

I WHY EXPRESSWAYS?

What is an expressway? What makes it different from other types of roadways? And, why are they necessary?

Before embarking upon a discussion of Miami Expressways, it is desirable to clarify these points so that we may better know what we are discussing.

Technically Speaking

Technically, an expressway may be defined as--"a divided arterial highway for through traffic with full or partial control of access and generally with grade separations at intersections". A more elite member of the expressway family is the Freeway. A Freeway must have full control of access and generally has also such characteristics as:

No direct access permitted from abutting properties to the express traffic lanes. (Access is permitted only at selected locations by use of special access lanes.)

Two or three lanes each for traffic moving in opposite directions, separated by a continuous median strip.

No parking or stopping on driving lanes.

Elimination of intersections at grade by elevated crossings or interchanges.

In light of this, the current "Expressway Plan" for Miami rightfully falls in the more elite Freeway category.

Non-Technically Speaking

In simpler terms, it can be explained that--basically streets have two principal uses: (1) they permit movement of traffic between general areas; and (2) they provide access to specific property.

An expressway (or freeway) is designed to take care of the first need--to provide access to general areas or neighborhoods rather than individual homes or businesses. The expressway speeds the motorist to the general area of his destination; the local street permits the completion of the journey.

Why Not Arterial Streets?

Why can't existing arterial streets such as Biscayne Boulevard or N. W. 27th Avenue serve in place of expressways? Surely they are being used for movement of traffic between general areas--Downtown to Little River, or Dinner Key to "the Northwest Section".

The present checkerboard street pattern of Miami (and most other American Cities), is essentially the same as that which was devised for pedestrians and chariots 2,000 years before the invention of the automobile.

Unfortunately, this type of street layout has many obstacles which hinder today's principal means of transportation--the automobile. Every intersection (signalized or not), offers resistance to the free movement of traffic; opposing lanes of traffic offer conflict when making turns; and there is constant friction with parked vehicles, pedestrians, or driveways. The expressway is designed to eliminate these conflicts. It has one primary function--the free movement of traffic. Whereas the present arterial streets afford a constant stream of bottlenecks--the expressway offers a means of getting from one part of town to another more quickly, comfortably, safely, and economically. It is the first major improvement to the basic design of the roadway since the wagon road replaced the footpath.

II THE YEARS OF CONFUSION

Expressways for Miami were inevitable. Our rapidly increasing vehicular registration (among the fastest growing in the nation), has dictated that sooner or later expressways would come.

Over the past 15 to 20 years, several plans for expressways or expressway type facilities were forthcoming from various sources. Some had merit; others did not. These plans varied considerably in degree of both detail and practicability.

The State Road Department Plan

Most important among these early plans was the Proposed Expressway System for Miami developed by the State Road Department of Florida.

Commencing in May, 1950, a series of studies were conducted in Dade County by the State Road Department to gather information on which to predicate a traffic plan. Included were an exhaustive origin and destination study, a detailed street capacity study, and a complete parking survey of the downtown area. By coordinating this with data such as increase in car registration and gasoline sales, it was possible to expand this information to represent traffic conditions in the year 1970. From this evolved their Expressway Plan.

Arterial Street Development

Along with the various expressway plans for this area, an assortment of plans for development of arterial streets and arterial street systems has been presented. Some of these were devised in connection with expressway plans; others were developed independently. In expressway planning it is important to plan also for an adequate system of arterial streets to work with the expressway.

Notable among these arterial plans were the Official Arterial Street Plan prepared for and by the City of Miami; and the Official Dade County Arterial Road Plan prepared by Dade County. The detailed survey information compiled by the State Road Department was instrumental in formulating these plans.

The Years of Confusion

In the period 1953-1956, a myriad of traffic plans faced the citizens of Dade County. The State Road Department Expressway Plan had been placed before the public and was drawing both praise and criticism. Plans for bypass routes, causeways to the Keys, expressways to the Airport, Bay Drives, and an assortment of arterial plans were all being pushed by their proponents.

In 1956, the Federal Government increased its highway-aid program, and stepped up action on the National System of Interstate and Defense Highways. This meant that if an expressway plan for Miami could be agreed upon, a portion of it could be eligible for 90% Federal Aid and the remainder for 50% aid.

It was truly a time for decision.

III THE WILBUR SMITH PLAN (CURRENT EXPRESSWAY PLAN FOR MIAMI)

Enter Wilbur Smith

In February, 1956, State Road Board Chairman Wilbur Jones offered a proposal to step up expressway progress in the Miami area. The plan was to hire a nationally recognized traffic expert to integrate the many plans under consideration and to come up with a final recommendation.

On May 28, 1956, Wilbur Smith and Associates of New Haven, Connecticut, were retained by the joint action of the State Road Department and the Dade County Commission. The objective was not to conduct a new survey; it was specifically requested that plans were to be derived, in so far as possible, from a composite of the best features of previous plans proposed. They were to prepare an expressway plan and an arterial street plan including geometric design, cost estimates, and assignment of traffic services for the recommended facilities. State, County, and City officials publicly agreed before hand to accept Mr. Smith's recommendations. The Federal Bureau of Public Roads had already stated that Federal money could not be allocated until the City, County, and State had agreed on a definite plan.

Plans Reviewed

Mr. Smith's group reviewed such plans as the State Road Department Expressway Plan, the Official Arterial Street Plan for Miami, the Official Dade County Arterial Road Plan, a Malecon on Biscayne Bay, 36th Street Causeway, Pan American Concourse, Key Largo Causeway, Palmetto Bypass, Riverside Drive, Miami River Bridges and Tunnels, Edgewater Drive, East-West Toll Highway, the Trafficways Plan of the City Planning and Zoning Board, and others.

In addition to the review of these previous plans, conferences were held constantly with officials of cities and the county. Meetings were also arranged with citizens' groups and others having specific proposals and recommendations to offer.

Studies and Investigations

Large amounts of traffic data and other information were procured. The 1950 State Road Department Origin and Destination Survey was updated to 1956 levels and prorated to include basic traffic desires to 1975. This was done by integrating such information as future population distribution,

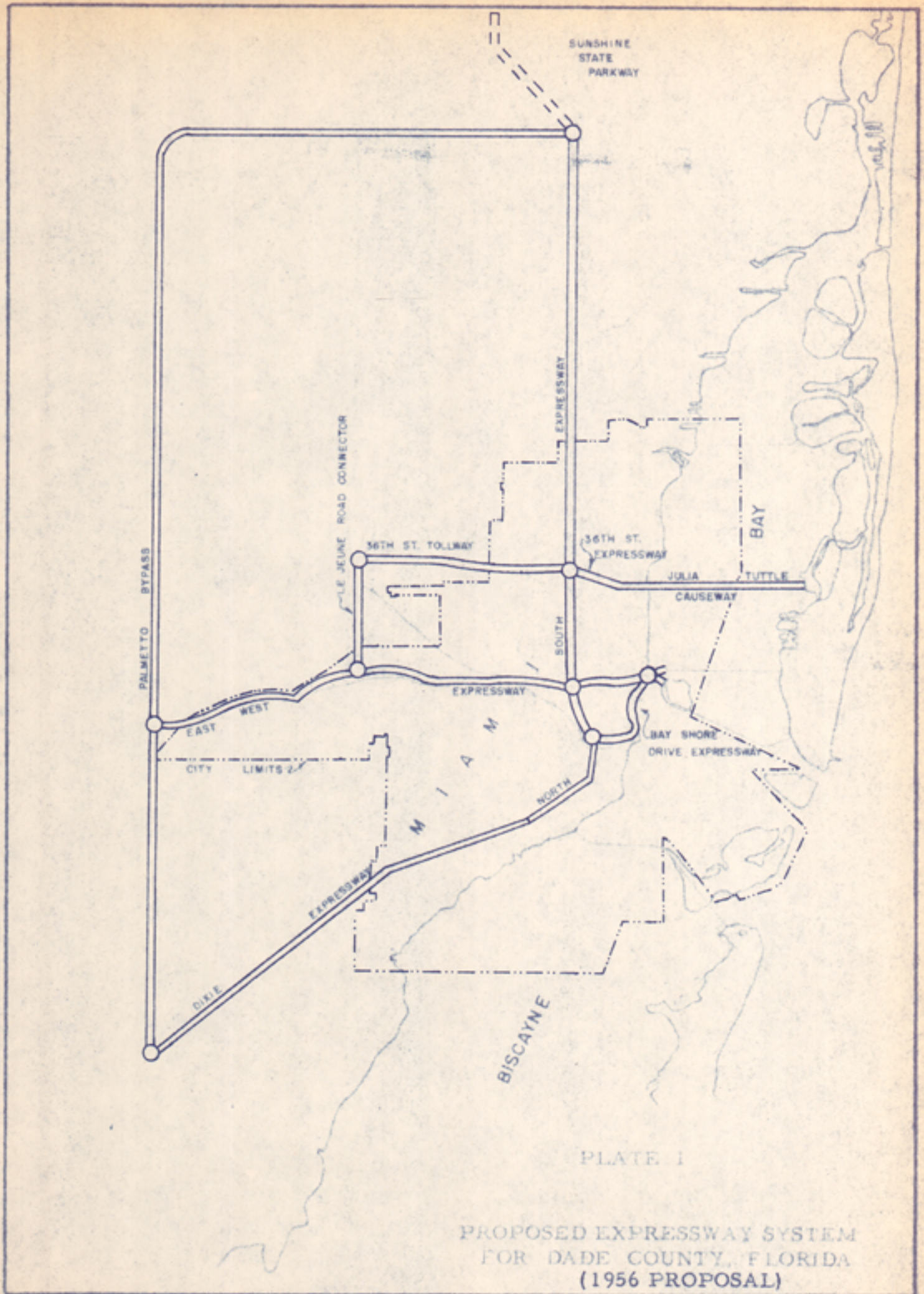


PLATE 1

PROPOSED EXPRESSWAY SYSTEM
 FOR DADE COUNTY, FLORIDA
 (1956 PROPOSAL)

future land use trends, vehicle ownership, and other basic factors which control motor vehicle usage. Field reconnaissances were made throughout the entire area to determine the most feasible locations for principal highway routes and expressways.

The Wilbur Smith Plan

On November 20, 1956, after 6 months of investigations and preparation, the final recommendations were presented before the County Commissioners at a public hearing in Miami. Basically his recommendations consisted of:

1. An expressway system.
2. An arterial street plan.
3. Miscellaneous local traffic improvements.

The Proposed Expressway System

The recommended expressway system would be 41.5 miles in length and cost an estimated \$194 million. Of this, approximately one-third would be for right-of-way acquisition; the remainder for construction. The plan appears on Plate I. Basically the expressway has 6 sections, as follows:

1. A North-South Expressway, extending from the Golden Glades Interchange to a point near S. W. 32nd Road at its junction with the Dixie Highway (U.S. Route 1), a total length of 13 miles.
2. The 36th Street Expressway, comprised of:
 - a. The Julia Tuttle Causeway across Biscayne Bay from Arthur Godfrey Road in Miami Beach to N. E. 36th Street, thence with an elevated structure generally along the line of N. 38th Street to a connection with the North-South Expressway in the vicinity of N. W. 6th Avenue and N. 40th Street, a length of 4.6 miles.
 - b. A western extension of the 36th Street Expressway, called the 36th Street Tollway, from the North-South Expressway to a junction with LeJeune Road near the International Airport, a length of 2.8 miles.

3. An East-West Expressway, comprised of:
 - a. A new facility, tentatively referred to as a combined causeway approach, to replace the western sections of Venetian and MacArthur Causeways, with an expressway connection westward to join the proposed North-South Expressway in the vicinity of N. W. 5th Avenue and 9th Street, a length of 2 miles.
 - b. A western extension of the East-West Expressway, from the North-South Expressway to an intersection with the Palmetto Bypass near Flagler Street, a distance of approximately 7.8 miles.
4. A Dixie Expressway which, in effect, is a continuation of the North-South Expressway, extending from its terminus near S. W. 32nd Road along the Florida East Coast Railroad to the Palmetto Bypass terminus near Kendall Drive in the southern limits of the survey area, a length of 8.3 miles.
5. The Bay Shore Drive Expressway, extending from the proposed combined causeway approach facility along the bay-front to a connection with the North-South Expressway immediately north of the Miami River, a distance of 1.4 miles.
6. A LeJeune Road Connector which is a short section of expressway connecting the 36th Street Tollway with the East-West Expressway and providing complete interchange facilities for the new 20th Street Terminal area at the Miami International Airport.

A 7th section (although not an actual part of the expressway system), is the Palmetto Bypass. This bypass does not rightfully belong in the expressway category because of its less critical design criteria including such things as crossings at grade. However, since it works in conjunction with the expressway, serving as a bypass route for the area, it is normally included in any overall discussion of the expressway plan. Commencing at the Golden Glades Interchange, the Palmetto Bypass extends westward to the vicinity of 77th Avenue, and thence southward, terminating at Route U. S. 1 near Kendall. It is about 23 1/2 miles in length. The East-West Expressway and the Dixie Expressway have the Palmetto Bypass as their western terminus.

The Arterial Street Plan and Local Traffic Improvements

The arterial street system recommended by Wilbur Smith coincides quite closely to the approved arterial street plans of both the City of Miami and Dade County. Among the recommended local traffic improvements was a new high level bascule bridge across the Miami River to serve Flagler and North First Streets; reversing the directions of one-way streets in the Central Business District; modernization of downtown traffic signal system; relocation of the Florida East Coast passenger station, as well as certain specific improvements to existing arterial streets.

Costs and Financing

The estimated costs of the various sections of the expressway were as follows:

	Length in Miles	Estimated Cost in Millions *		
		Right-of-Way	Construction	Total
North-South Exp.	13	\$32.6	\$ 68.3	\$100.9
36th Street Exp.	7.4	9.7	20.8	30.5
East-West Exp.	9.8	8.9	24.0	32.9
Dixie Exp.	8.3	6.4	10.8	17.2
Bayshore Drive	1.4	4.7	6.7	11.4
LeJeune	1.6	.3	.9	1.2
TOTALS	41.5	\$62.6	\$131.5	\$194.1

The North-South Expressway from Golden Glades Interchange to S. W. 32nd Road and the 36th Street Expressway from the North-South Expressway eastward to Miami Beach, were both included in the Federal Interstate Highway System, thus being eligible for 90% Federal Aid.

Design Standards

The proposed expressway system has been designed to take care of Miami's needs to the year 1975. Up to 8 lanes wide, this expressway will in some areas carry volumes in excess of 100,000 vehicles a day. In many instances travel time between points will be cut in half.

* Cost estimates from "A Major Highway Plan for Metropolitan Dade County, Florida," by Wilbur Smith & Associates. It is understood that these costs are no longer applicable, but are indicative.

Standards for the design of these expressways were based on geometric design standards for the National System of Interstate and Defense Highways. They were all designed as limited access facilities with access permitted only at those designated points where ramps are provided. No pedestrian traffic is permitted and no crossings at grade will be allowed. The design speed of all through lanes will be at least 50 miles an hour. The maximum grade for through lanes is 5%. No lanes are less than 12 feet wide and some are as much as 18 feet wide.

Miami at last had an acceptable expressway plan.

IV GETTING UNDERWAY

An Informed Public

Shortly after the official presentation of the Wilbur Smith Report to the County Commission, a campaign was under way to educate the public on Miami's expressway plan.

Newspapers ran articles giving a complete and comprehensive description of the proposed expressway plan.

A public hearing was held in the County Courthouse on February 7, 1957. The public response was so tremendous, and space so limited, that the proceeding had to be moved to the Bayfront Park Auditorium. Representatives from the State Road Department and Federal Bureau of Roads were in attendance. Wilbur Jones, State Road Board Chairman, presided over the meeting.

This was the first general hearing offered the public. Various other hearings followed, but were either sponsored by special groups, or dealt with specific situations.

Mr. Smith's report was then made available to the public for viewing, at the Miami, Miami Beach, and County Engineering Offices.

The expressway plan met some opposition at various public meetings, but such opposition was in the minority. By February, 1957, the expressway plan had received the official endorsement of many local municipal and civic groups.

The Attempt to Relocate the Northerly Portion

Although the proposed expressway had been generally accepted by the public, certain sections of the system were criticized by local groups. These sections could be termed--specific areas of distress. Probably the most famous of these was the attempt to relocate that portion of the North-South Expressway passing through the City of North Miami.

Early in 1957 the City of North Miami requested that the State Road Department realign the northerly portion of the North-South Expressway. That is, the portion from N. W. 93rd Street to the Golden Glades Interchange. They contended that the expressway would cut the City in half, thereby causing an adverse economic effect in that area.

Representatives of North Miami suggested an alternate route running along N. W. 22nd Avenue. This route would be eight-tenths of a mile longer than the original 6th Avenue alignment. A N. W. 15th Avenue route was also recommended as a possible alternative.

Wilbur Smith was called upon to re-evaluate the disputed area. After due analysis, it was decided to stay with the N. W. 6th Avenue alignment.

(Most of this portion of the expressway has since been constructed approximately along the originally planned route.)

The Julia Tuttle (36th Street) Causeway

In July, 1956, the Dade County Commission made a budget request to the State Road Department for \$10 million to construct a causeway between Miami and Miami Beach in the vicinity of N. E. 36th Street.

Wilbur Smith was retained to prepare a feasibility report on the proposed causeway. This report was made in advance of the highway needs study (the so called "Wilbur Smith Expressway Report"). The report by Smith presented to the State Road Department, recommended its construction. Other locations which were considered were N. 20th and N. 54th Streets.

Plans to make this a toll facility met with some opposition. Due to the nearness of the Venetian Causeway, it was felt that it might be in competition with the existing facility. Action was then taken to have the Julia Tuttle Causeway included as part of the Interstate System.

The decision to make the Causeway part of the Interstate System was the result of requests by the State Road Department. Originally the Federal Bureau of Roads had considered bringing MacArthur Causeway (U. S. Highway #A1A) up to interstate standards. Representatives of the State Road Department asked the Federal Bureau of Roads to consider the 36th Street site as part of the interstate system. Along with this request went an offer to make the urgently needed repairs on the MacArthur Causeway. The Federal Bureau of Roads approved the plan, and included the Julia Tuttle Causeway as part of the Interstate System.

The design of the Julia Tuttle Causeway called for 6 lanes of roadway including 4 bridges. The bridge spanning the Intracoastal Waterway had to be the fixed-span type in order to be eligible for inclusion in the Federal System of Defense and Interstate Highways.

The policy of the U. S. Corps of Engineers has always been that a minimum fixed clearance over the Waterway be not less than 80'. This height, or a lower bascule, was also recommended by the local marine interests. The State Road Department, however, stood fast on a 55' vertical clearance fixed-span crossing.

On November 10, 1956, a public hearing was held by the U. S. Corps of Engineers at the Miami Beach Municipal Building. At this hearing the district chief of the Corps recommended that the State Road Department be permitted to construct a 55' high bridge over the inland waterway as part of the proposed Julia Tuttle Causeway. However, the opponents of a fixed bridge at that height pointed out that it would be the only one along the waterway's route from Maine to Key West.

The Dade County Commission aligned themselves with the local boatmen, and went on record as favoring an 80' vertical clearance, fixed-span bridge, or a lower drawspan. State Road Department Engineers declared that the foot of 36th Street is too near the inland waterway to allow proper grade on a bridge as high as 80'. Late in January, 1957, the Corps of Engineers District Chief from Jacksonville made a formal recommendation in Washington, D. C., for the 55' fixed-span bridge. Shortly after, the permit was granted.

The local marine interests, and the Dade County Commission made a protest against the 55' bridge (after construction had started), as a final and desperate attempt to prevent its construction. The U. S. Corps of Engineers and the State Road Department said the decision to build the 55' span was unalterable.

In November, 1957, construction was begun on the Julia Tuttle Causeway. On December 12, 1959, it was officially opened to traffic. Its cost was \$14 million, of which the Federal Government paid 90%, and the State paid 10%. The Causeway is 3 miles long, with 2 1/2 miles of bulk-head fill. Approximately 30,000 cars per day used this facility during its first month of operation.

Through the influence of the Miami Women's Club, the County Commission approved the name Julia Tuttle for the 36th Street span. Mrs. Tuttle was a well known Miami pioneer.

The Downtown Dilemma and the Move to N. W. 48th Street

The State Road Department had hoped to start construction of the North-South Expressway where the need is greatest--in the downtown area and then to build outward. It was their objective to construct first that portion of the North-South Expressway from the Downtown Interchange to its southern terminus at S. W. 32nd Road.

A most important part of the Downtown leg of the expressway was its crossing of the Miami River. The Federal Bureau of Roads required that all bridges of the Interstate System be of the fixed type. No official decision had ever been made by the U. S. Corps of Engineers regarding the lowest acceptable vertical clearance of a fixed bridge at this location.

The original recommendation by Wilbur Smith and Associates relative to the expressway bridge crossing the Miami River, was that it should be of the fixed-span type, and have a vertical clearance of 55'. In the report it was pointed out that in order for that portion to be eligible for Federal Interstate Funds, it must be equipped with a fixed-span bridge.

The fixed-span proposal was bitterly contested by local marine interests. Spokesmen for the boating interests in the area claimed the fixed-span proposal would cost the industry millions of dollars a year, by restricting River traffic to boats less than 55' in height. This would prevent boats with masts unable to clear the bridge from reaching shipyards farther up the River.

Another point of argument expounded by the marine people was, that during hurricanes the Miami River is used as a refuge for large boats. These boats would have to seek protection at other distant ports throughout the State, if denied access to the river by a fixed bridge.

Public hearings were held and the proposal for a 55 foot, fixed-span met with violent objections. The City and County Commissions allied themselves with the opponents. Proposals were then offered for a 55' drawbridge, but this was met with disfavor by the Federal Bureau of Roads. Discussion dragged on without a decision being reached.

The zeal which the State Road Department displayed in attempting to get the "south leg" under construction had two paramount reasons. One was the fear of increasing right-of-way cost in that area. The other was the growing concern that the Federal Bureau of Roads might decide to terminate the Federal Interstate System farther to the north, if a unanimity of feeling, favoring the proposed plan didn't develop.

As the downtown controversy dragged on, State Road Department officials were looking for other areas less problematical where construction could be started. It was important to get construction under way lest funds allocated for its construction be transferred elsewhere. The area decided upon was that portion of the North-South Expressway between N. W. 48th Street and N. W. 83rd Street. The contract for the design of this portion was let; and in May, 1958, the first parcel of land for right-of-way was purchased.

The North-South Expressway was at last under way.

V P R O G R E S S T O D A T E

Construction Starts on the North-South Expressway

On July 29, 1959, construction was started on a one and one-third mile section of the North-South Expressway, extending from N. W. 48th Street to N. W. 71st Street. Designers were maintaining a schedule which was to permit a continuous program of construction northward. Even as construction started, plans were virtually completed for as far north as N. W. 95th Street.

One week after construction began in the vicinity of N. W. 48th Street, work was started on a land bridge one-quarter mile in length, extending from N. W. 71st Street to N. W. 75th Street.

At the same time plans were being completed for the huge 36th Street Interchange. This interchange, covering some 90 acres, extends from N. W. 29th Street to N. W. 48th Street, and from N. W. 2nd Avenue to N. W. 10th Avenue. Due to the size of this project and the fact that funds were not available for construction of the entire project at one time, it was necessary to construct it under two contracts. These consisted of the North & East, and South & West Quadrants. In November, 1959, construction was started on the North & East Quadrant.

The 36th Street Expressway Gets Under Way

Long before construction started on the North-South Expressway, studies were being made relative to the feasibility of constructing the 36th Street Expressway as a toll facility. In January, 1959, a \$25 million bond issue was validated, the major portion of which was for construction of the 36th Street Expressway, from the 36th Street Interchange to LeJeune Road, as a toll facility. This bond issue was supported by anticipated revenues from the toll facility (the toll to be 5 cents per axle), combined with secondary gasoline tax revenues.

In November, 1959, (about the same time that construction started on the 36th Street Interchange), the first leg of the 36th Street Tollway from N. W. 12th Avenue to N. W. 22nd Avenue was under construction.

That portion of the 36th Street Expressway extending eastward from the 36th Street Interchange to the Julia Tuttle Causeway, being a part of the Interstate System, was eligible for 90 per cent Federal funds and 10 per cent State funds. In August, 1960, (4 months after construction began on the 36th Street Tollway), this connecting link to the Julia Tuttle Causeway was under construction.

Miami's Expressways Open to the Public

Once underway, construction of Miami's North-South Expressway and 36th Street Expressway and Tollway gained momentum. By September, 1960, construction was in progress the entire length of the 36th Street Expressway and Tollway. In May, 1960, the contract was awarded for the construction of the North-South Expressway to N. W. 95th Street. Nine months later, in February, 1961, construction was started on two more sections of the North-South Expressway to extend it as far north as N. W. 135th Street.

The big day for Miamians finally arrived on September 1, 1961-- 26 months after construction started on the North-South Expressway. On that day the first portion of the Expressway System was opened to traffic. This consisted of the North & East Quadrant of the 36th Street Interchange, the 36th Street Expressway connecting to the Julia Tuttle Causeway, and the North-South Expressway as far north as N. W. 69th Street--in all, a total distance of 35 blocks.

Three months later, on December 22, 1961, the entire 36th Street Tollway from LeJeune Road eastward to the North-South Expressway, was opened to the public. This resulted in a "partial expressway system" consisting of the 36th Street Tollway and Expressway, extending from LeJeune Road eastward to and over the Julia Tuttle Causeway to Miami Beach, and connecting with a North-South Expressway which extended as far north as N. W. 69th Street.

In ensuing months the North-South Expressway continued to progress northward. As sections were completed, they were opened to traffic. The northern limit was extended first to N. W. 95th Street, then to N. W. 119th Street, and finally, to N. W. 135th Street. The next section, extending to N. W. 151st Street, is currently under construction.

The Acceptance of the 75-foot Fixed Bridge

In June, 1949, about the time expressway construction was beginning north of N. W. 48th Street, the people of Dade County were given the final decision on the Downtown Expressway Bridge over the Miami River. William Singer, District State Road Board Member, informed the citizens that a 75' fixed-span bridge was the best proposition they could get, and still receive the 90% financial aid of the Federal Government.

Following the Federal Bureau of Road's announcement to remain adamant on the 75' fixed bridge, endorsements by Municipal, and civic groups were forthcoming.

Although some factions of the marine industry were disappointed at the 75' vertical clearance proposal, it was pointed out that this was the highest practicable limit that could be constructed. Any bridge over 75' in height, would make connection to the downtown area virtually impossible.

In July, Miami boatmen made a last ditch stand to block a 75' vertical clearance, fixed-span bridge. A public hearing was held by the U. S. Corps of Engineers to determine the acceptance of a 75' fixed bridge. The Corps voted in favor of the fixed crossing.

The \$46 Million Bond Issue

By late 1959, the 36th Street Tollway and northerly portions of the North-South Expressway were under construction. The decision to start construction of the North-South Expressway at N. W. 48th Street and progress northward had been made and was now being carried out. With the agreement on a 75' fixed-span bridge now reached, thoughts again turned to construction of the downtown portion of the expressway. However, it was now evident that Federal funds could not be available for this portion of the project for perhaps several years.

It was then that State Road Board Member William Singer presented a plan whereby Dade County could obtain funds for the south leg of the expressway.

His plan called for the selling of a General Obligation Bond issue, in the amount of \$40 million. This would enable the County to advance the Federal Government funds for expressway construction, being reimbursed later as Federal money became available.

On December 1, 1959, the Metro Commission voted 7-3 to place a \$40 million expressway bond issue before Dade County's Freeholders in the May, 1960, primary election. The approved plan called for a new 1.5 mill tax, amounting to a three per cent raise in the current County property levy, to finance the 3.5 mile south leg of the expressway.

On February 18, 1960, the Metro Commission voted unanimously to place a \$46 million (the additional \$6 million for arterial street improvements including the Flagler Street Bridge), bond issue on the May, 1960, ballot. The bonds, when approved, could be called for payment after 1968, or could run for 30 years.

The Bureau of Public Roads is tentatively planning to pay back \$10 million a year beginning in 1968. This will tie in well with the Federal Interstate Program which is supposed to expire in 1972. Repayment of certain portions of the \$46 million will rest with Dade County Government.

During the financial planning for the expressway, the Metro Commission devised a plan, whereby repaid expressway money would be diverted to local road improvements. The Bureau of Public Roads wants reimbursed money used to retire the bond issue.

Late in February, 1960, Clifton W. Enfield, attorney for the Bureau of Public Roads, informed a Dade delegation that the repaid money can only be used for parts of the Interstate System. Mr. Singer, State Road Board Member, claimed that this was only a technicality.

On May 3, 1960, Dade's Freeholders went to the polls, and voted in favor of the expressway bonds. The winning margin was 62%.

On June 6, 1960, the validity of the bond election was contested in court by a group of Freeholders. However, on June 27, the bonds were validated in the Circuit Court. In September, 1960, the bond issue was again attacked in the Florida Supreme Court. Litigation dragged on and extended into mid-1961.

In the interim, objections had been voiced against the proposed alignment of the downtown interchange. Thoughts were also expressed that considerable money could be saved by moving the expressway bridges over the Miami River westward. Two alternate proposals from independent engineering firms were received and reviewed in June.

Wilbur Smith Rehired

In July, 1961, the firm of Wilbur Smith and Associates was hired to "undertake studies of alternate expressway locations and to examine the various proposals for such expressways in the central area of Miami". On January 23, 1962, a preliminary report of their findings was presented to the Dade County Commission. Following approval of the preliminary draft by the Commission, a final modified report titled "Alternates for Expressways -- Downtown Miami, Dade County, Florida", was submitted on January 30.

Results of the Wilbur Smith Evaluation

Wilbur Smith's report "Alternate for Expressways", included two major changes in the proposed expressway system. These were:

1. Realignment of the North-South Expressway from S. E. 18th Road to N. W. 29th Street, including a new design and location for the downtown interchange, relocation of the downtown distributor leg, and a change in location of the mid-town interchange.



1956 PROPOSAL
 CURRENT PROPOSAL

PLATE II

COMPARISON OF ORIGINAL PROPOSAL
 AND ALTERNATE ROUTES OF THE
 NORTH-SOUTH AND EAST-WEST EXPRESSWAYS
 AS SUBMITTED IN THE REPORT,
 "ALTERNATES FOR EXPRESSWAYS".

2. A realignment of the East-West Expressway, and the recommendation that this expressway be constructed in order to make the proposed expressway system fully effective.

Realignment of the North-South Expressway - The alternate proposal called for the North-South Expressway to veer northward at S. E. 18th Road and follow a course between S. W. 3rd and S. W. 4th Avenues, crossing the Miami River just east of S. W. 3rd Avenue into a downtown interchange centering about S. W. 3rd Avenue and S. W. 2nd Street. From this point it would proceed northward, gradually angling westward into a mid-town interchange centered at about N. W. 5th Court and N. W. 15th Street. It would then proceed northward along a course immediately west of N. W. 6th Avenue to join the completed portion of the North-South Expressway at N. W. 29th Street. (Plate II shows a comparison of the original and alternate routes.) The Downtown Ramp or Distributor would curve from the downtown interchange and terminate in the vicinity of S. E. 2nd Avenue and S. E. 2nd Street. This would not bisect the DuPont Plaza area, as did the original proposal which proceeded along S. E. 2nd Street to Biscayne Boulevard.

The river crossing is still proposed as a fixed bridge with a 75-foot vertical clearance. Such a bridge had already been approved by the U. S. Corps of Engineers for the route as originally proposed west of Miami Avenue. However, due to the change in location, a new public hearing may be necessary for approval. Whether or not a new hearing will be necessary is up to the U. S. Corps of Engineers.

The new alignment of the North-South Expressway received immediate approval in principal by local, state, and federal officials, and thus the groundwork was laid for progress to continue on this vital link of Greater Miami's Expressway System. However, there is still some opinion, on the local level, that the new Downtown Interchange does not serve the downtown area as well as the original proposal. It has fewer points of Ingress and Egress and deposits traffic principally at one point (S. E. 2nd Avenue). This will require signalization at this point and will impede flow on both S. E. 2nd Avenue and the Distributor.

Realignment of the East-West Expressway - The relocation of the mid-town interchange was the principal factor dictating realignment of the East-West Expressway. This realignment

affected that portion from N. W. 12th Avenue eastward through the interchange to the MacArthur Causeway. That portion of the expressway west of N. W. 12th Avenue remained substantially the same as proposed in the 1956 plan. (This change in alignment is shown on Plate II.)

The East-West Feasibility Study

The recommendation that the East-West Expressway be constructed in order to make the expressway system, as a whole, more effective, stirred up interest in getting this project under way. The big problem was how to finance it.

In March, 1962, Dade County again hired Wilbur Smith to make a study of the feasibility of constructing it as a toll facility. In June, 1962, the report "Preliminary Feasibility Study; Proposed East-West Tollway; Dade County, Florida", was submitted.

In this report, the proposed expressway was divided into three distinct sections consisting of:

1. From the MacArthur Causeway Bridge to the Mid-town Interchange.
2. From the Mid-Town Interchange to LeJeune Road.
3. From LeJeune Road to the Palmetto Bypass at Flagler Street.

The entire project was estimated to cost \$36.5 million. A toll of 5¢ per axle was recommended; the same as is charged on the 36th Street Tollway. Two toll barriers were proposed--one located between the Miami River and 27th Avenue, and the other to be located between LeJeune Road and Red Road.

Based upon the findings of his study, Wilbur Smith, in his report, stated the following:

"From analyses of preliminary data it would appear that the East-West Tollway project would not be especially attractive as a revenue bond issue to be supported entirely from the tolls collected thereon. It does appear, however, that the project could be made very attractive for financing if it is tied to the open-end bond issue covering the 36th Street Tollway (Airport Expressway)."

The Airport Expressway was financed by a portion of a bond issue, pledging tolls from the Airport Expressway and proceeds due to the County from State Gasoline Taxes. This bond issue was for \$25 million and provided for the issuance of additional bonds, if the conditions met certain criteria as specified.

In his study, Wilbur Smith concluded that, since it was not desirable to locate a toll barrier in the section of the East-West Expressway lying between the Mid-Town Interchange and the MacArthur Causeway, it would be necessary to find other sources of funds to construct this portion of the proposed facility. Mr. Smith stated that in previous reports prepared by him, he had pointed out strong arguments in favor of including the cost of this MacArthur connector as a part of the Interstate Highway System. He felt that if this could not be accomplished, consideration should be given to constructing the connector as a part of the Primary Federal-Aid System using State and Federal highway funds. As a final possibility, he felt that funds might be made available for the construction of this connector from the \$46 million bond issue, which has been authorized to expedite completion of the Miami Expressway System. Wilbur Smith concluded with this statement:

" . . . it is quite apparent that the MacArthur connector should not be included in the revenue bond project that is developed for the financing of the East-West Tollway."

The LeJeune Road Connector

In his 1956 report, Wilbur Smith proposed that LeJeune Road be converted from an arterial street to an expressway-type facility, from the 36th Street Tollway, south to the East-West Expressway. The principal purpose of this was to serve Miami International Airport.

Construction was started on this in August, 1961, and was completed in February, 1962. The result was an eight-lane, divided, limited access expressway from the 36th Street Tollway to the overpass to the Airport, at N. W. 22nd Street.

Complaints were registered by businessmen east of LeJeune Road. The median barrier prevented customers approaching from the north from making a left turn to gain access to their places of business. Additional objections were raised by Eastern Airline Employees who were unable to turn north from their parking lot.

Dade County proposed to cut through the median strip and install traffic signals permitting left turns at two points. This was at first opposed by the State Road Department. The State finally consented when the County agreed to remove the lights and replace the median strip by June 1, 1964. At that time it is proposed to build a \$250,000 horseshoe shaped ramp as a permanent solution to the problem.

The Palmetto Bypass

Before the Wilbur Smith Expressway and Arterial Highway Plan was presented, a plan for a bypass express route for Dade County was being designed. This was to become the "Palmetto Bypass." The bypass had been under serious consideration by the State and County since the early 1950's.

In 1955, the project was given top priority by the State Road Department. By February, 1957, the first bids were received, and construction began soon after. The project was completed in June, 1961. Although not actually a part of Dade County's expressway system, it is tied into, and integrated with it.

The name "Expressway" applied to the bypass facility is not precisely accurate. The bypass is not limited in access; in fact, it has several traffic signals on its northern end.

The bypass runs west from the Golden Glades Interchange, and then skirts the City (running southwardly), along a path paralleling West 77th Avenue. It terminates at U.S. Highway #1 near Kendall. It is at ground level except where it overpasses important streets, and has an average right-of-way width of 200 feet. Its driving surface consists of four 12-foot wide lanes. Construction was financed from State Primary Funds.

Summary of Progress to Date

Almost six years have elapsed since a 41.5 mile Expressway System was proposed for Dade County. The current status of this system is as follows:

	<u>Total Miles</u>	<u>Com- pleted</u>	<u>Under Const.</u>	<u>Advanced Design</u>	<u>Preli- minary Design</u>
North-South Expressway	13.0	6.9	1.3	1.2	3.6
36th Street Expressway and Causeway	4.6	4.6	---	---	---
36th Street Tollway	2.8	2.8	---	---	---
East-West Expressway	9.8	---	---	---	9.8
Dixie Expressway	8.3	---	---	---	8.3
Bay Shore Loop	1.4	---	---	---	1.4
LeJeune Road Connector	1.6	1.6	---	---	---
Total	<u>41.5</u>	<u>15.9</u>	<u>1.3</u>	<u>1.2</u>	<u>23.1</u>

The completed portion of the system consists of a North-South Expressway extending from N. W. 29th Street to N. W. 135th Street, and the 36th Street Tollway and Expressway extending from LeJeune Road eastward through an interchange with the North-South Expressway, and on over the Julia Tuttle Causeway to Miami Beach. The extension of the North-South Expressway to N. W. 151st Street is now under construction. In addition, the LeJeune Road connector has been completed, but is soon to be interrupted as an express facility, until 1964. (The existing status of the Expressway System is shown on Plate III.)

VI SCHEDULES AND EXPECTATIONS

There are about 24 miles of the proposed Expressway System yet to be constructed. The status of the various portions of this range from having construction plans nearing completion with construction funds available, to having nothing done since the original plan was formulated in 1956.

The North-South Expressway

This expressway is now complete from N. W. 29th Street to N. W. 135th Street, and under construction northward to 151st Street. The schedules and expectations of the remaining portions are as follows:

S. W. 32nd Road to N. W. 2nd Street - Funds are available for construction of this portion from the \$46 million Bond Issue. It is anticipated that this will be done as five separate contracts. Plans for the southernmost portion, from S. W. 32nd Road to S. W. 15th Road, are virtually completed, and construction should be started early in 1963. Current estimates are that the entire stretch to N. W. 2nd Street will be completed some time in 1966.

N. W. 2nd Street to N. W. 29th Street - Since this is part of the Interstate System, it is eligible for 90% Federal participation. However, the Federal Government has stated that they would participate on a 90-10 basis for the huge Mid-Town Interchange only if a definite commitment is made that the East-West Expressway will be built.

Current estimates by the State indicate that the first funds for this portion should become available in July, 1964; and the remainder, a year later. Based on this, completion of the expressway from N. W. 2nd Street to N. W. 29th Street should not be expected before 1967; and to reach this goal will require a step-up in the planning of this portion.

N. W. 151st Street to Golden Glades Interchange - Construction of the Interstate portion of the Golden Glades Interchange is scheduled to begin in October. This will connect up to that portion of the North-South Expressway now under construction to N. W. 151st Street.

The East-West Expressway

The Federal and State aid envisioned by Wilbur Smith as a possible means of financing the easterly portion of the East-West Expressway (from the North-South Expressway to the MacArthur Causeway), has not materialized. The East-West Feasibility Study revealed that the anticipated revenue from a toll facility would not be sufficient to finance the entire project.

The County has already committed itself to construction of the East-West Expressway. The current planning is to tie the financing into the open-end Bond Issue of the 36th Street Tollway. It is also proposed to construct the East-West Expressway only as far west as LeJeune Road; and to defer any extension to the Palmetto Bypass until such time as use of the first section justifies its extension.

The route of the easterly portion of the East-West Expressway, from the North-South Expressway to the MacArthur Causeway, has been fairly well determined. However, recommendations are being made that its design be adjusted so as to better serve the proposed Coliseum-Convention Center (planned for development on the present Commercial Dock Property), and Biscayne Boulevard.

The proposed route from the Mid-Town Interchange to N. W. 27th Avenue, is currently under study, to see if a different alignment can better serve the Civic Center and eliminate a complex interchange at the northerly approach of the N. W. 12th Avenue Bridge. A consultant has been hired to design the expressway from the MacArthur Causeway to N. W. 12th Avenue, exclusive of the Mid-Town Interchange.

It is impractical to make any estimate at this time as to when the East-West Expressway will be constructed, as many factors are involved including arrangements for financing.

The Dixie Expressway

No schedule has been set for this Expressway since no visible means of financing are in evidence at this time.

The Bay Shore Loop

No visible means of financing this segment of the Expressway System has been determined. In addition, there are many obstacles to overcome before it can become a reality. Therefore, it is impossible to predict when, if ever, it will be constructed.

VII PROBLEMS EN ROUTE

Fill Vs. Structure

There are two basic methods of constructing elevated expressways; on structural supports or columns, or upon solid fill. The current planning of the State Road Department is to use the solid fill method except in the downtown area. This is contrary to the public acceptance of the original plan presented at public hearings by Wilbur Smith in 1956. At that time the people were informed the expressway was to be built either on architecturally treated concrete structures or at approximate existing ground level.

Solid fill has but one advantage; a lesser construction cost. It has several disadvantages, including:

Obstruction of Air Movement - The expressway in many areas will abut residential property. A solid structure above roof top height will block the easterly and southerly breezes so necessary to the comfort and well being of thousands of our citizens.

Need of Additional Right-of-Way - Due to the slope of solid fill support, a wider right-of-way will be necessary; displacing more families and removing more property from the tax rolls.

Dead End Streets - Well over 100 streets will be blocked by the expressway and will not pass through the right-of-way. Only primary and secondary arterials will remain open. Neighbor will be separated from neighbor; shopping centers separated from patrons; schools separated from children; and churches from their congregations. Trips formally two blocks long could become over one mile long due to the proposed construction. The elimination of many through streets will throw additional traffic on already overcrowded arterials, thus adding to the very condition the expressway is attempting to cure.

Need to Expand Fire Hydrant Service - Existing fire hydrant service areas will be divided by the expressway. This will necessitate the creation of many new service areas and the installation of new hydrants and could mean the extension of mains in order to meet existing standards.

The Maintenance Problem - Solid fill areas are considerably more expensive to maintain than are concrete structures, which require little or no care. Unless properly planted and extensively

maintained, these slopes may become eye sores encouraging the deterioration of adjoining property into blighted areas. The proposed design with 2 to 1 side slopes (rather than the 4 to 1 slopes which are recommended as desirable design criteria), will present a difficult problem to establish and maintain satisfactory ground cover. The 2 to 1 slope represents the minimum allowable under adopted Federal Interstate Standards.

When objections were raised to the construction of the Expressway on solid fill, Mr. Singer, State Road Board Member, stated before the City Commission that the Expressway south of N. W. 29th Street to the downtown area would be built on columns rather than solid fill. It now appears that this will not be the case.

Pedestrian Crossings

Miami lost its battle for an expressway on columns. This means also that free pedestrian cross movement from one side of the expressways to the other will be greatly limited. Pedestrians will be required to cross at vehicular crossings, which are on the average 1/2 mile apart.

After studying the areas bounding the North-South and 36th Street Expressways, the Miami Department of Engineering made a request to the State Road Department for more frequent pedestrian crossings. In this request specific locations were designated graphically. Requests for these crossings were usually in areas of high residential concentration, near schools, highly developed commercial centers, or a point mid-way between proposed vehicular crossings. The answer by the State Road Department was not very favorable. They reported that there was no money available for pedestrian crossings, but they would be glad to lend any Engineering assistance if needed.

Modification to Completed Portions of the Expressway System

36th Street Interchange and 12th Avenue Ramp - As traffic began to increase on the expressway system, it became evident that inadequacies existed in the area of the 36th Street Interchange. This came to a head in May, 1962, when visiting officials of the A. A. A. publicly criticized the design of the interchange. The two principal objections were:

- (1) There existed an "intolerable squeeze" on Airport Expressway traffic, moving both east and west, at the point where North-South Expressway traffic merges with it. Airport vehicles were forced off onto a gravel emergency lane.

- (2) The N. W. 12th Avenue Ramp dumped slow-moving entering vehicles into the high-speed stream of airport traffic, without weaving room.

Cost estimates for correcting the problem run about \$500,000, of which the Federal Government is expected to pay 90%. Efforts are being made to get this situation corrected as soon as possible.

The Golden Glades Interchange - At the time the existing Golden Glades Interchange was designed there was very little traffic in the area. The Turnpike did not connect to it; the Palmetto Bypass was not the road it is today; and Route 441 was handling far less traffic. In short, traffic using the interchange today has far surpassed any estimates ever made for it. As a result the existing interchange has become inadequate. Modification and enlargement of this interchange are now in progress.

Inadequate Expressway Signs - No sooner had portions of the expressway system been opened to the public, than complaints began to be registered about its directional signs. The existing signs caused near chaos during rush hours. The principal problem areas were the Julia Tuttle Causeway from Miami Beach to the 36th Street Interchange, and northward on the North-South Expressway to N. W. 135th Street. This situation has been partially remedied by installation of appropriate signs, but more remains to be done.

VIII THE AFTER-COST

The cost of an Expressway does not end with its construction, any more than the cost of owning an automobile terminates with its purchase. Many people fail to realize the high costs involved in keeping expressways in top operating condition. Such high speed facilities need maintenance and policing in excess of that required by the arterial street. It is estimated that the total after-costs of the completed expressway system for Greater Miami (not including the Palmetto Bypass), will be in excess of \$2 1/2 million annually.

Expressway maintenance includes:

1. The keeping of roadway, structure, safety devices, planting, illumination, and other facilities, in a safe and usable condition through periodic maintenance.
2. The operation of safety devices and illuminating equipment.
3. Special emergency maintenance or repair to a roadway, structure, or facility necessitated by accidents, weather conditions, or other unusual or unexpected occurrences.

Some of the principal areas of Expressway maintenance are:

Traveled Way & Shoulder Area

The repair of these areas includes ordinary patching, crack filling, surface treatments, and keeping the shoulder and berm areas in proper condition.

Traffic Safety Services

Pavement Markings - The frequency of traffic striping on both urban and rural sections of the expressways will be more critical than ordinary arterials, due to the greater volumes of traffic.

Lighting - The modern multi-lane highway of today requires highly efficient illumination to keep traffic moving smoothly and safely. The basic services on lighting are the routine replacements of bulbs, replacement of damaged lighting standards, cleaning of lenses, etc.

Signs - This includes both repair and replacement of signs damaged by accidents, vandalism and the elements.

Roadside Maintenance

Landscape maintenance costs can account for as much as 65% of the maintenance dollar on a fully landscaped, metropolitan expressway. This seemingly high figure is due to the large amount of hand labor required for this work. (The State of California presently spends over \$100,000 per acre, per year for landscape maintenance on its expressways and freeways.)

Included are maintenance of areas planted for erosion control, screen plantings, and general beautification. Litter cleanup and sweeping on expressways also greatly increase maintenance cost.

Still another item is fencing, which needs occasional maintenance and replacement due to corrosion, vandalism, and accidents.

Structures

The large volume of high speed traffic that uses expressways requires maintenance of structures be of the highest caliber. The decks must be smooth-riding and free from skidding tendencies; the drainage must function properly; expansion details must be kept in good condition; and approach roadways kept smooth and of the proper grade at all times. These items all require constant maintenance.

The multi-lane, divided expressways of today provide for the elimination of all crossings at grade. These interchanges, road separations, and pedestrian crossings greatly increase the expressway maintenance problem.

Maintenance Costs

According to available statistics, the costs for maintaining the modern, landscaped, metropolitan expressway is in the neighborhood of \$25,000 to \$30,000 a mile per year. The comparable cost of a rural expressway without major landscaping is about one-third of this.

There are two other important expenses in expressway operation which technically are classified as operational rather than maintenance. These are:

1. Policing
2. Electricity (including cost of replacing and servicing luminaires)

Policing

The State has the responsibility of policing the North-South and 36th Street Expressways. Policing of the Palmetto Bypass is done jointly by the State and County. Although actual costs are not readily available, estimates made by a panel of top police and government figures once placed the estimated cost of expressway policing at \$30,000 per mile per year.

Lighting

The lighting for Dade's expressways is being installed as part of the regular expressway contract. Mercury vapor luminaires are being used, mounted on standards located approximately 240' apart on either side of the roadway, and staggered to provide a light source every 120 feet.

Electricity, changing of bulbs, and cleaning of lenses will be furnished by the Florida Power and Light Company. This is billed on a monthly basis. The average cost is about \$5.00 per unit, per month, equaling about \$3,000 per mile, per year. The energy-cost and lighting maintenance is paid by Dade County.

Total Maintenance and Operating Costs

The following table gives an average estimated cost for the maintenance, policing, and lighting of expressways in Greater Miami.

	Mile Cost Per Year	Annual Cost Expressway Within City (22 Miles)	Annual Cost Total System
Maintenance	\$30,000	\$ 660,000	\$1,250,000
Policing	30,000	660,000	1,250,000
Lighting	3,000	66,000	125,000
TOTALS	\$63,000	\$1,386,000	\$2,625,000

Additional Signalization

Expressways are, theoretically at least, void of signalization. This is in keeping with the intent of maintaining an uninterrupted flow of traffic. However, since vehicular trips neither originate nor terminate on an expressway, an efficiently coordinated arterial street system is essential to its effective operation. This is where additional signalization comes in.

Expressway ramps connect to existing arterial streets. Each adds a new intersection of conflicting or merging traffic. In most instances this is going to require additional signalization on arterial streets; for, if vehicles are permitted to stack up on ramps, they would extend onto the expressway itself and block what should be free moving lanes of traffic.

In many instances this will call for traffic control devices beyond the ordinary traffic signal. Where arterial streets and expressways are operating at near capacity, the use of electronic control equipment may be necessary in order to obtain maximum efficiency.

