6	19
26	64	7	1	3
26	65	30	5	16
26	66	8	1	4
26	67	13	2	6
26	68	4		2
26	69	12	2	6
26	70	11	2	6
26	71	4		2
26	72	6	1	3
26	73	4		2
26	74	6	1	2
26	75	13	2	7
26	76	16	3	7
26	77	8	1	4
26	78	12	2	6
26	79	3		1
26	80	4		2
26	81	4		2
26	82	14	2	7
26	83	59	9	32
27	28			
27	29	96	15	37
27	30			
27	31	52	8	15
27	32	44	7	22
27	33			
27	34	80	13	26
27	35	22	4	7
27	36	58	6	14
27	37	37	6	15
27	38			
27	39	44	7	15
27	40			
27	41			
27	42	22	4	7
27	43	30	5	7
27	44	59	9	15
27	45			
27	46	59	9	30
27	47	15	2	7
27	48	30	5	15
27	49			
27	50	69	11	35
27	51			
27	52	24	4	12
27	53	31	6	15
27	54			
27	55	44	7	15
27	56	42	7	21
27	57			
27	58			
27	59			
27	60	22	4	7
27	61			
27	62	30	5	15
27	63	37	6	15
27	64			
27	65			
27	66			
27	67	15	2	5
27	68			
27	69			
27	70			
27	71			
27	72	11	2	4
27	73			
27	74			
27	75	11	2	4
27	76			
27	77			
27	78			
27	79			
27	80			
27	81			
27	82			
27	83	45	7	23
28	29	27	4	9
28	30			
28	31	9	1	4
28	32	11	2	5
28	33	9	1	5
28	34	11	2	5
28	35	5	1	2
28	36	129	21	42
28	37	9	1	4
28	38			
28	39	7	1	4
28	40			
28	41			
28	42	5	1	2
28	43	4	1	2
28	44	5	1	2
28	45			
28	46	22	4	9
28	47	4	1	2
28	48	7	1	4
28	49			
28	50	7	1	4
28	51			
28	52			
28	53			
28	54			
28	55	7	1	4
28	56	5	1	3
28	57	17	3	6

TABLE D-I — *Continued*

INTERNAL ZONE MOVEMENTS

1975

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
28	58			
28	59	25	5	8
28	60	5	1	2
28	61			
28	62	5	1	2
28	63	5	1	2
28	64			
28	65			
28	66			
28	67	4	1	1
28	68			
28	69			
28	70			
28	71			
28	72	3	1	1
28	73			
28	74			
28	75	3	1	1
28	76			
28	77			
28	78			
28	79			
28	80			
28	81			
28	82			
28	83	11	2	6
29	30	94	15	26
29	31	77	14	37
29	32	71	13	35
29	33	27	4	8
29	34	65	10	32
29	35	42	7	18
29	36	230	37	77
29	37	59	11	32
29	38	33	5	16
29	39	44	8	23
29	40	8	1	4
29	41	139	26	74
29	42	25	4	11
29	43	41	7	16
29	44	17	3	8
29	45	49	8	20
29	46	83	15	39
29	47	19	3	10
29	48	58	11	31
29	49	30	5	11
29	50	87	14	48
29	51	6	1	2
29	52	54	9	26
29	53	67	11	29
29	54	76	14	33
29	55	51	9	25
29	56	34	5	17
29	57	32	5	8
29	58	13	2	5
29	59	62	11	31
29	60	51	9	23
29	61	13	2	6
29	62	31	5	17
29	63	43	8	23
29	64	10	2	5
29	65	39	6	20
29	66	8	1	5
29	67	18	3	9
29	68	4		2
29	69	13	2	7
29	70	13	2	7
29	71	6	1	3
29	72	9	1	5
29	73	5		2
29	74	6	1	2
29	75	17	3	9
29	76	22	4	11
29	77	9	1	5
29	78	16	3	8
29	79	4		2
29	80	3		1
29	81	4		2
29	82	11	2	4
29	83	47	8	26
30	31	44	7	13
30	32	14	2	5
30	33			
30	34	20	3	6
30	35	11	2	2
30	36	71	3	28
30	37	20	3	6
30	38			
30	39	11	2	2
30	40			
30	41			
30	42	11	2	2
30	43	19	3	5
30	44	11	2	2
30	45	32	2	10
30	46	38	6	11
30	47	10	2	2
30	48	16	3	5
30	49	1	1	
30	50	25	4	9
30	51			
30	52	2	1	
30	53			
30	54			
30	55	16	3	4
30	56	11	2	4
30	57	1		
30	58	1	1	
30	59			
30	60	5	1	1
30	61			
30	62	12	2	2
30	63	12	2	5
30	64	4	1	1
30	65			
30	66			
30	67	5	1	1
30	68			
30	69			
30	70			
30	71			
30	72	2	1	1
30	73			
30	74			
30	75	2	1	1
30	76			
30	77			
30	78			
30	79			
30	80			
30	81			
30	82			
30	83	9	1	3
31	32	59	11	29
31	33	4	1	1
31	34	36	6	18
31	35	28	5	13
31	36	101	16	37
31	37	51	9	28
31	38	15	2	8
31	39	42	7	22
31	40	7	1	4
31	41	102	19	56
31	42	16	3	7
31	43	32	6	13
31	44	11	2	5
31	45	25	4	10
31	46	78	14	35
31	47	26	4	13
31	48	84	15	41
31	49	17	3	7
31	50	53	8	28
31	51	4		1
31	52	32	5	14
31	53	44	7	20
31	54	38	7	17
31	55	35	6	18
31	56	25	4	13
31	57	20	3	6
31	58	7	1	3
31	59	37	7	19
31	60	31	5	15
31	61	10	2	5
31	62	26	4	14
31	63	50	9	27
31	64	12	2	6
31	65	23	4	13
31	66	8	1	4
31	67	10	2	5
31	68	4		2
31	69	12	2	6
31	70	10	2	5
31	71	6	1	3
31	72	7	1	4
31	73	3		1
31	74	3		1
31	75	17	3	9
31	76	16	3	9
31	77	10	1	5
31	78	11	2	6
31	79	3		1
31	80	3		1
31	81	3		1
31	82	11	2	4
31	83	36	6	20
32	33	15	2	6
32	34	70	11	31
32	35	37	7	16
32	36	298	48	98
32	37	42	7	22
32	38	20	3	9
32	39	43	8	22
32	40	8	1	4
32	41	136	25	71
32	42	20	3	8
32	43	34	6	13
32	44	12	2	5
32	45	77	12	29
32	46	66	12	29
32	47	15	2	8
32	48	57	10	30
32	49	44	8	16
32	50	74	12	39
32	51	5		2
32	52	42	7	19
32	53	70	11	29
32	54	63	11	26
32	55	38	7	19
32	56	32	5	15
32	57	34	5	10
32	58	11	2	4
32	59	58	11	30
32	60	39	7	17
32	61	11	2	6
32	62	25	4	13
32	63	43	8	23
32	64	10	2	4
32	65	54	9	29
32	66	8	1	6
32	67	17	3	8
32	68	3		1
32	69	13	2	7
32	70	11	2	5
32	71	6	1	3
32	72	9	1	5
32	73	3		1
32	74	6	1	2
32	75	16	3	9
32	76	19	3	9
32	77	11	2	6
32	78	12	2	6
32	79	3		1
32	80	4		2
32	81	3		1
32	82	11	2	4
32	83	45	7	24
33	34	34	5	8
33	35	6	1	2
33	36	172	28	51
33	37	8	1	3
33	38			
33	39	13	2	4
33	40			
33	41			
33	42	6	1	2
33	43	8	1	2
33	44	10	2	4
33	45	34	6	10
33	46	34	5	11
33	47	4	1	2
33	48	10	2	4
33	49	4	1	2
33	50	16	3	7
33	51			
33	52	6	1	3
33	53	16	4	6
33	54			
33	55	7	1	3
33	56	7	1	2
33	57	60	10	25
33	58			
33	59	40	5	20
33	60	4	1	2
33	61			
33	62	6	1	2
33	63	8	1	3
33	64	3	1	2
33	65			
33	66	3	1	2
33	67	3	1	2
33	68			
33	69			
33	70			
33	71			
33	72	2	1	1
33	73			
33	74			
33	75	4	1	2
33	76	4	1	2
33	77			
33	78			
33	79			
33	80			
33	81			
33	82			
33	83	4	1	2
34	35	43	7	18
34	36	220	33	117
34	37	65	10	35
34	38	14	2	8
34	39	35	6	18
34	40	6	1	2
34	41	78	12	37
34	42	29	5	12
34	43	47	8	17
34	44	25	4	10
34	45	53	8	17
34	46	47	8	22
34	47	14	2	7
34	48	49	8	26
34	49	35	6	12
34	50	21	4	6
34	51	23	4	6
34	52	56	9	22
34	53	85	14	29
34	54	73	12	25
34	55	38	6	18
34	56	34	5	16
34	57	50	8	11
34	58	13	2	5
34	59	50	8	25
34	60	46	7	19
34	61	6	1	4
34	62	19	3	11
34	63	35	6	19
34	64	10	2	4
34	65	35	6	16
34	66	6	1	3
34	67	14	2	7

TABLE D-I — *Continued*

INTERNAL ZONE MOVEMENTS

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
34	68	5	1	3
34	69	10	2	5
34	70	9	1	5
34	71	5	1	3
34	72	6	1	3
34	73	4	1	2
34	74	10	2	4
34	75	12	2	6
34	76	12	2	6
34	77	7	1	4
34	78	10	2	5
34	79	4	1	2
34	80	4	1	2
34	81	4	1	2
34	82	35	6	18
34	83	69	11	33
35	36	375	44	105
35	37	90	17	40
35	38	25	4	11
35	39	50	9	22
35	40	4	1	1
35	41	103	19	53
35	42	40	7	16
35	43	67	12	22
35	44	16	3	6
35	45	35	6	14
35	46	70	13	25
35	47	19	3	7
35	48	42	7	19
35	49	28	5	10
35	50	69	11	32
35	51	4		1
35	52	50	8	21
35	53	49	8	19
35	54	46	8	17
35	55	56	10	23
35	56	44	7	18
35	57	69	5	17
35	58	16	3	6
35	59	29	5	14
35	60	36	6	15
35	61	5	1	3
35	62	27	5	11
35	63	32	6	15
35	64	14	2	6
35	65	30	5	15
35	66	8	1	5
35	67	25	4	10
35	68	4		2
35	69	15	2	6
35	70	10	2	4
35	71	4		2
35	72	9	1	4
35	73	3		
35	74	5		1
35	75	14	2	7
35	76	14	2	6
35	77	9	1	5
35	78	7	1	4
35	79	3		1
35	80	3		1
35	81	3		1
35	82	11	2	4
35	83	47	8	23
36	37	834	85	206
36	38	27	4	14
36	39	394	63	133
36	40	25	4	7
36	41	160	26	82
36	42	356	41	82
36	43	490	78	144
36	44	182	29	53
36	45	530	85	150
36	46	318	12	104
36	47	126	20	37
36	48	178	28	62
36	49	78	12	26
36	50	328	68	159
36	51	41	5	2
36	52	149	24	51
36	53	92	15	36
36	54	96	15	38
36	55	534	117	227
36	56	135	33	103
36	57	170	31	4
36	58	80	13	24
36	59	403	97	27
36	60	144	23	50
36	61	6	1	2
36	62	182	29	56
36	63	160	26	59
36	64	91	15	28
36	65	27	4	14
36	66	35	6	16
36	67	174	28	56
36	68	11	2	2
36	69	85	14	30
36	70	116	19	38
36	71	13	2	5
36	72	71	11	24
36	73	16	3	3
36	74	24	4	6
36	75	65	10	24
36	76	59	10	22
36	77	30	5	13
36	78	23	4	7
36	79	11	2	3
36	80	5	1	2
36	81	5	1	2
36	82	18	3	7
36	83	136	22	56
37	38	75	12	39
37	39	203	38	112
37	40	32	5	18
37	41	245	46	126
37	42	61	11	29
37	43	90	17	38
37	44	32	6	17
37	45	48	8	20
37	46	71	13	36
37	47	19	3	10
37	48	81	15	44
37	49	30	5	13
37	50	56	7	22
37	51	6	1	2
37	52	86	14	40
37	53	126	20	53
37	54	126	23	49
37	55	126	23	65
37	56	105	17	54
37	57	70	11	20
37	58	25	4	11
37	59	94	17	49
37	60	56	10	28
37	61	13	2	6
37	62	34	6	18
37	63	59	11	32
37	64	18	3	8
37	65	63	10	33
37	66	14	2	7
37	67	57	9	30
37	68	13	2	5
37	69	60	11	32
37	70	56	9	31
37	71	24	4	12
37	72	22	4	12
37	73	5		2
37	74	8	1	3
37	75	29	5	15
37	76	38	7	20
37	77	16	3	9
37	78	26	4	14
37	79	8	1	4
37	80	6	1	3
37	81	4		2
37	82	21	3	11
37	83	63	10	35
*38	39	109	17	53
38	40	10	2	5
38	41			
38	42	26	4	13
38	43	33	5	15
38	44	20	3	9
38	45			
38	46	46	7	21
38	47	10	2	5
38	48	36	6	18
38	49	5	1	3
38	50	35	6	18
38	51			
38	52	21	3	10
38	53			
38	54			
38	55	53	8	28
38	56	27	4	13
38	57	6	1	3
38	58	5	1	3
38	59	34	5	17
38	60	14	2	6
38	61			
38	62	14	2	6
38	63	18	3	8
38	64	4	1	2
38	65			
38	66	8	1	4
38	67	25	4	13
38	68	11	2	4
38	69	25	4	11
38	70	34	5	17
38	71	6	1	3
38	72	9	1	4
38	73			
38	74			
38	75	8	1	4
38	76	8	1	4
38	77	4	1	2
38	78			
38	79			
38	80			
38	81			
38	82			
38	83	17	3	9
39	40	24	4	13
39	41	182	28	75
39	42	52	9	23
39	43	48	9	19
39	44	18	3	8
39	45	37	6	16
39	46	53	10	26
39	47	17	3	9
39	48	61	11	33
39	49	23	4	10
39	50	83	13	44
39	51	5		2
39	52	67	11	30
39	53	83	13	36
39	54	47	6	12
39	55	54	8	21
39	56	69	11	35
39	57	42	7	11
39	58	18	3	8
39	59	82	15	43
39	60	40	7	19
39	61	11	2	6
39	62	26	4	13
39	63	38	7	21
39	64	14	2	6
39	65	48	8	24
39	66	11	2	6
39	67	39	6	20
39	68	17	3	9
39	69	52	9	27
39	70	49	8	26
39	71	17	3	7
39	72	18	3	9
39	73	5		2
39	74	8	1	2
39	75	23	4	12
39	76	26	4	13
39	77	12	2	6
39	78	17	3	8
39	79	6	1	3
39	80	5		2
39	81	3		1
39	82	11	2	4
39	83	38	6	20
40	41			
40	42	8	1	4
40	43	6	1	1
40	44	4	1	1
40	45			
40	46	10	2	5
40	47	4	1	1
40	48	8	1	4
40	49			
40	50	12	2	5
40	51			
40	52	6	1	2
40	53	2	1	
40	54	2	1	
40	55	19	3	11
40	56	17	3	8
40	57	31	5	18
40	58			
40	59			
40	60	4	1	1
40	61			
40	62	7	1	4
40	63	7	1	4
40	64	3	1	1
40	65			
40	66	3	1	1
40	67	8	1	4
40	68			
40	69	5	1	2
40	70	3	1	1
40	71			
40	72	3	1	1
40	73			
40	74			
40	75	4	1	2
40	76	4	1	1
40	77			
40	78			
40	79			
40	80			
40	81			
40	82			
40	83	8	1	3
41	42	103	19	53
41	43	140	26	69
41	44	42	7	20
41	45			
41	46	109	16	60
41	47	68	12	34
41	48	139	26	74
41	49	2		
41	50	83	13	47
41	51			
41	52	75	12	38
41	53	211	32	100
41	54	64	18	28
41	55	248	47	126
41	56	207	33	102
41	57	27	2	12
41	58	36	6	19
41	59	53	8	24
41	60	43	8	22
41	61			
41	62	75	14	38
41	63	117	22	60
41	64	29	5	14
41	65			
41	66	25	4	14
41	67	112	18	59
41	68			
41	69	47	8	25
41	70	54	9	26
41	71	4		1
41	72	37	6	20

*Projections do not assume conversion of Airport to Industrial Park.

TABLE D-I — *Continued*

INTERNAL ZONE MOVEMENTS

1975

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
41	73	2		
41	74	2		
41	75	53	8	28
41	76	46	8	24
41	77			
41	78			
41	79			
41	80			
41	81			
41	82			
41	83	65	12	36
42	43	46	8	15
42	44	11	2	4
42	45	30	5	11
42	46	37	7	14
42	47	13	2	5
42	48	32	6	15
42	49	21	3	7
42	50	48	8	23
42	51	4		1
42	52	42	7	18
42	53	61	10	24
42	54	62	11	24
42	55	60	11	25
42	56	31	5	13
42	57	15	2	4
42	58	11	2	4
42	59	45	8	22
42	60	27	5	11
42	61	8	1	4
42	62	16	3	6
42	63	22	4	11
42	64	10	2	3
42	65	33	5	16
42	66	6	1	3
42	67	14	2	6
42	68	3		1
42	69	14	2	6
42	70	20	3	9
42	71	8	1	3
42	72	10	2	5
42	73	3		1
42	74	5		1
42	75	12	2	6
42	76	13	2	7
42	77	6	1	3
42	78	12	2	6
42	79	3		1
42	80	4		2
42	81	3		1
42	82	11	2	4
42	83	21	3	11
43	44	30	5	10
43	45	51	8	19
43	46	157	29	45
43	47	15	2	7
43	48	42	7	17
43	49	33	6	11
43	50	62	10	28
43	51	5		1
43	52	64	10	24
43	53	86	14	31
43	54	90	17	33
43	55	78	14	28
43	56	48	8	18
43	57	27	3	12
43	58	21	3	7
43	59	60	11	29
43	60	58	11	22
43	61	8	1	4
43	62	35	6	12
43	63	35	6	16
43	64	15	2	5
43	65	36	6	16
43	66	8	1	3
43	67	26	4	10
43	68	3		1
43	69	20	3	8
43	70	12	2	5
43	71	7	1	2
43	72	14	2	5
43	73	5		1
43	74	11	2	3
43	75	18	3	7
43	76	21	3	9
43	77	6	1	3
43	78	17	3	7
43	79	4		2
43	80	3		1
43	81	3		1
43	82	11	2	4
43	83	27	4	12
44	45	31	5	12
44	46	19	3	7
44	47	5		2
44	48	17	3	9
44	49	8	1	3
44	50	46	7	18
44	51	9	1	2
44	52	18	3	6
44	53	25	4	10
44	54	23	4	9
44	55	15	2	6
44	56	14	2	6
44	57	17	3	4
44	58	4		1
44	59	20	3	10
44	60	11	2	4
44	61	38	6	1
44	62	8	1	3
44	63	9	1	4
44	64	3		1
44	65	13	2	6
44	66	3		2
44	67	5	1	2
44	68	1		
44	69	6	1	3
44	70	4	1	2
44	71	3		1
44	72	2		1
44	73	1		
44	74	2		1
44	75	4	1	2
44	76	5		2
44	77	3		1
44	78	5	1	2
44	79	2		1
44	80			
44	81			
44	82			
44	83	30	5	14
45	46	203	32	66
45	47	28	4	10
45	48	44	7	19
45	49	11	2	4
45	50	69	11	30
45	51			
45	52	29	4	11
45	53	1		
45	54	1		
45	55	52	8	20
45	56	35	6	14
45	57	16	1	6
45	58	4	1	
45	59	64	3	22
45	60	34	5	14
45	61			
45	62	34	5	12
45	63	38	6	18
45	64	10	2	4
45	65	23	1	8
45	66	5	1	3
45	67	17	3	7
45	68	4	1	1
45	69	11	2	4
45	70	8	1	3
45	71	4	1	1
45	72	9	1	4
45	73	2		
45	74	2		
45	75	15	2	7
45	76	13	2	6
45	77	4	1	1
45	78	5	1	1
45	79	4	1	1
45	80			
45	81			
45	82			
45	83	51	8	24
46	47	25	4	12
46	48	100	19	45
46	49	117	22	35
46	50	10	1	4
46	51	10	1	3
46	52	181	29	64
46	53	142	23	50
46	54	53	9	20
46	55	66	12	28
46	56	43	7	18
46	57	14	1	4
46	58	16	3	6
46	59	125	23	60
46	60	64	2	23
46	61	14	2	8
46	62	37	7	18
46	63	66	12	33
46	64	16	3	6
46	65	83	13	39
46	66	12	2	7
46	67	21	3	10
46	68	5		2
46	69	20	3	10
46	70	15	2	8
46	71	8	1	3
46	72	12	2	6
46	73	3		1
46	74	13	2	4
46	75	23	4	12
46	76	30	5	14
46	77	14	2	7
46	78	23	4	12
46	79	6	1	3
46	80	5		2
46	81	6	1	3
46	82	18	3	7
46	83	41	7	21
47	48	71	5	28
47	49	15	2	5
47	50	25	4	14
47	51	3		1
47	52	27	4	10
47	53	43	7	17
47	54	40	7	15
47	55	21	3	10
47	56	15	2	7
47	57	22	4	6
47	58	5		2
47	59	35	6	16
47	60	22	4	9
47	61	6	1	3
47	62	19	3	10
47	63	86	2	19
47	64	6	1	2
47	65	30	5	15
47	66	5	1	2
47	67	9	1	4
47	68	2		1
47	69	10	1	5
47	70	6	1	3
47	71	2		1
47	72	4	1	2
47	73	3		1
47	74	7	1	2
47	75	10	2	5
47	76	12	2	6
47	77	5		2
47	78	7	1	4
47	79	2		1
47	80	2		1
47	81	3		1
47	82	7	1	4
47	83	14	2	8
48	49	71	13	24
48	50	10	1	3
48	51	4		1
48	52	94	15	37
48	53	106	17	47
48	54	77	14	33
48	55	65	12	33
48	56	46	7	24
48	57	31	5	8
48	58	13	2	5
48	59	61	11	31
48	60	108	20	45
48	61	19	3	10
48	62	69	13	33
48	63	97	18	53
48	64	14	2	7
48	65	59	9	31
48	66	14	2	8
48	67	25	4	13
48	68	6	1	3
48	69	18	3	10
48	70	17	3	9
48	71	3		1
48	72	12	2	6
48	73	4		2
48	74	8	1	3
48	75	27	4	15
48	76	44	8	23
48	77	16	3	9
48	78	20	3	11
48	79	5		2
48	80	5		2
48	81	5		2
48	82	18	3	7
48	83	41	7	23
49	50	37	6	16
49	51			
49	52	21	3	8
49	53	24	4	10
49	54	22	4	8
49	55	76	2	32
49	56	25	4	9
49	57	17	1	7
49	58	8	1	2
49	59	25	4	8
49	60	27	5	11
49	61	4	1	1
49	62	31	5	11
49	63	32	6	13
49	64	16	3	5
49	65	9	1	4
49	66	2		1
49	67	12	2	5
49	68	1		
49	69	6	1	3
49	70	5	1	1
49	71	1		
49	72	8	1	3
49	73	3		
49	74	4		1
49	75	11	2	4
49	76	9	1	3
49	77	5		2
49	78	5	1	3
49	79			
49	80			
49	81	3		1
49	82	11	2	4
49	83	14	2	6
50	51	21	4	7
50	52	30	4	6
50	53	33	5	9
50	54	6	1	3
50	55	22	3	9
50	56	14	1	6
50	57	9	1	2
50	58	16	3	7
50	59	35	4	13

TABLE D-I — *Continued*

INTERNAL ZONE MOVEMENTS

1975

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
50	60	13	2	3
50	61	18	3	9
50	62	44	7	23
50	63	11	1	5
50	64	18	3	10
50	65	25	2	11
50	66	17	3	9
50	67	29	5	15
50	68	9	1	5
50	69	28	4	14
50	70	19	3	11
50	71	9	1	5
50	72	14	2	7
50	73	9	1	5
50	74	16	3	5
50	75	21	3	11
50	76	30	5	16
50	77	18	3	9
50	78	22	4	11
50	79	7	1	2
50	80	7	1	2
50	81	9	1	5
50	82	25	4	7
50	83	60	7	30
51	52			
51	53			
51	54			
51	55	6	1	2
51	56	4	1	1
51	57			
51	58			
51	59			
51	60	4		1
51	61			
51	62	4		1
51	63	3		1
51	64			
51	65			
51	66			
51	67	3		1
51	68			
51	69			
51	70			
51	71			
51	72			
51	73			
51	74			
51	75	2		1
51	76			
51	77			
51	78			
51	79			
51	80			
51	81			
51	82			
51	83	6	1	3
52	53	64	7	22
52	54	37	6	13
52	55	101	16	43
52	56	41	7	19
52	57	16	2	7
52	58	19	3	8
52	59	32	5	14
52	60	50	8	22

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
52	61	6	1	3
52	62	40	6	16
52	63	62	10	30
52	64	30	5	11
52	65	66	5	14
52	66	14	2	6
52	67	25	4	11
52	68	2		
52	69	22	4	10
52	70	16	3	8
52	71	2		
52	72	15	2	7
52	73	5	1	
52	74	6	1	2
52	75	20	3	10
52	76	21	3	10
52	77	8	1	3
52	78	10	2	4
52	79			
52	80			
52	81	5	1	2
52	82	18	3	7
52	83	32	5	17
53	54	76	7	24
53	55	149	24	59
53	56	130	21	48
53	57	87	3	26
53	58	20	3	8
53	59	102	15	40
53	60	48	8	19
53	61			
53	62	54	9	19
53	63	59	9	28
53	64	43	7	15
53	65	76	8	33
53	66	29	5	11
53	67	39	6	17
53	68	32	4	12
53	69	20	3	8
53	70	19	3	8
53	71	5	1	1
53	72	19	3	8
53	73	2		
53	74	4	1	
53	75	25	4	11
53	76	20	3	8
53	77	5	1	1
53	78	6	1	1
53	79			
53	80			
53	81			
53	82			
53	83	36	6	18
54	55	155	29	59
54	56	139	22	50
54	57	21	1	9
54	58	22	4	8
54	59	29	2	10
54	60	33	6	14
54	61			
54	62	54	10	21
54	63	44	8	21
54	64	14	2	6
54	65			

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
54	66	20	3	9
54	67	47	8	20
54	68	15	2	3
54	69	30	5	14
54	70	25	4	10
54	71	4		1
54	72	18	3	7
54	73	4		1
54	74	6	1	1
54	75	22	4	10
54	76	20	3	8
54	77	4		1
54	78	5	1	1
54	79	7	1	1
54	80			
54	81			
54	82			
54	83	44	7	23
55	56	116	19	49
55	57	38	6	11
55	58	23	4	9
55	59	99	18	51
55	60	59	11	27
55	61	13	2	6
55	62	28	5	13
55	63	48	9	25
55	64	17	3	7
55	65	64	10	33
55	66	19	3	10
55	67	46	7	24
55	68	12	2	4
55	69	48	9	24
55	70	28	4	14
55	71	14	2	6
55	72	18	3	9
55	73	8	1	3
55	74	9	1	3
55	75	21	3	10
55	76	31	5	15
55	77	12	2	6
55	78	22	4	12
55	79	11	2	5
55	80	5		2
55	81	4		2
55	82	18	3	7
55	83	33	5	17
56	57	157	9	75
56	58	27	4	11
56	59	53	8	27
56	60	44	7	20
56	61	9	1	5
56	62	40	6	19
56	63	42	7	22
56	64	14	2	6
56	65	84	13	40
56	66	23	4	11
56	67	45	7	22
56	68	8	1	3
56	69	27	4	14
56	70	22	4	11
56	71	22	4	11
56	72	32	5	15
56	73	18	3	7
56	74	8	1	3

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
56	75	24	4	13
56	76	27	4	14
56	77	16	3	9
56	78	29	5	13
56	79	6	1	2
56	80	6	1	4
56	81	6	1	3
56	82	21	3	14
56	83	29	5	15
57	58	131	17	31
57	59	258	42	72
57	60	14	2	3
57	61			
57	62	42	7	10
57	63	38	6	10
57	64	19	3	5
57	65			
57	66	14	2	3
57	67	12	2	4
57	68	11	2	3
57	69	10	2	3
57	70	15	2	3
57	71	6	1	1
57	72	25	4	7
57	73	18	3	4
57	74	4	1	
57	75	10	2	3
57	76	7	1	1
57	77	6	1	1
57	78			
57	79	67	12	19
57	80			
57	81			
57	82			
57	83	9	1	2
58	59	15	2	7
58	60	16	3	7
58	61	4	1	2
58	62	11	2	4
58	63	15	2	7
58	64	7	1	2
58	65	16	3	8
58	66	6	1	2
58	67	7	1	4
58	68	1		
58	69	5		2
58	70	4	1	1
58	71	1		
58	72	3		1
58	73	1		
58	74	9	1	2
58	75	7	1	3
58	76	6	1	3
58	77	4		2
58	78	6	1	3
58	79	2		1
58	80	3		1
58	81	3		1
58	82	11	2	4
58	83	9	1	5
59	60	42	7	22
59	61	9	1	4
59	62	62	11	31
59	63	63	11	32

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
59	64	28	4	14
59	65	110	14	31
59	66	26	4	13
59	67	27	4	13
59	68			
59	69	18	3	10
59	70	14	2	8
59	71			
59	72	13	2	6
59	73	12	2	5
59	74	12	2	5
59	75	33	5	18
59	76	26	4	14
59	77	42	3	14
59	78			
59	79			
59	80			
59	81			
59	82			
59	83	48	8	27
60	61	9	1	4
60	62	92	17	34
60	63	61	11	29
60	64	26	4	10
60	65	44	7	23
60	66	20	3	9
60	67	27	4	12
60	68	1		
60	69	12	2	6
60	70	14	2	7
60	71	3		1
60	72	15	3	7
60	73	10	1	4
60	74	10	1	3
60	75	25	4	12
60	76	21	3	10
60	77	13	2	7
60	78	10	2	5
60	79	2		1
60	80	3		1
60	81	4		2
60	82	11	2	4
60	83	33	5	17
61	62	11	2	6
61	63	19	3	10
61	64	4	1	2
61	65			
61	66	4	1	2
61	67	7	1	4
61	68			
61	69	4	1	1
61	70	3		1
61	71			
61	72	4	1	2
61	73	4	1	1
61	74			
61	75	7	1	4
61	76	5	1	3
61	77	4	1	1
61	78			
61	79			
61	80			
61	81			
61	82			
61	83	8	1	5

TABLE D-I — *Continued*

INTERNAL ZONE MOVEMENTS

1975

Zone	Zone	Trips Auto Driver	Trips Truck Driver	Trips Auto Passenger
62	63	71	13	36
62	64	32	5	12
62	65	63	10	25
62	66	11	2	5
62	67	13	2	6
62	68	4		2
62	69	10	1	5
62	70	8	1	4
62	71	4		2
62	72	11	2	6
62	73	6	1	3
62	74	8	1	3
62	75	34	5	15
62	76	30	5	15
62	77	12	2	6
62	78	13	2	7
62	79	3		1
62	80	4		2
62	81	5		2
62	82	11	2	4
62	83	20	3	11
63	64	26	4	12
63	65	59	9	31
63	66	22	4	12
63	67	22	4	12
63	68	4		2
63	69	15	2	8
63	70	16	3	8
63	71	6	1	3
63	72	21	3	12
63	73	9	1	5
63	74	11	2	5
63	75	48	8	26
63	76	54	10	29
63	77	27	5	15
63	78	32	5	18
63	79	4		2
63	80	6	1	3
63	81	8	1	4
63	82	28	4	14
63	83	36	6	20
64	65	25	4	11
64	66	8	1	3
64	67	8	1	4
64	68	1		
64	69	4	1	2
64	70	5	1	2
64	71	4	1	2
64	72	5	1	2
64	73	6	1	2
64	74	10	2	3
64	75	15	2	6
64	76	14	2	6
64	77	7	1	4
64	78	7	1	4
64	79	2		1
64	80	2		1
64	81	2		1
64	82	7	1	4
64	83	6	1	3
65	66	23	4	11
65	67	25	4	13
65	68			
65	69	19	3	10
65	70	11	2	6
65	71	9	1	4
65	72	26	4	13
65	73	16	3	5
65	74	20	3	7
65	75	38	6	19
65	76	30	5	14
65	77	18	3	9
65	78			
65	79	18	4	10
65	80			
65	81			
65	82			
65	83	35	6	18
66	67	8	1	4
66	68	1		
66	69	8	1	4
66	70	6	1	3
66	71	4	1	1
66	72	7	1	4
66	73	4	1	1
66	74	5	1	1
66	75	10	2	6
66	76	11	2	5
66	77	8	1	4
66	78	8	1	5
66	79	2		1
66	80	2		1
66	81	2		1
66	82	7	7	4
66	83	9	1	5
67	68	7	1	4
67	69	22	4	11
67	70	20	3	11
67	71	13	2	6
67	72	15	2	8
67	73	5	1	2
67	74	6	1	2
67	75	14	2	8
67	76	15	2	8
67	77	10	2	5
67	78	16	3	8
67	79	4	1	2
67	80	4	1	1
67	81	3	1	1
67	82	11	2	4
67	83	14	2	8
68	69	10	1	5
68	70	8	1	4
68	71	1		
68	72	3	1	1
68	73	1		
68	74			
68	75	3	1	1
68	76	1		
68	77	1		
68	78	4	1	1
68	79			
68	80			
68	81			
68	82			
68	83	6	1	3
69	70	35	6	20
69	71	10	1	5
69	72	12	2	7
69	73	4		2
69	74	4		2
69	75	7	1	4
69	76	10	1	5
69	77	10	1	5
69	78	10	2	5
69	79	7	1	3
69	80	3		1
69	81	3		1
69	82	11	2	4
69	83	12	2	6
70	71	8	1	5
70	72	7	1	4
70	73	1	1	
70	74	2	1	1
70	75	6	1	3
70	76	9	1	5
70	77	6	1	3
70	78	6	1	3
70	79	3	1	2
70	80	2	1	1
70	81	2	1	1
70	82	7	1	4
70	83	9	1	5
71	72	7	1	3
71	73			
71	74	2		1
71	75	6	1	3
71	76	4		2
71	77	3		1
71	78	6	1	2
71	79	2		1
71	80	3		1
71	81			
71	82	11	2	4
71	83	6	1	3
72	73	6	1	3
72	74	8	1	3
72	75	8	1	5
72	76	14	2	7
72	77	6	1	3
72	78	14	2	8
72	79	5	1	3
72	80	3	1	1
72	81	2	1	1
72	82	7	1	4
72	83	6	1	3
73	74	4		1
73	75	7	1	3
73	76	7	1	3
73	77	5		2
73	78	7	1	4
73	79	2		1
73	80			
73	81	3		1
73	82			
73	83	6	1	3
74	75	13	2	5
74	76	11	2	5
74	77	6	1	3
74	78	6	1	3
74	79			
74	80			
74	81	3		1
74	82	11	2	4
74	83	5	1	2
75	76	21	3	11
75	77	13	2	7
75	78	12	2	6
75	79	5	1	3
75	80	3	1	1
75	81	4	1	2
75	82	11	2	4
75	83	15	2	9
76	77	23	4	13
76	78	26	4	14
76	79	7	1	3
76	80	5		2
76	81	4		2
76	82	21	3	11
76	83	18	3	9
77	78	13	2	7
77	79	3		1
77	80	3		1
77	81	3		1
77	82	11	2	4
77	83	11	2	5
78	79	6	1	2
78	80			
78	81			
78	82			
78	83	12	2	6
79	80	3		1
79	81			
79	82			
79	83	5	1	2
80	81			
80	82			
80	83	5	1	2
81	82			
81	83	5	1	2
82	83	17	3	6
TOTAL		**128,653**	**20,363**	**56,046**

TABLE D-II

EXTERNAL TO INTERNAL MOVEMENTS

Autos and Trucks (1)

1975

STATION 1

Zone	Auto	Tr.	Zone	Auto	Tr.
1	13	—	44	13	—
3	26	21	45	115	8
4	2	8	46	21	—
5	8	—	47	42	8
6	13	—	48	34	8
7	13	—	49	60	47
8	13	13	50	13	13
9	110	34	51	42	—
10	13	—	52	89	42
16	42	8	53	115	149
18	60	21	54	68	13
19	81	42	55	68	13
20	60	26	56	94	26
22	81	13	57	55	8
23	26	5	58	13	—
24	157	13	59	292	110
25	81	—	60	47	34
26	21	8	62	2	8
27	2	8	63	47	—
28	13	—	64	13	8
29	47	—	65	110	55
30	55	8	67	55	8
31	2	8	68	13	—
32	13	—	70	21	—
33	34	—	71	13	8
34	21	—	72	8	8
35	89	8	74	60	94
36	259	21	75	26	8
37	94	21	76	60	—
38	13	26	77	212	81
39	21	8	78	21	13
40	21	—	79	42	26
41	102	123	81	13	1
42	68	8	83	13	7
43	68	—			
			Total	3,652	1,255

STATION 2

Zone	Auto	Tr.	Zone	Auto	Tr.
1	17	5	10	10	—
3	58	26	16	36	10
4	26	5	17	—	5
5	22	—	18	31	26
6	22	22	19	31	17
7	31	—	20	62	26
8	22	17	22	43	5
9	163	22	23	70	17
24	110	—	54	36	22
25	58	5	55	22	17
26	48	—	56	62	42
27	—	—	57	26	5
28	22	5	58	10	—
29	17	—	59	394	85
30	31	5	60	31	10
31	10	—	61	5	—
32	58	—	62	10	—
33	43	—	63	26	10
34	48	—	64	17	—
35	101	10	65	101	36
36	405	22	66	17	—
37	70	17	67	36	5
38	48	10	68	—	5
39	31	10	69	17	10
40	5	—	70	22	—
41	110	41	71	—	10
42	43	5	72	17	5
43	62	5	74	110	10
44	26	—	75	36	19
45	89	5	76	36	17
46	36	—	77	262	80
47	43	—	78	5	5
48	17	—	79	22	26
49	43	10	82	10	—
50	10	5	83	26	—
51	22	—			
52	53	10			
53	70	60	Total	3,729	1,036

STATION 3

Zone	Auto	Tr.	Zone	Auto	Tr.
1	46	55	25	16	—
2	8	—	26	16	—
3	55	8	29	8	—
5	16	—	31	8	8
6	8	8	32	3	8
7	16	—	34	30	—
8	8	8	35	8	—
9	123	16	36	208	22
10	16	—	37	162	93
16	38	—	38	22	—
18	85	162	39	8	—
19	38	8	41	30	61
20	3	22	42	8	—
22	61	22	43	8	—
23	8	8	44	8	—
24	154	16	45	30	—
46	16	8	61	8	—
47	30	—	62	8	—
48	8	—	63	8	—
49	8	—	65	8	8
50	8	—	66	8	—
51	8	—	70	16	—
52	8	—	74	30	—
53	8	38	75	8	1
55	16	—	77	3	8
56	2	8	78	2	8
57	22	—	82	8	—
58	16	—	83	16	8
59	8	22			
60	16	16			
			Total	1,553	650

STATION 4

Zone	Auto	Tr.	Zone	Auto	Tr.
1	41	7	39	53	—
2	14	7	40	14	7
3	67	—	41	151	115
4	7	—	43	34	7
5	7	—	44	14	—
6	26	—	45	82	22
7	19	—	46	19	—
8	7	—	47	19	—
9	127	19	48	26	—
10	7	7	49	48	7
16	74	14	50	19	—
18	237	94	51	14	—
19	82	7	52	26	19
20	162	26	53	86	127
21	7	—	54	74	60
22	60	34	55	86	7
23	14	—	56	34	7
24	154	14	57	216	14
25	41	1	58	26	—
26	14	1	59	127	48
27	14	1	60	60	41
29	14	1	62	7	7
30	14	7	63	34	—
31	7	1	64	7	—
32	26	—	65	86	26
33	7	—	67	7	7
34	48	14	68	14	7
35	154	34	70	26	14
36	456	41	71	7	—
37	101	48	72	7	—
38	168	—	74	14	—
75	14	—	83	19	—
76	14	14			
77	7	—			
82	7	—	Total	3,674	934

STATION 5

Zone	Auto	Tr.	Zone	Auto	Tr.
1	6	—	45	15	—
2	43	39	47	9	—
3	15	—	48	6	6
5	6	—	49	24	—
6	9	—	51	—	6
9	9	—	52	24	—
16	82	—	53	63	30
18	6	—	54	67	9
19	33	19	55	9	—
20	104	42	56	9	—
22	33	—	57	43	—
23	6	15	58	6	—
24	15	—	59	15	—
25	15	9	62	—	6
26	6	—	63	6	6
30	6	—	65	6	6
32	9	6	68	9	—
33	9	6	69	6	—
34	9	—	70	15	—
35	43	—	72	6	—
36	162	19	74	6	—
37	39	6	76	6	6
40	9	46	77	9	19
41	43	52	79	—	6
42	19	—	83	19	—
43	24	6			
44	6	—	Total	1,144	365

STATION 6

Zone	Auto	Tr.	Zone	Auto	Tr.
1	24	—	19	54	6
2	6	—	20	58	9
3	392	58	21	6	—
4	30	—	22	112	33
5	43	9	23	227	37
6	54	6	24	242	33
7	30	9	25	130	24
8	30	19	26	48	—
9	130	—	27	19	—
10	43	6	28	9	—
16	63	30	29	39	—
18	24	19	30	33	6
32	39	6	56	9	6
33	58	6	57	63	6
34	63	15	58	6	—
35	145	15	59	106	30
36	314	15	60	24	9
37	48	9	62	15	6
38	24	—	63	33	—
39	33	—	64	19	—
40	9	9	65	87	24
41	39	48	67	15	9
42	15	—	69	—	6
43	54	—	70	19	—
44	19	—	73	6	—
45	154	9	74	15	9
46	48	6	76	30	—
47	73	9	77	33	6
48	9	19	78	19	—
49	54	19	79	6	—
50	33	—	81	—	6
51	106	6	82	6	—
52	39	15	83	78	6
53	63	45			
54	15	6	Total	3,913	690
55	24	6			

STATION 7

Zone	Auto	Tr.	Zone	Auto	Tr.
1	22	4	29	19	—
3	26	—	30	4	9
4	26	—	31	4	—
5	32	—	32	19	—
6	32	4	33	41	—
7	13	—	34	48	4
8	—	9	35	63	9
9	32	—	36	221	12
10	13	—	37	41	9
16	89	18	39	13	—
18	13	4	40	9	—
19	32	18	41	48	13
20	111	9	42	4	—
21	9	—	43	13	—
22	45	4	44	58	4
23	67	4	45	32	—
24	124	18	46	4	4
25	63	4	47	22	—
26	13	—	48	13	—
27	19	—	49	32	13
28	4	—	50	13	4

(1) C. B. D. excluded

TABLE D-II — *Continued*

EXTERNAL TO INTERNAL MOVEMENTS

Autos and Trucks

1975

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
51	26	—	65	22	4
52	22	4	68	4	—
53	45	13	69	4	—
54	35	4	70	9	9
55	13	—	72	—	4
56	13	9	74	13	—
57	32	—	76	13	—
59	58	13	77	9	4
60	4	—	79	13	4
61	4	—	82	—	—
62	9	4	83	130	13
63	19	—			
64	4	—	Total	2,007	262

STATION 8

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
1	24	—	41	115	165
2	10	10	42	10	—
3	76	5	43	52	10
4	34	18	44	63	—
5	68	24	45	81	18
6	394	40	46	47	—
7	81	18	47	52	5
8	—	18	48	24	10
9	110	5	49	58	24
10	121	18	50	34	5
16	63	18	51	45	—
17	18	—	52	76	48
18	34	10	53	68	59
19	63	—	54	34	24
20	171	25	55	47	5
21	5	—	56	47	5
22	135	24	57	58	5
23	191	5	58	10	—
24	335	65	59	105	39
25	81	5	60	39	10
26	86	5	62	18	—
27	76	10	63	39	—
29	86	18	64	24	5
30	39	18	65	105	24
31	18	—	66	10	5
32	76	—	67	5	5
33	135	—	68	5	—
34	97	30	69	10	5
35	97	24	70	24	10
36	500	18	71	5	—
37	105	5	72	5	10
38	97	10	74	5	10
39	63	—	75	29	—

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
76	47	5	79	—	18
77	10	10	82	5	—
78	5	—	83	39	5
			Total	4,944	990

STATION 10

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
1	12	—	43	48	—
2	6	6	44	18	—
3	36	31	45	79	30
5	12	—	46	24	6
6	6	12	47	24	6
7	30	6	48	12	6
8	24	6	49	55	12
9	103	—	50	42	—
10	42	—	51	6	—
16	30	6	52	36	12
18	30	49	53	55	18
19	48	6	54	30	36
20	91	12	55	36	—
21	6	—	56	30	12
22	30	24	57	55	24
23	36	—	58	6	6
24	114	12	59	85	61
25	72	6	60	36	30
26	55	6	62	18	12
27	48	6	63	36	—
28	18	—	64	6	6
29	73	18	65	79	18
30	144	6	66	—	6
31	55	—	67	18	6
32	24	6	68	6	—
33	42	6	69	18	6
34	36	—	70	12	6
35	85	37	71	—	6
36	290	6	72	18	6
37	55	43	74	6	6
38	42	6	75	18	6
39	6	12	76	—	6
40	—	12	77	12	18
41	97	129	83	6	—
42	12	12			
			Total	2,740	848

STATION 11

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
1	19	—	3	24	24
2	7	—	5	43	7

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
6	50	19	47	319	19
7	31	—	48	149	7
9	181	12	49	94	31
10	12	—	50	12	—
16	122	12	51	31	—
17	—	63	52	43	24
18	38	38	53	137	75
19	103	—	54	55	95
20	82	—	55	24	12
21	7	—	56	38	12
22	101	71	57	125	12
23	86	7	58	7	—
24	242	12	59	132	24
25	106	12	60	50	50
26	31	7	61	7	—
27	12	—	62	12	—
28	7	—	63	163	7
29	43	—	64	19	7
30	19	7	65	101	19
31	12	—	66	7	—
32	70	—	67	43	7
33	132	—	68	7	—
34	62	—	69	19	7
35	149	19	70	12	—
36	552	—	71	7	7
37	38	24	72	19	—
38	43	7	74	7	—
39	55	—	75	70	7
40	12	7	76	50	12
41	113	71	77	—	24
42	31	7	79	7	7
43	74	24	82	12	—
44	12	—	83	19	7
45	163	7			
46	43	—	Total	4,724	929

STATION 20

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
1	7	—	23	7	7
5	15	—	24	38	16
6	53	—	25	15	—
7	37	22	26	30	—
9	15	—	28	7	—
10	7	7	29	15	—
16	15	—	30	—	7
18	7	—	31	7	—
19	7	—	32	7	7
20	38	31	34	7	—
22	7	—	35	7	7

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
36	38	7	55	23	7
40	7	—	56	7	—
41	7	31	59	31	7
42	7	7	62	15	—
43	—	7	65	—	7
45	23	—	66	7	—
48	7	—	73	7	—
49	38	38	77	7	—
50	7	—	79	7	—
53	7	7	83	7	—
54	7	—			
			Total	607	222

STATION 21

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
3	7	—	35	34	—
6	24	—	36	25	—
8	17	—	43	17	—
9	17	—	44	7	—
16	7	7	49	75	7
23	7	—	53	—	7
26	17	—	54	7	7
28	17	7	57	7	19
29	7	—	58	7	—
30	7	—	59	17	7
33	7	—	75	7	7
34	7	—			
			Total	344	68

STATION 22

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
1	9	—	36	113	—
5	9	—	37	9	—
6	—	9	38	9	—
7	9	—	39	9	—
16	9	—	43	9	—
19	9	—	45	9	—
22	27	—	46	27	—
24	—	9	47	17	—
25	9	—	48	9	—
26	9	—	53	9	—
27	9	—	59	9	9
29	9	10	61	9	—
30	—	9	69	9	—
31	9	—	74	—	10
33	34	—	76	9	—
34	9	—			
35	26	—	Total	442	56

STATION 23

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
3	19	10	43	—	19
5	19	—	44	10	—
6	26	—	45	36	10
7	26	—	46	36	10
9	65	18	47	207	35
10	19	—	48	46	10
16	36	—	49	91	26
20	19	—	50	19	—
21	10	—	53	82	25
22	10	10	54	36	10
23	26	—	56	10	—
24	36	—	57	55	—
25	26	10	59	136	71
26	10	—	60	19	—
29	10	—	62	19	—
30	10	—	63	46	—
31	26	—	65	46	10
33	19	—	68	10	—
34	36	—	72	10	—
35	46	—	74	—	10
36	90	—	75	10	—
37	26	—	76	10	—
40	10	10	77	10	—
41	19	10	83	10	—
42	10	10			
			Total	1,603	314

STATION 24

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
1	14	—	41	7	7
8	—	7	42	—	8
9	—	7	43	7	—
10	7	—	45	21	—
16	7	7	48	7	—
19	7	—	49	7	7
20	21	8	52	7	—
21	7	—	53	27	—
22	14	—	54	7	14
24	7	—	55	34	14
25	7	—	56	21	7
28	7	—	57	13	—
29	7	—	59	27	—
33	14	—	65	7	—
35	—	7	66	7	—
36	13	21	67	13	14
37	7	7	70	7	7
38	7	—	71	27	7
39	7	7	72	13	7

TABLE D-II — *Continued*

EXTERNAL TO INTERNAL MOVEMENTS

Autos and Trucks

1975

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
74	7	7	79	—	14
75	7	—	83	7	—
77	—	7			
			Total	433	191

STATION 25

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
1	7	—	49	20	—
2	—	7	52	26	7
6	—	7	53	67	41
9	20	—	54	93	47
16	13	—	55	13	—
19	7	—	56	20	—
20	20	—	57	26	7
22	20	—	59	87	27
24	13	—	60	13	—
25	13	—	62	13	—
27	7	—	63	20	—
28	7	—	65	67	20
29	7	—	67	41	—
33	26	—	71	20	—
34	—	7	72	33	13
35	20	7	74	13	7
36	215	27	75	26	13
37	7	—	76	54	—
41	41	7	77	26	33
42	7	—	79	54	47
43	13	—			
45	26	—			
47	7	—	Total	1,228	324

STATION 27

Zone	*Auto*	*Tr.*	*Zone*	*Auto*	*Tr.*
8	—	23	43	22	—
9	30	—	46	7	—
16	7	—	47	15	—
20	7	—	48	7	—
22	7	7	49	22	—
29	7	—	52	22	15
32	—	7	53	30	31
33	7	7	54	59	30
35	—	7	55	7	7
36	30	—	56	7	—
37	30	7	57	15	—
38	7	—	59	45	7
39	31	7	60	—	7
40	7	—	63	7	—
41	30	68	65	—	7
42	15	—	67	37	7
68	15	15	76	7	—
69	74	—	77	7	7
70	180	23			
75	7	—	Total	807	289

ZONES INCLUDED IN DISTRICTS

District	*Zones*
A	18-38
B	68-69-70
C	1-17-19
D	37-39
E	2-3-16-20-21-22-23-24-50-51
F	36-40-41-42
G	54-55-56-67
H	71-72-79-80
I	35-43-52-53
J	11-12-13-14-15
K	57-58-59-65-66
L	73-74-77-78
M	4-5-6-7-9-10-34-44-83
N	8-30
O	25-26-27-28-29-32-33
P	45-46-48-49
Q	31-47
R	60-61-62-64
S	63-75-76-81-82

TABLE D-III

EXTERNAL TO EXTERNAL MOVEMENTS

Total Vehicles

1975

Stations	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*10*	*11*	*20*	*21*	*22*	*23*	*24*	*25*	*27*	*Total*
1	—	29	312	773	24	687	39	356	178	126	18	16	—	10	8	113	10	2,699
2		—	26	105	8	173	13	230	113	120	—	5	—	16	3	34	5	851
3			—	63	18	67	12	192	485	820	—	—	8	4	—	—	—	1,669
4				—	10	55	26	154	1,548	2,638	5	—	5	10	17	—	—	4,468
5					—	2	7	15	19	26	—	—	—	17	2	—	—	88
6						—	30	59	275	2,260	6	—	4	24	13	15	2	2,688
7							—	9	17	24	2	6	—	—	9	—	—	67
8								—	189	204	18	5	16	31	13	16	—	492
10									—	36	2	4	—	6	14	12	—	74
11										—	10	—	—	2	12	36	19	79
20											—	7	—	8	—	—	—	15
21												—	—	—	—	—	—	—
22													—	—	—	—	4	4
23														—	—	10	—	10
24															—	11	4	15
25																—	—	—
27																	—	—
TOTAL		29	338	941	60	984	127	1,015	2,824	6,254	61	43	33	128	91	247	44	13,219

TABLE D – IV

EXTERNAL STATIONS TO CENTRAL BUSINESS DISTRICT

1975

Station No.	*Auto*	*Truck*	*Total Vehicles*
1	1315	218	1533
2	1139	134	1273
3	592	115	707
4	1183	175	1358
5	212	24	236
6	1569	130	1699
7	744	32	776
8	1682	191	1873
10	1109	145	1254
11	1846	163	2009
20	89	37	126
21	56	2	58
22	273	26	299
23	511	101	612
24	93	7	100
25	281	33	314
27	125	22	147
TOTAL	12,819	1,555	14,374

WILBUR SMITH
AND ASSOCIATES