SUPPLEMENT TO

NORTHWEST HILLSBOROUGH EXPRESSWAY

PHASE II - DRAFT ENVIRONMENTAL IMPACT STATEMENT

FDOT PROJECT NO.: 10000 - 1531

ENGINEERING ALTERNATIVES REPORT

FOR THE

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

AND THE FLORIDA DEPARTMENT OF TRANSPORTATION

SEPTEMBER 1984

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

NORTHWEST HILLSBOROUGH EXPRESSWAY

ENGINEERING ALTERNATIVES REPORT

1.0 INTRODUCTION

This report presents the various build and no-build alternatives considered for the Northwest Hillsborough Expressway. The report is another step of a systematic study process which has defined potential corridors, chosen the best corridor for alignment studies and now presents alignments within the study corridor.

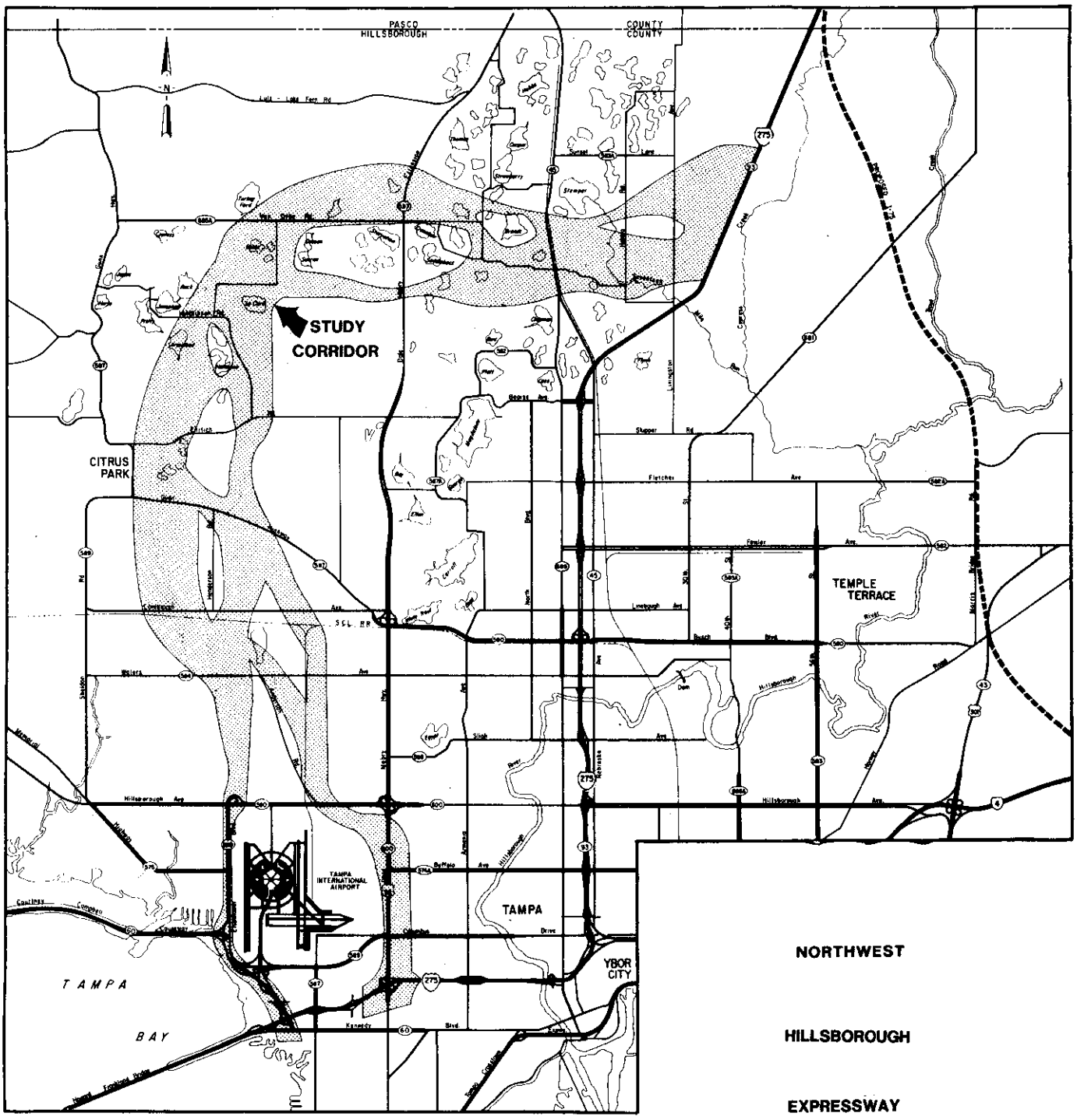
The purpose of this report is to serve as a supplement to the environmental impact statement which fully documents the major alternatives considered for this project. Various alignments have been studied within the study corridor shown in Figure 1. The following sections of the report present the alignments, the methodology for comparatively analyzing the alternatives and the justification for eliminating non-viable alternatives from further study.

2.0 DESCRIPTION OF PROPOSED ACTION

The Northwest Hillsborough Expressway study corridor shown in Figure 1 extends from I-275 on the south northward to the vicinity of Hutchinson Road and then eastward to I-275. For simplicity in describing and illustrating the alignments, the study corridor has been divided into two sections, the North-South Corridor to Hutchinson Road and the East-West Corridor beyond to I-275.

2.1 REASONABLE ALIGNMENTS

The entire corridor area was evaluated for its viability to accommodate an expressway alignment. The locations of cultural features such as schools, churches, parks, and public buildings were determined. The wetlands areas within the corridor were located on aerial photography and the potential impacts of an expressway alignment analyzed. The locations of existing and proposed residential development were obtained and considered in the corridor evaluation. Using these factors, reasonable alignments were developed for more detailed analysis.



STUDY CORRIDOR

FIGURE 1

2.1.1 North-South Corridor Alignments

There are four basic alignments in the North-South Corridor -- two in the southern end and two in the northern section with Waters Avenue generally serving as the dividing line. South of Waters Avenue, there are alignments east and west of Tampa International Airport along Dale Mabry Highway and Eisenhower Boulevard. North of Waters the alignments follow Lynn Road and Turner Road on the east side and the abandoned railroad track along the west side. There is also a series of crossovers near Waters Avenue to provide for combinations of alignments.

2.1.1.1 Dale Mabry Alignments

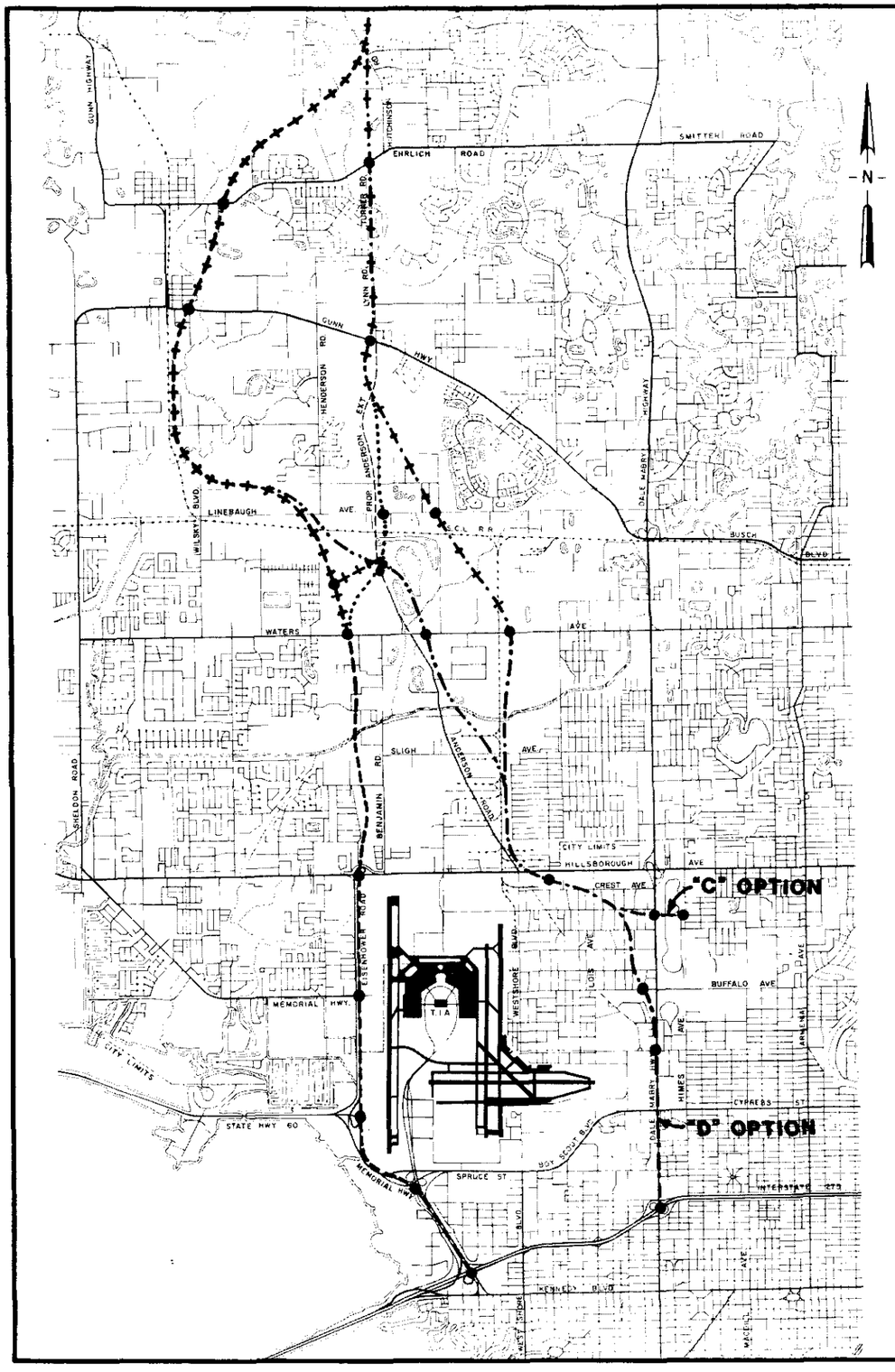
The Dale Mabry alignments were developed and analyzed in the "Expanded Corridor Study" published in March 1984. As a result of that study two alternative alignments, Alignment "C" and Alignment "D" were recommended for further study. These alignments now referred to as Dale Mabry "C" and Dale Mabry "D" are shown in Figure 2.

As discussed in the "Expanded Corridor Study", the Dale Mabry alignments were developed with the "D" option beginning at I-275 and the "C" option beginning at Dale Mabry Highway and Himes Avenue approximately two miles north of the interstate. The "C" option would utilize a possible one-way pair of Dale Mabry Highway and Himes Avenue to access the interstate system under study by the FDOT.

2.1.1.1a Dale Mabry "D" Alignment

The Dale Mabry "D" option would begin at I-275 with a complex three level interchange serving both expressway and local access to the interstate system as well as local access to the expressway. The expressway is proposed to be elevated on structure with northbound lanes on the east side of Dale Mabry Highway and southbound lanes on the west side. The expressway would continue northward in this manner to Columbus Drive. North of Columbus Drive the west side would be lowered to a fill section due to airspace conflicts with Tampa International Airport. The east side would also be lowered but still on structure to allow for parking underneath throughout the Tampa Sports Authority property.

South of Tampa Bay Boulevard a northbound entrance ramp from Dale Mabry Highway to the expressway and a southbound exit ramp from the expressway to Dale Mabry Highway would be developed. To the north of Tampa Bay Boulevard, ramps would be provided for northbound exiting traffic to Dale Mabry Highway and southbound traffic entering the expressway.



LEGEND

- DALE MABRY ALIGNMENTS
- EISENHOWER ALIGNMENT
- LYNN-TURNER ALIGNMENT
- WEST ALIGNMENT
- DALE MABRY WEST CROSSOVER
- EISENHOWER/LYNN-TURNER CROSSOVER
- INTERCHANGE LOCATIONS

NORTH-SOUTH CORRIDOR ALIGNMENT ALTERNATIVES

FIGURE 2

In the vicinity of Tampa Stadium the northbound roadway would cross Dale Mabry Highway as the expressway turns to the northwest. The crossing of Buffalo Avenue would be located approximately 1,500 feet west of Dale Mabry Highway with a half diamond interchange on the northern side. The expressway would stay east of Grady Avenue to South Street and then turn west northwest to cross Hillsborough Avenue between Hesperides Street and West Shore Boulevard. Access to Hillsborough Avenue would be provided by a full diamond interchange developed by connecting Hesperides Avenue between Crest Avenue and Hillsborough Avenue. At the crossing of Hillsborough Avenue, the expressway would curve to stay east of Anderson Road and be elevated to maintain railroad and local road access. The structure would terminate upon crossing a drainage canal some 1,300 feet north of Hillsborough Avenue. North of the drainage canal the expressway would parallel the east side of the Seaboard Systems Railroad track.

In the vicinity of Sligh Avenue the alignment has the option of turning west to connect to the West alignment (Section 2.1.1.4) via a crossover (Section 2.1.1.5) or continuing north to connect into the Lynn-Turner alignment (Section 2.1.1.3). The primary Dale Mabry alignment continues northward crossing Waters Avenue just to the east of the railroad track and providing a full diamond interchange at that location. North of Waters Avenue the alignment curves to the northwest crossing the track and beginning the Lynn-Turner alignment.

2.1.1.1b Dale Mabry "C" Alignment

The Dale Mabry "C" alignment would be an exact duplicate of the "D" alignment north of Crest Avenue. South of Crest Avenue the expressway would continue in an east-southeast direction crossing Lois Avenue, South Street and then Grady Avenue. Once south of South Street the alignment would turn essentially due east to Dale Mabry Highway and Himes Avenue where it terminates. This alignment has been developed with consideration of Dale Mabry Highway and Himes Avenue being converted to a one-way pair between Hillsborough Avenue and I-275. The southbound expressway traffic would exit into a southbound Dale Mabry Highway. Northbound traffic would enter the expressway via a loop ramp from Himes Avenue and cross Horizon Park on an elevated bridge structure.

Expressway traffic to downtown Tampa or to I-275 would utilize the one-way pair of Dale Mabry Highway and Himes Avenue to access the interstate system. Improvements would be required to these roadways; the degree of which are being studied as part of the Dale Mabry Highway Improvement Study conducted by the FDOT.

Dale Mabry "C" like the "D" option can continue northward connecting into Lynn-Turner or turn westward using the crossover to the West alignment.

2.1.1.2 Eisenhower Alignment

The alignment would be along the western side of Tampa International Airport as shown in Figure 2 following and upgrading the existing Memorial Highway/Eisenhower Boulevard roadways. The alignment extends from I-275 on the south to the vicinity of Waters Avenue where it has the option of connecting to the Lynn-Turner alignment via a crossover or going to the West alignment.

The proposed improvements to the existing Memorial Highway/Eisenhower Boulevard roadway include new three level interchanges at Courtney Campbell Causeway and Memorial Highway and a new urban, tight diamond interchange at Hillsborough Avenue. The existing Memorial Highway interchange at I-275 would be modified to be three levels by providing expressway traffic to I-275 NB (downtown direction) via a separate two lane overhead ramp. The Airport interchange would have only minor modifications from its present configuration. The only major change would be for expressway southbound traffic approaching the interchange. Expressway traffic desiring I-275 NB, toward downtown, would continue thru the interchange on the existing two lane southbound roadway. These two lanes would continue south and form the new two lane overhead ramp into I-275 NB. All other traffic to Spruce Street, the Airport, I-275 SB, and West Kennedy Boulevard would exit to the right. An at-grade, two lane connection would be made in the southwest quadrant of the Airport interchange between the existing ramps feeding into and out of the airport. This connection would serve I-275 SB and West Kennedy Boulevard traffic and connect to the existing airport two lane exit to form three lanes southbound. The roadway section between the Airport and I-275 would require reconstruction to physically separate the two lanes of expressway traffic to I-275 NB from the other thru lanes of traffic. The Airport exiting traffic would connect into I-275 and West Kennedy Boulevard in the same manner as today.

The northbound traffic to the expressway would be four lanes wide being one lane from West Kennedy Boulevard, two lanes from I-275 SB and one lane from I-275 NB. At the Airport interchange two lanes exit to the airport and three lanes continue northbound to be joined by two lanes from the Airport and Spruce Street. The mainline roadway between the Airport and Courtney Campbell Causeway would be four lanes wide in each direction.

The Courtney Campbell Causeway interchange would be a fully-directional three leg interchange. The new interchange would require total reconstruction of the existing interchange with a three level crossing.

North of Courtney Campbell Causeway a frontage road system would be provided for local access. This system is proposed to be a one-way two lane system on both sides of the expressway. Internal circulation would be provided by mainline overpasses at Gun Club Road and north of West Emma Drive.

The mainline expressway would narrow to three lanes in each direction between Courtney Campbell Causeway and Memorial Highway and two lanes in each direction north of Memorial Highway.

The Memorial Highway interchange would also be a three legged, fully directional interchange being three level but compounded by the presence of the frontage road system. The full frontage road system would be maintained throughout the interchange.

The Hillsborough Avenue interchange would be a modification of the typical urban, tight diamond interchange. The modification is the reversal of the ramps on the south side of Hillsborough Avenue. Northbound expressway traffic desiring to exit to Hillsborough Avenue must exit south of Memorial Highway and use the frontage road to Hillsborough Avenue. Likewise, southbound traffic from Hillsborough Avenue to the expressway and Memorial Highway would utilize the frontage road to south of Memorial Highway. Southbound expressway traffic exiting to the frontage road and northbound traffic entering the expressway from the frontage road would do so via slip ramps on the southside of the interchange. The northern side of the interchange would have normal tight diamond ramps. The interchange may be designed to accommodate a turn-around on its southside so that northbound traffic may be able to access properties along the west side of the southbound frontage road.

The expressway alignment at Hillsborough Avenue would be shifted approximately 200 feet east of the existing bridge. The alignment would be east of Southern Comfort Boulevard but require some minor relocation of that roadway for local access. The alignment would continue generally northward bridging Sweetwater Creek Canal.

Approximately 2,000 feet south of Waters Avenue the expressway would turn slightly to the west. After crossing Waters Avenue, the Eisenhower alignment has the option of following the basic alignment to the west and become the West Alignment or turn in a northerly direction using a crossover to the Lynn-Turner Alignment.

2.1.1.3 Lynn-Turner Alignment

As previously discussed, the Lynn-Turner Alignment begins in the eastern side of the corridor after the Dale Mabry Alignment crosses the Seaboard Systems Railroad north of Waters Avenue. This alignment, shown in Figure 2, is the basic study alignment in the eastern side of the corridor as it extends from Waters Avenue northward.

The Lynn-Turner alignment can be connected by either the Dale Mabry Alignment from east of the Airport (referred to as the Dale Mabry/Lynn-Turner alignment) or the Eisenhower Alignment from west of the Airport via a crossover (referred to as the Eisenhower/Lynn-Turner alignment). The basic alignment is the extension of the Dale Mabry alignment northward. The crossover from the Eisenhower Alignment will be discussed in Section 2.1.1.5, Crossovers.

After bridging two sections of the Seaboard Systems Railroad track the alignment would continue in its northwesterly direction with a full interchange at Linebaugh Avenue. The alignment would cross the southwest corner of the Country Run Unit II subdivision and bridge the proposed extension of Anderson Road before turning northerly and interchanging with Gunn Highway. The interchange would be a full diamond located west of Lynn Road. The alignment north of Gunn Highway would parallel the west side of Lynn Road, bridge Brushy Creek and parallel the west side of Turner Road to an interchange with Ehrlich Road.

Turner Road would be maintained along the east side of the expressway for local access to existing residential areas. On the west side of the expressway, new frontage roads would be provided south to Brushy Creek for local access into Carrollwood Meadows and Creekside subdivisions.

The interchange at Ehrlich Road would be a full diamond. The expressway would continue northward bridging Rawls Road and Hutchinson Road. The northern end of the North-South Corridor and also the end of the Lynn-Turner Alignment is approximately 1,300 feet north of Hutchinson Road where the Lynn-Turner Alignment would match the West Alignment.

2.1.1.4 West Alignment

The West Alignment, shown in Figure 2, begins at Waters Avenue and is the basic study alignment in the western side of the corridor to its end just north of Hutchinson Road. This alignment, like the Lynn-Turner Alignment, has the option of connecting with either the Eisenhower Alignment (referred to as Eisenhower West) or the Dale Mabry Alignment via a crossover (referred to as Dale Mabry West). The basic alignment is Eisenhower West. The crossover for Dale Mabry West will be discussed in the next section.

The West Alignment would be developed to provide a direct access to the Anderson Road Extension presently under design by Hillsborough County. This access would be by an at-grade intersection with a two-lane, two-way ramp north of Waters Avenue. Direct connection ramps for movements southbound to the expressway and northbound from the expressway to Anderson Road would be provided. These ramps would effect the design of the Waters Avenue interchange as the Anderson Road entrance ramp acceleration lane would be in conflict with the southbound exit ramp to Waters Avenue. Therefore, a loop ramp is proposed in the southwest quadrant for this movement. Due to the close proximity between the two interchanges, auxiliary lanes are recommended between the ramps.

Continuing northwesterly, the alignment would bridge the railroad tracks and Linebaugh Avenue before turning in a westerly direction south of Mushinski Road. There would be no interchange proposed at Linebaugh Avenue as access to the south is available from nearby Anderson Road and there is little demand to the north.

The alignment crosses Wilsky Boulevard south of Mushinski Road and turns to a more northerly direction crossing Rocky Creek on structure before aligning on the east side of the abandoned railroad track. The expressway would parallel the track for approximately one-half mile before turning in a northeasterly direction to provide room for an interchange with Gunn Highway. The Gunn Highway interchange would be a full diamond.

Immediately north of the interchange, the alignment would again cross Rocky Creek on structure and then curve more northerly to go between the Woodbriar West and the Carrollwood Meadows subdivisions. After crossing Ehrlich Road with a full diamond interchange, the alignment would curve back in a northeasterly direction to cross Bellamy Road just north of the Sugarwood Grove subdivision. The alignment would continue straight to cross Rawls Road then curving to a northerly direction for crossing Hutchinson Road and matching with the Lynn-Turner alignment.

2.1.1.5 Crossovers

The North-South Corridor has two crossovers which have been previously introduced and are shown in Figure 2. These crossovers are relatively short in length and simply serve to connect the alignment on the east side of the corridor with that on the west (Dale Mabry West) or connect the alignment on the west side of the corridor to that on the east (Eisenhower/Lynn-Turner).

2.1.1.5a Dale Mabry West Crossover

The Dale Mabry West crossover begins just south of Sligh Avenue where it curves to the west to cross the Seaboard Systems Railroad track and Sligh Avenue on a lengthy bridge structure. The expressway would continue in a northwesterly direction crossing the extreme eastern end of Crenshaw Street before curving to the north on the east side of Anderson Road and providing room for the Waters Avenue interchange. The Waters Avenue interchange is proposed to be only a one-half diamond on the south side.

North of Waters Avenue, the expressway would be on the east side and parallel the Anderson Road Extension to approximately 1,000 feet south of the railroad track. There it would turn sharply to the west developing a full interchange with Anderson Road. The interchange would be similar to a type Parclo-A except that it does not provide for movements from the expressway to south on Anderson Road and from north on Anderson Road to south on the expressway as these movements are available at Waters Avenue.

The expressway would continue in a westerly direction to where it curves northward to bridge the railroad track and Linebaugh Avenue west of Henderson Road. North of Linebaugh Avenue the curve reverses to the west where the alignment matches the Eisenhower West alignment. Again, there is no interchange proposed at Linebaugh Avenue as access to the expressway can be gained via the Anderson Road Extension interchange.

2.1.1.5b Eisenhower/Lynn-Turner Crossover

This crossover begins north of Waters Avenue by curving to the northeast to cross the Anderson Road Extension. The interchange with Waters Avenue would be a standard full diamond and a half diamond interchange would be provided on the south side at Anderson Road Extension. After crossing Anderson Road the expressway would curve to the north crossing the railroad and Linebaugh Avenue. A half diamond interchange is proposed on the north side of Linebaugh Avenue.

North of Linebaugh Avenue, the expressway would aline on the west side of the Anderson Road Extension and continue in a northerly direction to where it matches the Dale Mabry/Lynn-Turner alignment in the southern part of the Country Run subdivision.

2.1.2 East-West Corridor Alignments

The East-West Corridor has four alignment considerations which are shown in Figure 3. There are two basic alignments along the northern portion of the corridor west of Dale Mabry Highway. Once east of Dale Mabry Highway the alignments spread -- one following the northern side going north of Lake Brandt (Lake Brandt - North) and the other going south of Lake Brandt (Lake Brandt - South). Additionally, there are two crossovers between the alignments. These alignments with crossovers will be discussed in detail in the proceeding sub-sections.

2.1.2.1 Lake Brandt - North

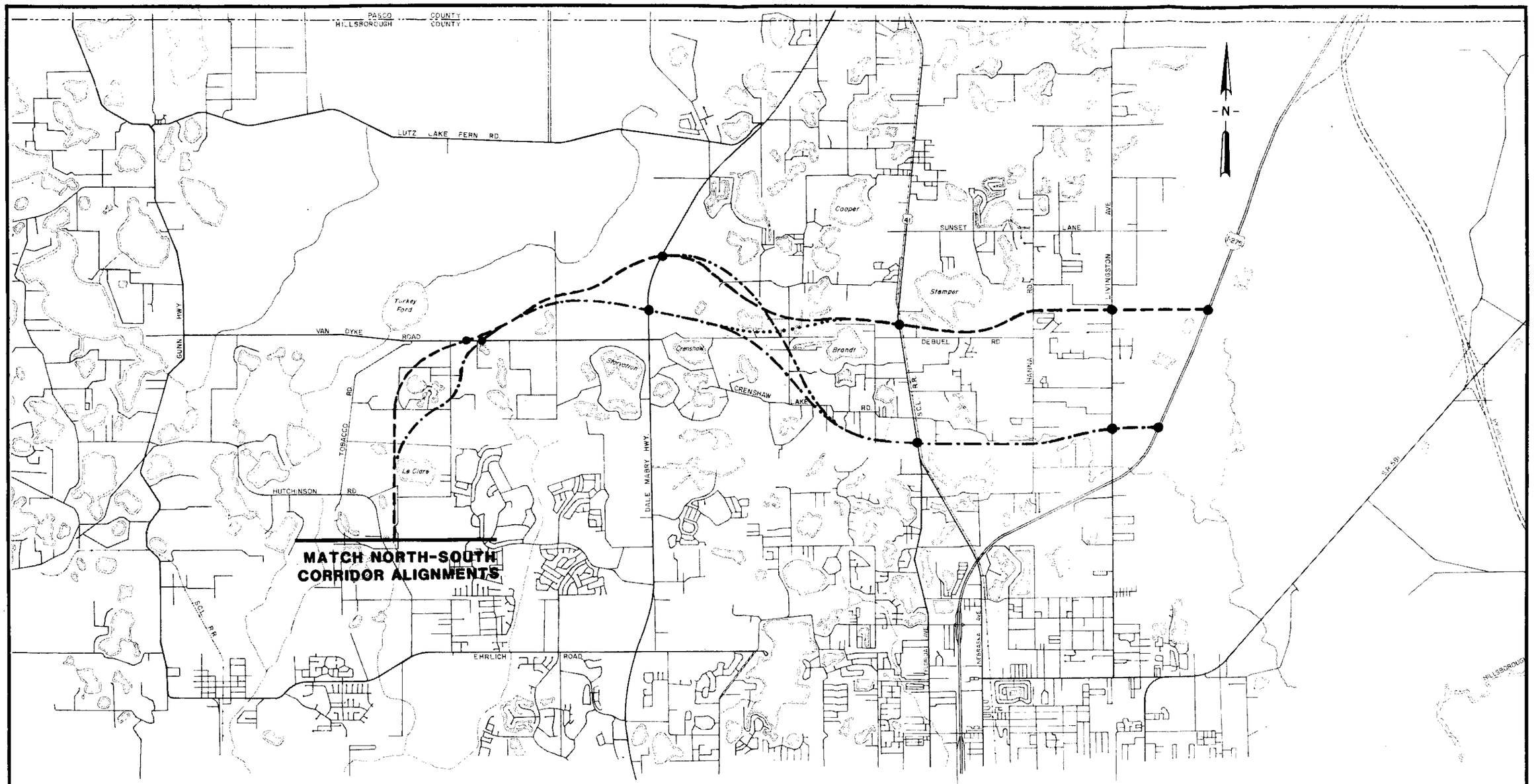
This alignment, shown in Figure 3, begins north of Hutchinson Road following the western and then northern side of the corridor to its termination at I-275.

The alignment goes generally north from its origin staying west of Lake LeClare and Lake Helen. Once north of Lake Helen, the expressway would turn sharply to the east crossing Lakeshore Drive south of Van Dyke Road. Full interchange access would be developed at Lakeshore Road by relocating Van Dyke Road to the north and having a full diamond interchange. Access to Van Dyke Road from Lakeshore Road would be improved.

North of Van Dyke Road, the alignment would curve to miss several significant wetlands areas and then turn northeasterly to cross Dale Mabry Highway approximately three-quarters mile north of Van Dyke Road. A full diamond interchange would be developed at Dale Mabry Highway.

After crossing Dale Mabry Highway, the expressway turns southeasterly to the south of Strawberry Lake and just north of Lake Brandt. The crossing of Nebraska Avenue would be located just south of the Nebraska Avenue railroad grade crossing in the southern part of Lutz. The Nebraska Avenue interchange would be a half cloverleaf on the west side due to the railroad tracks along the east side.

East of Nebraska Avenue the expressway turns to aline along the north side of Debuel Road south of Lake Stemper. West of Hanna Road the expressway will curve northeast crossing Hanna Road north of the Barrington Subdivision. The alignment parallels the northern edge of the subdivision and continues generally due east interchanging with Livingston Avenue and I-275. The Livingston Avenue interchange would be a full diamond while the I-275 interchange would be a fully-directional trumpet.



EAST-WEST CORRIDOR ALIGNMENT ALTERNATIVES

FIGURE 3

2.1.2.2 Lake Brandt - South

This alignment like the Lake Brandt - North Alignment begins north of Hutchinson Road; however, once north of Lake LeClare the alignment follows a more southerly route through the corridor to its termination at I-275 as shown in Figure 3.

The expressway would curve sharply to the east after passing west of Lake LeClare to pass on the southeast side of Lake Helen and bridging Lakeshore Road. Turning northward the expressway would cross Van Dyke Road having a half diamond interchange on the south side. The skew of the curved mainline crossing to miss some sensitive wetlands causes a unique interchange design on the south side and extreme difficulty in designing ramps on the north side.

North of Van Dyke Road, the alignment would take a more southerly route to interchange Dale Mabry Highway approximately 1,600 feet north of Van Dyke Road. The Dale Mabry Highway interchange would be a full diamond.

East of Dale Mabry Highway, the expressway turns in a southeasterly direction again crossing Van Dyke Road being west of Simmons Road, then Simmons Road and Crenshaw Lake Road south of Lake Brandt. After crossing Crenshaw Lake Road, the expressway turns eastward to aline on the northern side of the electrical power easement before interchanging with Nebraska Avenue. The Nebraska Avenue interchange would be a half cloverleaf on the western side of Nebraska Avenue due to the railroad tracks on the east side.

East of Nebraska Avenue, the expressway would parallel the northern side of the power easement staying south of Whitaker Road until bridging Hanna Road where the alignment turns to a more northeasterly direction. The expressway would then cross Livingston Avenue south of Green Meadow Road. The Livingston Avenue interchange would only be a half diamond on the west side as the close proximity to the I-275 interchange (approximately 2,500 feet) does not allow ramps on the east side. The I-275 interchange would be the termination of the alignment and is proposed as a fully directional trumpet.

2.1.2.3 Crossovers

The East-West Corridor like the North-South Corridor has two crossovers connecting between the two basic alignments. The crossovers occur in the area between Dale Mabry Highway and Lake Brandt and provide for the connection of the northern and southern alignments. For example, after the Lake Brandt-North alignment crosses Dale Mabry Highway it would turn sharply south connecting into the Lake Brandt-South alignment south of Lake Brandt and follow that alignment to I-275. This alignment is entitled Lake Brandt-South with Northern Crossover as it still passes south of Lake Brandt but the northern crossing of Dale Mabry Highway.

The other crossover starts in the Lake Brandt-South alignment after it crosses Dale Mabry Highway. The alignment will continue in a easterly direction never going south of Van Dyke Road. The crossover bridges Simmons Road north of Van Dyke Road and matches into the Lake Brandt-North alignment on the north side of Lake Brandt. This alignment is entitled Lake Brandt-North with Southern Crossover as it passes on the northern side of Lake Brandt but has the southern crossing of Dale Mabry Highway.

These two crossovers permit the investigation of four alignments in the East-West Corridor.

2.2 OTHER ALTERNATIVES CONSIDERED

In addition to the study alignments previously discussed, other potential alignments were considered but did not prove feasible for detailed study as a potential expressway alignment.

In the North-South Corridor, several alternatives were considered which utilized the western portion of the corridor north of Gunn Highway. One alignment would have followed the West alignment as far north as Ehrlich Road but instead of going on the south and east side of Halfmoon Lake it would have gone more northerly passing between Halfmoon Lake and Lake Armistead. The alignment would then have curved eastward joining the Lake Brandt Alignments near Lake LeClare. This alignment was not considered viable because much of it would have paralleled the Rocky Creek floodway requiring extensive bridge structure and an alternative having less impact (West Alignment) was available.

Another alignment alternative considered was to follow the abandoned railroad track northward thru Citrus Park then either traverse on the east or west side of Lake Armistead before connecting with the Lake Brandt alignments near Lake LeClare. This alignment was considered non-viable as it would have bisected the established community of Citrus Park and there were other suitable alignments available with less impacts.

In the East-West Corridor, there was one other alignment considered in addition to those presented. This alignment would have crossed in the corridor segment which went south of Starvation Lake Park and then thru the North Lakes Subdivision in the southern part of the East-West Corridor.

This alignment would have had to stay south of the park to have avoided Section 4(f) involvement and would have required extensive relocation of overhead major electrical transmission lines. West of Dale Mabry Highway is a 200 foot TECO power easement thru the North Lakes Subdivision. An expressway along this route would also require extensive utility relocations as well as residential relocations boarding the easement. Further to the east there is a sensitive wetlands area, a community park requiring Section 4(f) plus a new subdivision area of North Lakes under construction. Considering these potential impacts and that there were viable alignment alternatives in the northern portion of the corridor, this alignment was not considered viable for further analysis.

2.3 ALTERNATIVES TO THE PROPOSED ACTION

The no-project alternatives include the "No-Build" alternative, postponing the action, alternative modes of transportation and providing a lower level of service. Each of these alternatives are viable and will be carried forth to the Draft EIS for full evaluation and comparison with any of the evaluated "Build" alternatives. Therefore, the discussion presented will be brief and only general in nature.

2.3.1. "No-Build" Alternative

The "No-Build" alternative is that of not providing any major roadway or transit improvements in the northwest corridor. The major primary routes which presently handle the traffic loadings are Dale Mabry Highway and I-275. Traffic volumes on both of these roadways exceed capacity during daily peak periods causing extreme congestion and high accident rates. Indicative of these conditions is that almost yearly six to seven of the top twenty-five high accident locations in Hillsborough County are on Dale Mabry Highway north of Hillsborough Avenue. The principal east-west routes, Hillsborough Avenue, Waters Avenue, Linebaugh Avenue, Gunn Highway and Ehrlich Road which feed Dale Mabry Highway are also operating at or in excess of capacity.

While the FDOT and Hillsborough County have programmed a number of these roadways for improvement which will offer isolated reductions in congestion, the improvements will not be sufficient to alleviate the heavy congestion and high accident rates found in northwest Hillsborough County.

2.3.2 Postponing the Action

Postponing the construction of this proposed Expressway would in effect be the "No-Build" alternative. The rate of development in the northwest portion of the County has been significant in recent years.

This project has already had one postponement of over one year and during that time several significant changes have been noted. Today the traffic volume increases and the population/dwelling unit growth in the corridor area are at an annual rate of approximately six percent compared to the rate of less than five percent in the 1981 analysis. A recent report by the Hillsborough County City-County Planning Commission on 1983 building permits shows that countywide 23% more building permits for single family homes were issued in 1983 than the previous yearly high (1979). Multi-family units showed even more growth being nearly 250% higher than the average yearly rate of the previous five years (1978-82) and having the highest yearly total since 1973. Compounding this for the northwest area is that of the twenty most active subdivisions for 1983, two-thirds are in the northwest portion of the County.

The rate of development within the area is consuming much of the remaining vacant land available to build an expressway. Therefore by delaying the project, much greater socio-economic impacts can be expected and also much higher right-of-way and relocation costs would result from the construction of a major roadway facility.

Coupled with this disadvantage is the economic feasibility of the project. Escalation of construction costs as experienced in recent years could cause significant increases in the project costs should it be delayed. Therefore, escalating costs could greatly affect the ability to fund the project should it be postponed.

2.3.3 Alternative Modes of Transportation

Alternative modes of transportation have been studied for the northwest area which included high speed rail, light rail and improved bus service. In a 1977 report prepared by the Tampa Bay Rapid Transit District (TBART) showed that only 0.88% to 2.5% of the trips generated in the study corridor would utilize an improved transit system.

The FDOT and Hillsborough Area Regional Transit Authority (HART) have a two-year demonstration project underway to provide twenty-five new buses for express bus service in northwest Hillsborough County. This project is developing three park and ride lots along the Dale Mabry corridor for express bus service to the downtown area. The service has only been in operation since May, 1984 using one lot; therefore, there is not sufficient data to evaluate the benefits of this service.

The FDOT also has a study underway of the Tampa interstate system for high occupancy vehicle (HOV) lanes and park and ride facilities. These services will improve the people moving capabilities of the interstate system and surrounding roadway network by encouraging car pools and use of express buses; however, they will offer only minor relief to the congestion in the northwest area.

As a part of the HOV study a preliminary overview analysis was performed to determine the likelihood of a rail transit system replacing the HOV/bus lanes proposed for the Interstate highway system. Historically, using the characteristics of American cities with established transit systems, broad-based socio-economic "pre-condition" threshold values have been developed as a guideline for implementations of a busway and/or rail transit system. These conditions are summarzied below.

GENERAL CONDITIONS FOR TRANSIT DEVELOPMENT

DETERMINANT	RAIL	BORDERLINE RAIL OR BUS (1)	BUSWAY
Urban area population	2,000,000	1,000,000	750,000
Central city population	700,000	500,000	400,000
High-density corridor development	Extensive and clearly defined	Limited but defined	Limited but defined
CBD function	Regional	Regional or subregional	Regional or subregional
CBD floor space (sq ft)	50,000,000	25,000,000	20,000,000
CBD employment	100,000	70,000	50,000
Daily CBD destinations per square mile	300,000	150,000	100,000
Daily CBD destinations per corridor	70,000	40,000	30,000

(1) A major regionwide bus system should be effectively operating before investigating conversion to rail.

By the design year of the HOV project (2010) the Tampa Urban Area should begin to approach the development levels where it could begin considering rail. The Tampa Central City population may approach 330,000 and the CBD employment is expected to be over 80,000. The greater Hillsborough County population will have slightly over 1,000,000 people. However, the bus transit volumes today and those forecast volumes by 1995 and even by the year 2010 do not approach the volumes necessary to convert from a busway to light rail.

Even if the socio-economic characteristics begin to favor rail, the projected transit usage must also favor a rail system. Studies have been conducted to determine the trade off point in terms of passengers per hour between a busway and a rail system. Although these values are influenced by the amount and type of physical construction, peaking factors, operating speeds, prevailing wage rates and productivity levels and interest rates, certain general conclusions have been reached:

1) At 2,000 to 4,000 passengers per hour (about 80-100 buses per hour carrying 40 to 50 passengers per bus) buses provide the most economic syystem on a mile per mile basis.

2) At about 4,000 to 8,000 passengers per hour, either a bus lane with on-line stations or a light-rail system should be considered.

3) Between 8,000 to 16,000 passengers per hour a light rail system is generally the most cost effective.

4) Above 16,000 to 18,000 passengers; heavy rail rapid transit or commuter railroad service with larger vehicles and longer trains are required.

Preliminary forecasts based on the analysis of the HOV lanes indicates that the maximum number of buses in the peak hour in the Year 2010 is 60 in the I-275 North corridor. These buses are expected to carry about 2400 to 2700 passenger per hour, the range of a successful busway, but below the required passenger levels of a rail system.

Busways clearly offer the Tampa Urban area initial cost and service advantages. These include:

1. A relatively small amount of special construction is required to achieve regional express transit.

2. Contra-flow bus lanes, bus streets, or bus terminals can provide effective downtown distribution, thereby eliminating the costs of below-ground construction.

3. Utilization of buses for light-volume conditions reduces the need for special power distribution, train control, and rail yard facilities.

4. They can be effectively utilized by high-occupancy vehicles during selected periods of the day.

5. They can form the first-stage development of an eventual rail system.

The last point is perhaps the most significant. As the Tampa Urban Area approaches the 21st century, long-range plans for a regional rail system should become more focused. If the Tampa area continues to grow at its present pace, or faster, the need for an expanded transit system will become stronger. Light rail transit is one of the most versatile, simplest and most effective fixed guideway modes. It is equally adaptable to tunnels, aerial structures, freeway median strips, median of boulevards, grades and paved streets in mixed traffic. The right-of-way width required for double-track light rail including adequate platforms is approximately 40 feet, while only 24 to 36 feet of right-of-way width is required between stations. Light rail transit is also especially adaptable with respect to vertical and horizontal curvature requirements. A light rail vehicle is designed to take a curve with a 42 foot inside radius and can accept a vertical curvature radius of 310 feet on a crest of a hill and 460 feet in a sag. Grades from 4 to 6 percent are common, and some systems have been designed with grades of almost 9 percent. All of these facts point out that the Northwest Hillsborough Expressway may be able to accommodate a light rail system. However, the first steps in developing a good productive regional bus system must be taken before the planning and development of a more sophisticated system can occur.

The proposed expressway would have sufficient median width to accommodate the future development of HOV lanes or possibly a light rail system.

2.3.4 Providing a Lower Level of Service

The proposed Northwest Hillsborough Expressway is planned to ultimately be a four lane roadway for its entire length. However, studies will be performed in the Draft EIS for staging the construction to build an initial project having only two lanes from Ehrlich Road northward to I-275. The project will still maintain the limited access control.

Designing a facility for a lower level of service by decreasing the control of access would cause higher operating costs to be incurred plus safety and operating standards compromised. Finally, providing a lower level of service facility would greatly reduce its capacity and therefore not offset the need for additional roadway improvements in the future.

3.0 EVALUATION OF ALIGNMENTS

The reasonable alternatives presented in the previous section will be evaluated based upon six considerations.

1. Number of Relocations
2. Right-of-Way Requirements
3. Cultural Resource Impacts
4. Project Costs
5. Wetlands Impacts
6. Traffic Service

The evaluation will compare the alignments in the North-South Corridor with the intent of recommending one or more as being most viable for detailed analysis in the Draft EIS. The same process will be followed for the East-West Corridor.

In the North-South Corridor there are six study alignments which have been presented:

1. Dale Mabry "D"/West
2. Dale Mabry "D"/Lynn-Turner
3. Dale Mabry "C"/West
4. Dale Mabry "C"/Lynn-Turner
5. Eisenhower West
6. Eisenhower/Lynn-Turner

The study alignments in the East-West Corridor are:

1. Lake Brandt-North
2. Lake Brandt-North with Southern Crossover
3. Lake Brandt-South
4. Lake Brandt-South with Northern Crossover

Each of these alignments have been graphically developed on 1" = 100' or 1" = 200' aerial photography for use in the analysis. Proposed and existing right-of-way was plotted on the aerial photography to evaluate right-of-way requirements and relocation impacts.

The evaluation presented in this report does not consider the "No-Build" condition as it will be evaluated in detail in the Draft EIS.

3.1 ENGINEERING FACTORS

While there are many engineering factors which must be considered in the design of an expressway, there are only several factors which should be considered when evaluating the viability of an alignment. The principal factors are the traffic service provided, the right-of-way required and total project costs.

3.1.1 Design Characteristics and Standards

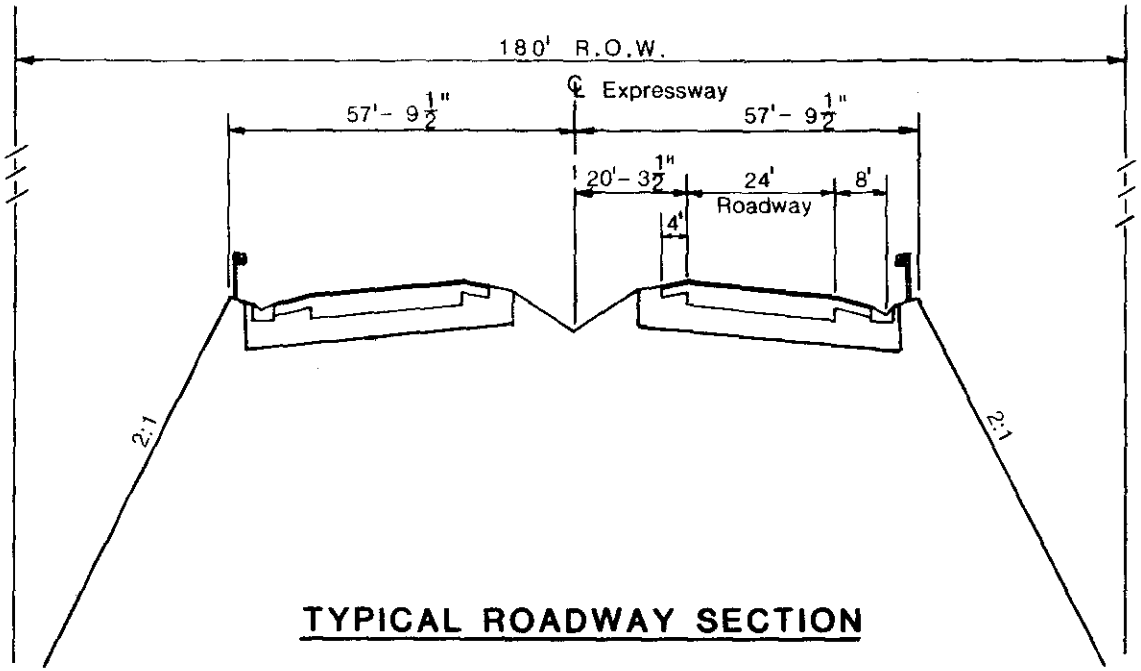
To standardize the evaluation process, all alignment alternatives have been evaluated as being four laned divided except for the Eisenhower alignment south of Memorial Highway where traffic volumes warrant six to eight lanes.

The design of all new roadway facilities will be accomplished utilizing the latest design standards provided by the American Association of State Highway and Transportation Officials (AASHTO) and the Florida Department of Transportation (FDOT).

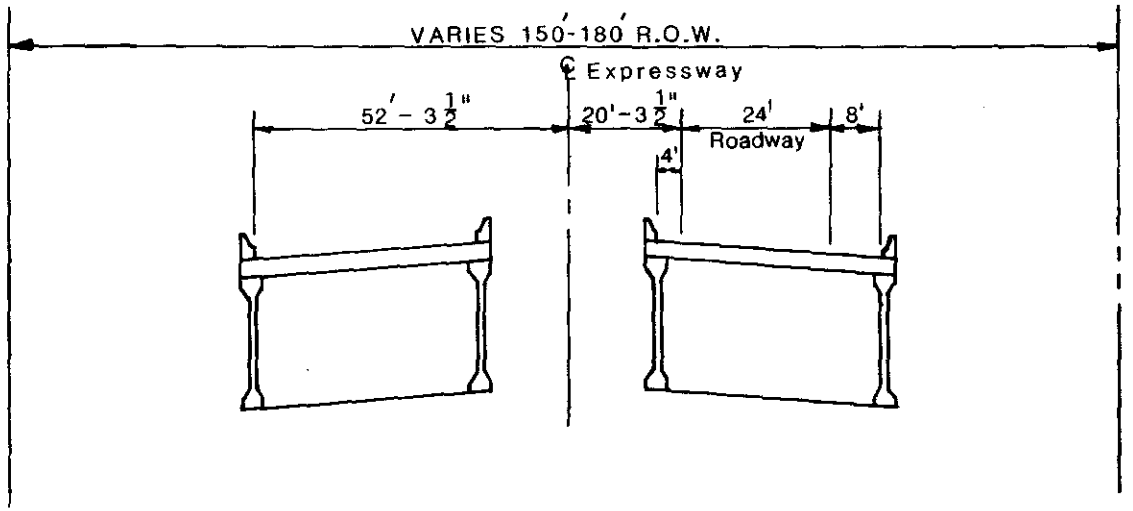
The typical section proposed will vary according to the area the expressway is traversing. There are two basic typical sections used for most of the alignments. The urban typical section shown in Figure 4 is confined to 180 feet of right-of-way to minimize right-of-way acquisition in the more heavily developed urban areas. This section will provide two 12 ft. lanes in each direction with a 40 ft. - 7 inch median. Closed drainage with concrete valley gutter, guardrail and 2:1 side slopes will be utilized throughout to minimize right-of-way requirements. For high fill areas, retaining walls will be utilized. In areas having extended bridge viaducts, the right-of-way may be reduced to 150 ft. wide.

In the more rural areas, principally north of Hillsborough Avenue where right-of-way is not as intensely developed, the proposed right-of-way would widen to 250 ft. as shown in Figure 5. The roadway section would be very similar to the urban section varying only to provide for open drainage with ditches in normal, low fill areas. In higher fills the section will be exactly the same as the urban section except that with the wider right-of-way the fill section may go higher before retaining wall is required. Both the urban and rural sections provide for future widening to six lanes by widening in the median using a concrete median barrier wall and three eleven foot lanes in each direction.

URBAN TYPICAL SECTION



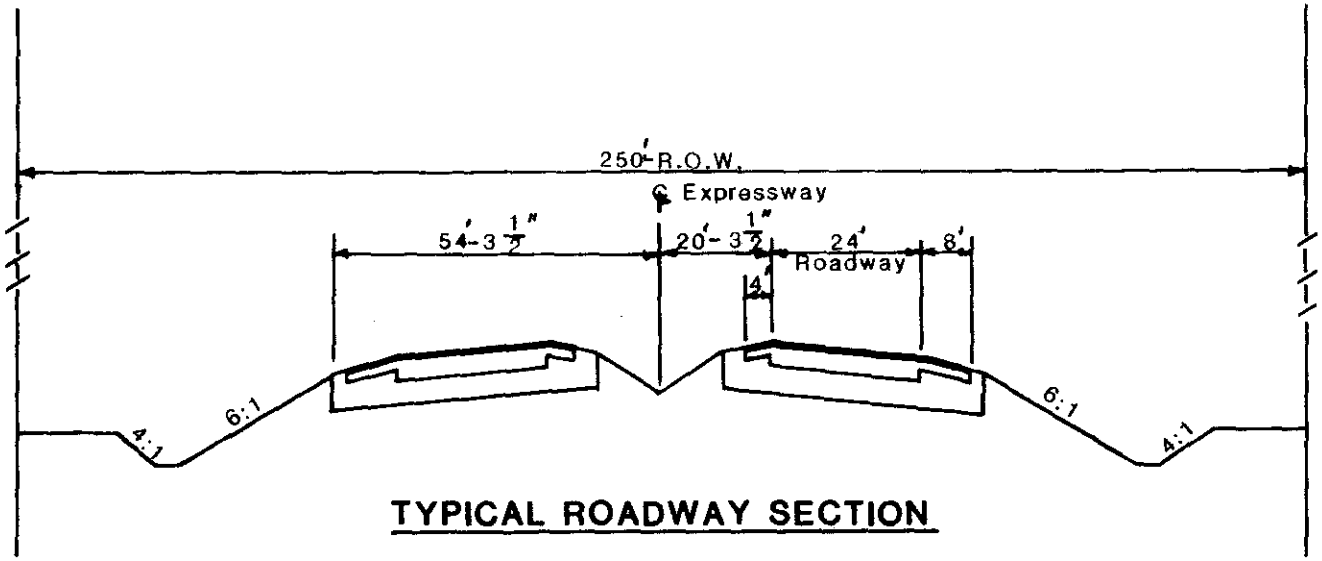
TYPICAL ROADWAY SECTION



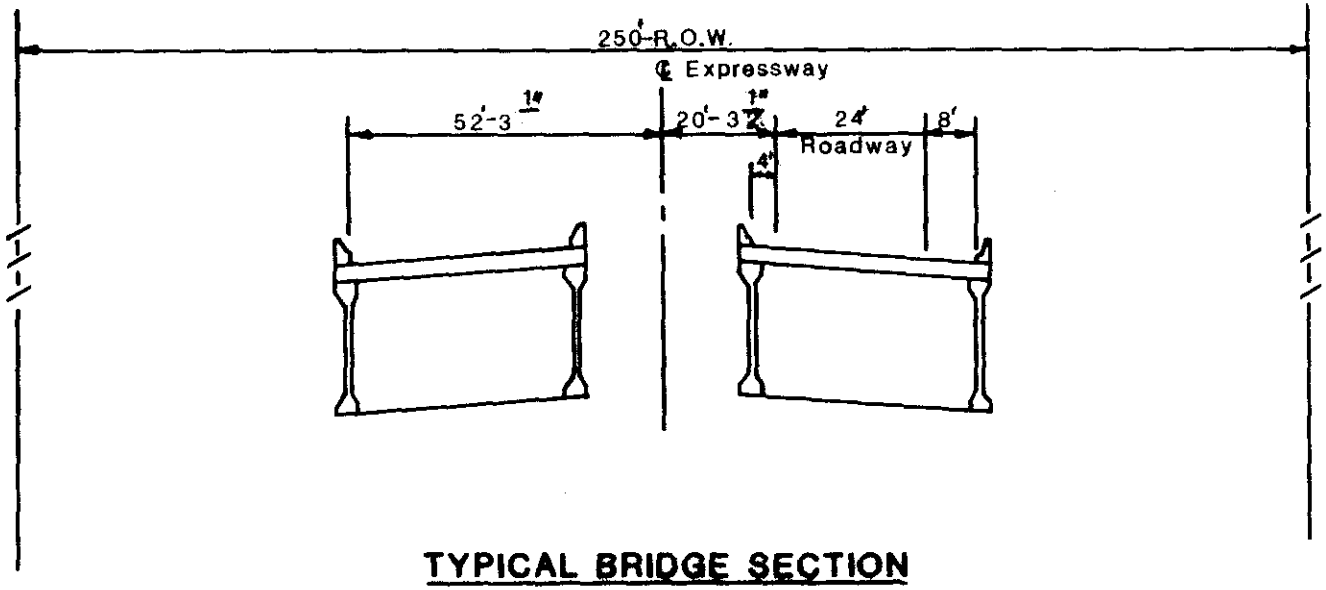
TYPICAL BRIDGE SECTION

FIGURE 4

RURAL TYPICAL SECTION



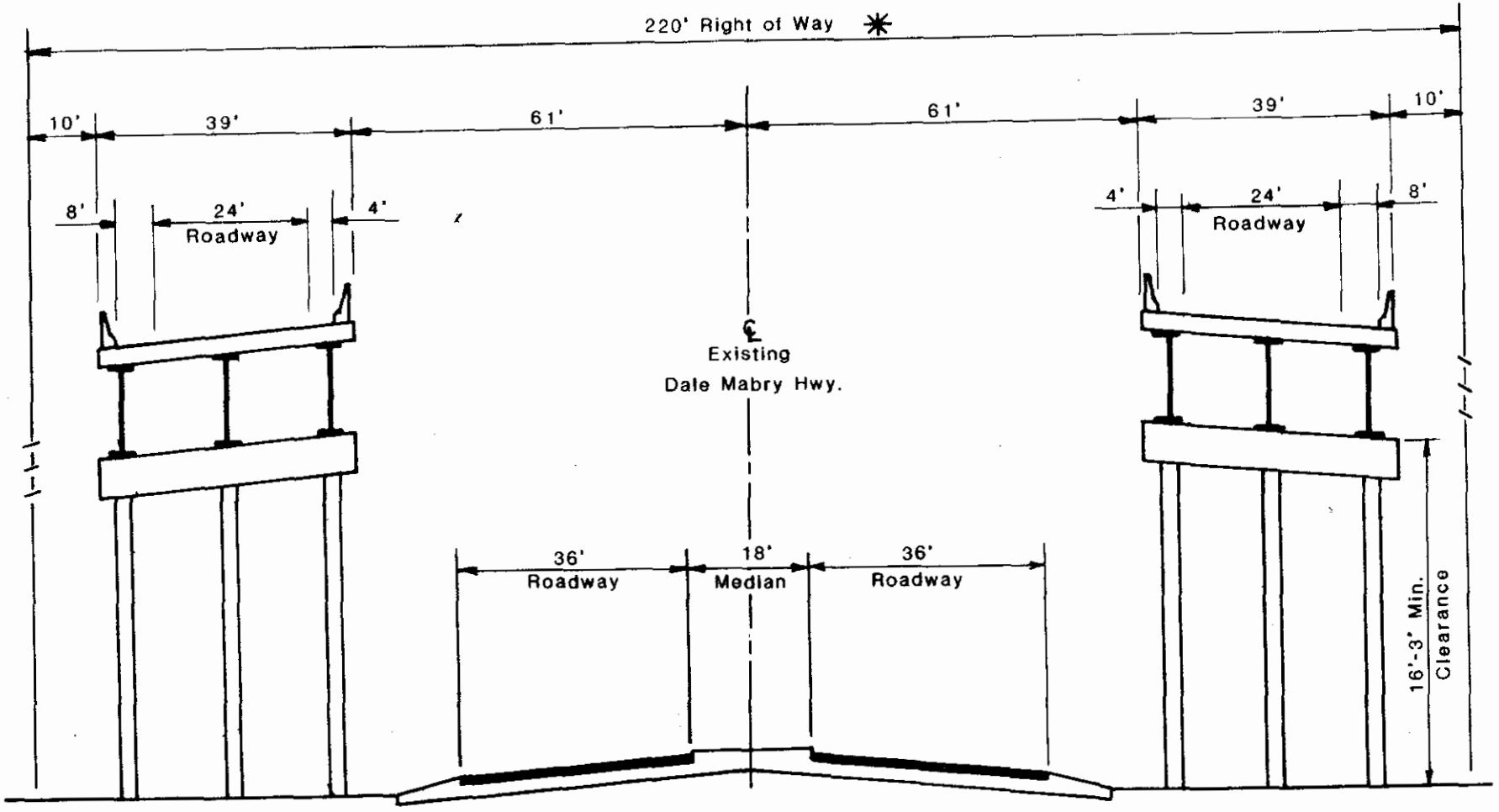
TYPICAL ROADWAY SECTION



TYPICAL BRIDGE SECTION

FIGURE 6

TYPICAL SECTION



SPLIT ELEVATED ROADWAY

✳ EXISTING ROW 200'

FIGURE 6

There are two areas where the aforementioned typicals are not applied -- the first being the area where the expressway is split and elevated paralleling Dale Mabry Highway. This section shown in Figure 6 will require 220 ft. or ten additional feet on each side. The other area where there is a different typical section is along Eisenhower Boulevard from I-275 to Hillsborough Avenue. The median thru this area narrows to provide for a median barrier with 10 foot inside and outside shoulders. Between Courtney Campbell Causeway and Hillsborough Avenue, two lane, one-way frontage roads will be provided on each side of the mainline. South of Courtney Campbell Causeway, the mainline widens to four lanes in each direction with short sections of frontage roads to connect local access.

3.1.2 Length of Alignments

The length of the proposed expressway varies between 18.8 miles and 22.9 miles dependent upon the alignment combination studied. Table 1 summarizes the lengths of the North-South Corridor and East-West Corridor alternative alignments. In comparison, using the existing interstate system thru downtownn Tampa is approximately 18 to 19 miles dependent on the interchange location on North I-275.

3.1.3 Estimated Project Costs and Schedule

One of the primary criteria of evaluating alignments is cost comparison. For this project, the estimated capital cost of providing the roadway, hereinafter referred to as project cost, must be evaluated. Also, considered in this evaluation is the relative cost of operating and maintaining the proposed facility. The following subsections will detail the costs for each alignment and a schedule for the project.

3.1.3.1 Project Costs

Estimates of project costs were made for each of the previously described alignment alternatives using the typical sections described. Project cost is the summation of the various expenditures anticipated in administering, planning, engineering, acquiring of right-of-way, construction and related incidental items associated with the development of an expressway project. A tabulation of the estimated project cost is shown in Table 2.

TABLE 1

LENGTH OF ALIGNMENTS

Alignment Description	Length (Miles)
North-South Corridor	
Dale Mabry "D"/West	12.49
Dale Mabry "D"/Lynn-Turner	10.98
Dale Mabry "C"/West	10.50
Dale Mabry "C"/Lynn-Turner	8.99
Eisenhower West	12.17
Eisenhower/Lynn-Turner	11.14
East-West Corridor	
Lake Brandt-North	9.95
Lake Brandt-North with Southern Crossover	9.59
Lake Brandt-South	9.37
Lake Brandt-South with Northern Crossover	9.95

TABLE 2

PROJECT COSTS

(Cost in Thousands of Dollars)

Alignment Description	1984 Const. Costs	Engr., Surveys & Testing	Admin., Legal Audit & Finance	Contin-gencies	FDOT R.O.W. Estimate	FDOT Reloc. Estimate	1984 Project Cost	Escalation 8%/year	1987 Project Costs
North-South Corridor									
Dale Mabry "D"/West	114,200	17,100	300	19,700	64,500	1,700	217,500	56,500	274,000
Dale Mabry "D"/Lynn Turner	101,300	15,200	300	17,400	76,000	1,700	211,900	55,100	267,000
Dale Mabry "C"/West	80,200	12,000	300	13,900	52,200	1,600	160,200	41,600	201,800
Dale Mabry "C"/Lynn-Turner	67,300	10,100	300	11,700	63,700	1,600	154,700	40,100	194,800
Eisenhower/West	82,600	12,400	300	14,300	58,700	1,100	169,400	44,000	213,400
Eisenhower/Lynn-Turner	77,300	11,600	300	13,400	72,200	1,400	176,200	45,800	222,000
East-West Corridor									
Lake Brandt North	45,500	6,800	200	7,900	18,200	400	79,000	20,500	99,500
Lake Brandt North w/Southern Crossover	44,100	6,600	200	7,600	19,600	500	78,600	20,400	99,000
Lake Brandt South	46,700	7,000	200	8,100	19,300	600	81,900	21,300	103,200
Lake Brandt South w/Northern Crossover	49,000	7,400	200	8,400	19,500	500	85,000	22,100	107,100

The estimate of construction cost is based upon quantities taken from preliminary plans. Calculations were made for earthwork, pavement and bridge quantities. Additionally, the linear footage of retaining wall and concrete median barrier were estimated. Current unit prices for these items of work from similar type projects were tabulated. The costs of incidental items were estimated based upon percentages of the major items.

The estimates for right-of-way and relocation costs were prepared by the Florida Department of Transportation. These estimates were made based upon the square footage of taking and using land values supplied by local realtors. The estimates have been adjusted to provide for condemnation proceedings and other contingencies.

Table 2 has been developed separating the costs of the North-South Corridor alignment alternatives and the East-West Corridor alignment alternatives to facilitate comparison of the alternatives. The project costs for the alignments in the two corridors may be added to obtain the total expressway cost for an alignment combination. There are twenty-four potential alignment combinations which may be made.

The North-South Corridor alternative alignments cost comparison show that the Dale Mabry "D" alternatives are the most expensive due to the extensive bridge structure along Dale Mabry Highway. The Eisenhower alternatives are the median cost with the Eisenhower West being the lower. The Dale Mabry "C" alternatives have the lowest cost; however, there is no cost added for the needed improvements to Dale Mabry Highway and Himes Avenue. When considering these needed improvements, the cost differential between the Eisenhower alignments and the Dale Mabry "C" alignments is quite small.

The East-West Corridor alternative alignments cost comparison shows little difference in the total project costs. The costs for the Lake Brandt - North alignments are slightly lower than the Lake Brandt - South, but not significantly.

3.1.3.2 Operation and Maintenance Costs

The operation and maintenance of the proposed facility will be accomplished by the Florida Department of Transportation. The total estimated costs of these services for the alignment alternatives are shown in Table 3. The operation and maintenance costs were developed based on the actual expenditure for similar type facilities now in operation in Florida.

TABLE 3

OPERATION & MAINTENANCE COSTS

Alternative Description	Miles	Lane Miles	First Year Costs-1989 Operations	Maintenance	Maintenance 7th Year for Resurfacing
North-South Corridor					
Dale Mabry "D"/West	12.49	50	620,000	250,000	2,500,000
Dale Mabry "D"/Lynn-Turner	10.98	44	620,000	220,000	2,200,000
Dale Mabry "C"/West	10.50	42	620,000	210,000	2,100,000
Dale Mabry "C"/Lynn-Turner	8.99	36	620,000	180,000	1,800,000
Eisenhower West	12.17	49	620,000	245,000	2,450,000
Eisenhower/Lynn-Turner	11.14	45	620,000	225,000	2,225,000
East-West Corridor					
Lake Brandt-North	9.95	40	260,000	200,000	2,000,000
Lake Brandt-North w/Southern Crossover	9.59	38	260,000	190,000	1,900,000
Lake Brandt-South	9.37	38	260,000	190,000	1,900,000
Lake Brandt-South w/Northern Crossover	9.95	40	260,000	200,000	2,000,000

3.1.3.3 Project Schedule

The Northwest Hillsborough Expressway project is presently in the second phase of a three phase study to identify alignment locations, consider environmental implications and evaluate financial feasibility. The Phase I Study determined preliminary project feasibility and identified the best possible corridor for establishing alternative alignments. This Engineering Alternatives Report is a part of Phase II and is an evaluation of the alternative alignments in selecting the most prudent alternatives for detailed evaluation in the Draft Environmental Impact Statement (EIS).

The Draft EIS is scheduled for submission to the Federal Highway Administration (FHWA) in the Fall of 1984 and would be the end of Phase II. The Phase III Study would start with the formal Design Public Hearing in the Spring of 1985 followed by the preparation of the Final EIS and Final Engineering Report. This phase is scheduled for completion in the Summer of 1985.

Assuming the remaining study phases are completed within the above schedule, revenue bonds could be sold in early 1986. If advance funds from the State of Florida are available, final design plans could start shortly after the formal public hearing selecting the alignment. Right-of-way acquisition could then begin in early 1986 after the bond sale. Roadway construction could begin in late 1986 or early 1987 with an opening in 1989.

3.1.4 R/W Requirements

The expressway alignment alternatives have been evaluated to determine the number of land parcels which would be acquired should a particular alignment be chosen. This data is given in Table 4. The evaluation reflects the intensity of development that each alignment crosses plus an indication of the right-of-way acquisition involvement required for an alignment.

As can be seen from the table, Eisenhower West has the lowest number of land parcels involved for North-South Corridor alternatives followed closely by Dale Mabry "C"/West. It is apparent that alignments using Dale Mabry "D" and the Lynn-Turner alignments will have more right-of-way involvement.

The East-West Corridor has the Lake Brandt - North alignment as having the lowest right-of-way involvement and the Lake Brandt - South alignment being highest. This is indicative of more intense development along the southern edge of this corridor.

TABLE 4

RIGHT-OF-WAY REQUIREMENTS

Alignment Description	Number of Land Parcels Acquired
North-South Corridor	
Dale Mabry "D"/West	257
Dale Mabry "D"/Lynn-Turner	388
Dale Mabry "C"/West	213
Dale Mabry "C"/Lynn-Turner	344
Eisenhower West	209
Eisenhower/Lynn-Turner	291
East-West Corridor	
Lake Brandt-North	88
Lake Brandt-North with Southern Crossover	120
Lake Brandt-South	136
Lake Brandt-South with Northern Crossover	113

3.1.5 Traffic Service

Preliminary estimates of the traffic service have been provided by the traffic and revenue consultants for use in this evaluation. As the numbers have not yet been finalized and will be presented and discussed in detail in the forthcoming Phase II - Traffic and Revenue Study, they will not be presented in this report. Rather they will only be discussed in order of magnitude as they relate to each other.

The traffic service analysis is principally directed toward the alignments in the North-South Corridor as the location of southern termination is a principal factor. The studies show that the Eisenhower alignments will have the highest traffic service. The Dale Mabry alignments will be lower dependent on option "C" or "D". The preliminary findings are that option "C" will only serve about two-thirds the traffic volume served by the Eisenhower alignments. Option "D" would be better but still less than 90% of the Eisenhower volumes.

In the East-West Corridor, there is little difference in traffic volumes expected based solely on the location of the roadway. The factor which causes the higher volumes is the location of its termination on the south end into I-275. Again the Eisenhower alignment would cause the higher east-west volumes followed by Dale Mabry "D" and then Dale Mabry "C".

3.2 COMMUNITY FACTORS

3.2.1 Relocation Impacts

3.2.1.1 Residential Relocations

Analysis of the number of residences that would have to be relocated by each North-South Corridor alignment alternative shows that the Dale Mabry "C"/West alternative would require the fewest relocations with 101. Other alignments from least to most relocations are Eisenhower West (116), Dale Mabry "C"/Lynn-Turner (124), Eisenhower/Lynn-Turner (134), Dale Mabry "D"/West (161). Dale Mabry "D"/Lynn-Turner would require the most residential relocations (184).

East-West Corridor alignment alternatives would result in fewer residential relocations than the North-South Corridor alignments because the area is less densely developed. The Lake Brandt - North alternative would require the fewest residential relocations with 32. Lake Brandt - South with the Northern Crossover would cause relocation of 43 residences, followed by Lake Brandt - North with the Southern Crossover with 49. Lake Brandt - South would require the most residential relocations with 53.

Summary data for each alignment as to the number of relocations by type (residential, businesses and non-profit organizations) and cost are contained in Table 5.

3.2.1.2 Business Relocations

Relocations of businesses caused by North-South Corridor alternative alignments will be least affected by the Eisenhower/Lynn-Turner alternative with 21 relocations. Eisenhower West would cause slightly more relocations (24). Other alternatives ranging from fewest relocations to most are Dale Mabry "C"/Lynn-Turner (39), Dale Mabry "D"/Lynn-Turner (51), and Dale Mabry "C"/West (72). Dale Mabry "D"/West would cause 84 business relocations, the most of any of the North-South Corridor alternatives.

Business relocations caused by East-West Corridor alternatives are substantially fewer than the North-South Corridor alternatives. Lake Brandt - South with the Northern Crossover would cause four relocations while the other alternatives would each cause five businesses to be moved.

Table 5, Relocation Impacts summarizes the business relocations by alternative alignments.

3.2.1.3 Non-Profit Organization Relocations

The Eisenhower West and Eisenhower/Lynn-Turner alternatives would not cause any non-profit organization to be relocated among the North-South Corridor alternatives. Each of the Dale Mabry "C" alternatives would cause one relocation and each Dale Mabry "D" alternative would cause two such relocations.

None of the East-West Corridor alternative alignments will require relocations of non-profit organizations.

3.2.1.4 Relocation Costs

The combined total relocation costs estimated for residences, business and non-profit organizations for each of the alternative alignments have been compiled and are shown in Table 5.

The alignment with the least relocation costs among the North-South Corridor alternatives is Eisenhower West. The most costly is Dale Mabry "D"/Lynn-Turner. Lake Brandt - North imposes the least costly relocations of the East-West Corridor alternatives while Lake Brandt - South is the most costly.

TABLE 5

RELOCATION IMPACTS

Alternative Alignment	Numbers of Relocations Resid.	Business	Non-Profit	Total	Costs
North-South Corridor					
Dale Mabry "D"/West	161	84	2	247	$1,669,550
Dale Mabry "D"/Lynn Turner	184	51	2	237	1,669,900
Dale Mabry "C"/West	101	72	1	174	1,571,050
Dale Mabry "C"/Lynn Turner	124	39	1	164	1,571,400
Eisenhower West	116	24	0	140	1,091,850
Eisenhower/Lynn Turner	134	21	0	155	1,419,750
East-West Corridor					
Lake Brandt - North	32	5	0	37	$365,000
Lake Brandt - North w/Southern Crossover	49	5	0	54	499,800
Lake Brandt - South	53	5	0	58	621,900
Lake Brandt - South w/Northern Crossover	43	4	0	47	493,400

3.2.2 Cultural Resource Impacts

3.2.2.1 Parks and Recreational Areas

Parks and recreation facilities require special consideration when encroached upon by new roadway projects as provided by the National Environmental Protection Act of 1969, as amended. Parks and recreation facilities impacted by the expressway would require special study, review and approval by local, state and federal agencies under provisions of Section 4(f) of the Department of Transportation Act of 1966 as amended.

In the North-South Corridor, three park and recreational facilities have been identified that could be impacted by an alternative alignment. The Dale Mabry "C" alternatives would require crossing over Horizon Park. The two Dale Mabry "D" alternatives would impact the Tampa Sports Authority Complex near Tampa Stadium. Both Eisenhower alternatives could possibly affect a Hillsborough County Park on the west side of Eisenhower Boulevard south of Gun Club Road; however, no acquisition of park property nor adverse impact is anticipated at this time.

The parks and recreational areas along Dale Mabry Highway cannot be used or adversely impacted by roadway construction without clearly demonstrating that other feasible and prudent alternatives were not available and that the proposed action has included all possible planning to minimize impacts resulting to the property from such use. The study has shown that the Eisenhower alignment is a feasible and prudent alternative to the Dale Mabry alignments. Therefore, it would be nearly impossible to receive Section 4(f) approval of a Dale Mabry alignment.

No park and recreational facilities have been identified in the East-West Corridor alternative alignments.

Table 6, Cultural Resource Impacts, summarizes the impacts discussed.

3.2.2.2 Archaelogical and Historic Landmarks

To date, no known historical landmarks or significant archaelogical sites have been located within the alignment alternatives. The State Historic Preservation Office, Division of Archives, History and Records Management and the Historic Tampa/Hillsborough County Preservation Board have been requested to review the alignment alternatives. Should these agencies determine potential impacts, these will be addressed in the Draft EIS.

TABLE 6

CULTURAL RESOURCE IMPACTS

	RESOURCES IMPACTED	
	Parks/ Recreational Areas	Archaeological/ Historic Landmarks
NORTH-SOUTH CORRIDOR		
Dale Mabry "D"/West	Tampa Sports Authority Complex - Section 4(f)	None Known (See Footnote)
Dale Mabry "D"/Lynn Turner	Tampa Sports Authority Complex - Section 4(f)	None Known (See Footnote)
Dale Mabry "C"/West	Horizon Park - Section 4(f)	None Known (See Footnote)
Dale Mabry "C"/Lynn Turner	Horizon Park - Section 4(f)	None Known (See Footnote)
Eisenhower West	Possible Hillsborough County Park	None Known (See Footnote)
Eisenhower/Lynn Turner	Possible Hillsborough County Park	None Known (See Footnote)
EAST-WEST CORRIDOR		
Lake Brandt - North	None	None Known (See Footnote)
Lake Brandt - North w/Southern Crossover	None	None Known (See Footnote)
Lake Brandt - South	None	None Known (See Footnote)
Lake Brandt - South w/Northern Crossover	None	None Known (See Footnote)

Footnote: As of this date no historic landmarks or significant archaeological sites are known to exist in the alignments under study. Should potential impact be identified they will be addressed in the Draft Environmental Impact Statement.

3.3 ENVIRONMENTAL FACTORS

3.3.1 Wetlands Impacts

In comparing alternative alignments with regards to environmental considerations, the most significant factor identified is the relative extent of intrusion on wetlands. All significant environmental issues, including wetlands, will be addressed in the Draft EIS.

For purposes of evaluating alignment alternatives, a comparison has been made of the amount of wetlands impacted. All natural and manmade wetlands within each alignment were examined and their acreages used to determine relative impacts. These findings are summarized in Table 7, Wetlands Impacted.

The most environmentally sensitive wetlands are those that are found in their natural state rather than created by man. Among the North-South Corridor alternatives the Eisenhower West alignment has the least natural wetlands impacted with 26.36 acres and the second least total wetland acres with 48.73 acres. The Eisenhower/Lynn-Turner alignment has the second least natural wetlands impacted with 30.50 acres, but the highest total acreage, 63.88 acres, when man-made wetlands are included. Dale Mabry "C"/West has the least total wetland acreage (43.67), but this is because it has only 4.94 man-made acres; it has 38.73 acres of natural wetlands, 47% more than Eisenhower West and 22% more than the Eisenhower Lynn-Turner alternative.

Lake Brandt - North has 38.85 acres of natural wetlands, the lowest among the East-West Corridor alternative alignments and has the lowest total wetlands impacted with 45.51 acres. Lake Brandt - South conversely has the highest totals for both natural wetlands (63.17 acres) and total wetlands (67.02 acres).

TABLE 7

WETLANDS IMPACTED

Alternative Alignment	Wetlands Impacted (Acres) Natural	Man-Made	Total
North-South Corridor			
Dale Mabry "D"/West	39.08	5.23	44.31
Dale Mabry "D"/Lynn Turner	38.02	15.99	54.01
Dale Mabry "C"/West	38.73	4.94	43.67
Dale Mabry "C"/Lynn Turner	37.67	15.70	53.37
Eisenhower West	26.36	22.37	48.73
Eisenhower/Lynn Turner	30.50	33.38	63.88

	Wetlands Impacted (Acres) Natural	Man-Made	Total
East-West Corridor			
Lake Brandt - North	39.85	5.66	45.51
Lake Brandt - North w/Southern Crossover	49.32	3.90	53.22
Lake Brandt - South	63.17	3.85	67.02
Lake Brandt - South w/Northern Crossover	58.65	4.41	63.06

4.0 SPECIAL EAST-WEST CORRIDOR EVALUATION

4.1 PURPOSE

The purpose of this section is to consider the viability of alignments within the eastern end of the East-West Corridor. The area under consideration is generally in the southern portion of Lutz bounded by Dale Mabry Highway on the west and I-275 on the east.

This evaluation is primarily in response to the traffic assignments for this segment being low. This segment of the East-West Corridor would serve the bypass traffic and offer some improvement for local traffic while causing community disruption and increased environmental impacts. This concern was voiced at the Corridor Public Hearing conducted in August 1983 and again at the public workshops on August 1 and 2, 1984. The recommendation adopted by the Authority in September 1983 after the corridor hearing was:

> In recommending Corridor B, it is realized that the east-west section between Dale Mabry Highway and I-275 will principally serve the thru, longer distance trip and the local trip to a lesser degree. During the Phase II study, special emphasis will be placed on studying the traffic volume the roadway will serve and the potential benefits to the downtown interstate system. These will be compared to the roadway cost and its environmental and community impacts. It may prove that this section of the environmental and community impacts outweigh the traffic services benefits received.

This evaluation will consider the principal factors of project cost, traffic service provided by the expressway -- both as a bypass and for local service, and significant environmental and community considerations. As a result, a recommendation will be made as part of this report to the Tampa-Hillsborough County Expressway Authority and the Florida Department of Transportation on whether this segment should be studied in further detail in the Draft Environmental Impact Statement or dropped from further consideration.

4.2 DESCRIPTION OF IMPROVEMENT

The type of transportation improvement under consideration is a four-laned limited access expressway which will be financed by revenue bonds. The area isolated for this evaluation is just one part of a total transportation facility intended to provide a bypass route around the northern and western portions of Tampa. The expressway would also provide a new major east-west roadway across the northern portion of the County.

4.2.1 Alignments Studied

Within the area of concern, two basic alignments with two cross-overs have been developed and evaluated. The description and evaluation of the following alignments were previously presented in detail in this Report:

1. Lake Brandt - North
2. Lake Brandt - North with Southern Crossover
3. Lake Brandt - South
4. Lake Brandt - South with Northern Crossover

The length of the alignments from Dale Mabry Highway to I-275 ranges from 5.27 miles to 5.53 miles.

4.2.2 Service Provided

The Northwest Hillsborough Expressway is proposed as a limited access roadway; that is, access to the roadway can only be gained via an interchange ramp. The locations of these interchanges are Dale Mabry Highway, Nebraska Avenue, Livingston Avenue and I-275. Each of the interchanges will accommodate all travel directions.

The mainline roadway is ultimately proposed to be four laned divided as was shown in Figure 5. This four laning can be either provided initially or staged. The staged option investigated is to provide a two lane limited access roadway. The two lane roadway would be developed with interchange access, the full width right-of-way and all necessary major drainage for the four laned roadway in the initial construction.

4.2.3 Need for Improvement

The Northwest Hillsborough Expressway is needed for several reasons as cited in the Phase I - Corridor Report. One of these was that the existing roadway network in Northwest Hillsborough County, both arterial and interstate roadways, is rapidly approaching extreme congestion with operating levels of E (unstable flow with stoppages) and F (forced flow) on many roadways during peak hour periods. Continued growth in the northwest portion of the County will magnify this congestion in future years. While the FDOT and Hillsborough County have programmed and/or are studying major improvements to the network, analysis has shown that the Northwest Hillsborough Expressway will be needed to meet the future traffic demands even if the improvements are made.

Another factor showing the need for the Expressway is the increased accident rates in the northwest portion of the County, principally resulting from the increased roadway congestion.

The final factor is the need for a bypass around the northern and western portions of Tampa. This factor is a critical issue in the evaluation of the need for an expressway segment between Dale Mabry Highway and I-275. Should the project be completed as presently proposed having a limited access expressway from I-275 in the vicinity of Tampa International Airport to I-275 on the north, a full bypass route would be provided to avoid the downtown area. Additionally, the project will provide a needed east-west route in the northern part of the County between Dale Mabry Highway and I-275. Presently, east-west trips must utilize the existing local collector system which is fragmented.

4.2.4 No-Build Options

This section addresses the consideration of not building the expressway from Dale Mabry Highway to I-275 in northern Hillsborough County. The proposed expressway would terminate at Dale Mabry Highway, thus minimizing its use as a bypass route.

Access to the expressway from the northeast for bypassing traffic would best be gained by exiting I-75 at CR54 westward to US41 and then southward into Dale Mabry Highway. The FDOT could improve this access by providing a new CR54 interchange into I-75 approximately one-and-a-half miles north of the Pasco County line and upgrading CR54 westward to US41. Such improvements would enhance travel time over using the existing network.

The no-build alternative would not provide a primary east-west route in the northern part of the County to service local traffic. However, the traffic projections made by the URS/Coverdale & Colpitt's Report indicates that this demand would be quite small for an expressway and could be handled by improvements to the local roadway network.

4.3 ENGINEERING AND ENVIRONMENTAL CONSIDERATIONS

The principal factors evaluated in this Report and discussed earlier in this section are considered in the evaluation. Those are project costs, relocations and wetland impacts.

4.3.1 Project Costs

The project costs presented in Table 8 are the same as those used in Table 2 except modified to specifically address the section between Dale Mabry Highway and I-275. Project cost is the summation of the various expenditures anticipated in administering, planning, engineering, acquiring of right-of-way, construction, and related incidental items associated with the development of an expressway project.

The estimate presented in Table 8 gives each of the alignment alternatives and shows costs for an initial two lane and an initial four lane roadway. The estimates for the two lane roadway alignment include the full right-of-way width, complete major drainage and some earthwork for future widening.

4.3.2 Business and Residential Relocations

A summary of the numbers of business and residential relocations and costs is presented in Table 9. The section between Dale Mabry Highway and I-275 represents approximately 25% of the total length of project. Within this section are located between 16% and 21% (varies with alignment) of the residential relocations and 11% to 13% of the business relocations. While these percentages appear low, the area is principally rural residential with many homes located in one acre or larger tracts. Some of these homes have been resided in by families over several generations.

4.3.3 Wetland Impacts

The area between Dale Mabry Highway and I-275, while only 25% of the entire project length, contains the greatest intensity of wetlands. Table 10 lists the acreage of wetlands impacted by each of the alignment alternatives. In comparing these acreages to the total wetlands impacts for a full length alignment, it is estimated that between 41% and 56% (dependent upon alignment) of the natural wetlands impacted are within this section. By evaluating the total wetlands (natural and man-made), it is estimated that between 33% and 46% of the total wetlands impacted are within this area.

TABLE 8

NORTHWEST HILLSBOROUGH EXPRESSWAY

PROJECT COSTS

DALE MABRY HIGHWAY TO I-275

TWO LANE ESTIMATE

ALTERNATIVE ALIGNMENT	FROM	TO	LENGTH (MI.)	1984 CONST. COSTS	ENGR. SURVEYS AND TESTING (15%)	ADMIN. LEGAL AUDIT & FINANCING	CONTIN-GENCIES (15%)	FDOT ROW ESTIMATE	FDOT RELOCATE ESTIMATE	1984 PROJ. COSTS	1987 PROJ. COSTS (8%/YR.)
Lake Brandt-North	Dale Mabry Hwy.	I-275	5.53	16,691,000	2,504,000	100,000	2,894,000	13,400,000	272,000	35,861,000	45,175,000
Lake Brandt-North w/Southern Crossover	Dale Mabry Hwy.	I-275	5.49	16,287,000	2,443,000	100,000	2,825,000	13,840,000	294,800	35,790,000	45,085,000
Lake Brandt-South	Dale Mabry Hwy.	I-275	5.27	18,425,000	2,764,000	100,000	3,193,000	13,540,000	416,900	38,439,000	48,422,000
Lake Brandt-South w/Northern Crossover	Dale Mabry Hwy.	I-275	5.53	19,333,000	2,900,000	100,000	3,350,000	14,640,000	400,400	40,723,000	51,299,000

FOUR LANE ESTIMATE

Lake Brandt-North	Dale Mabry Hwy.	I-275	5.53	25,590,000	3,839,000	100,000	4,430,000	13,400,000	272,000	47,631,000	60,001,000
Lake Brandt-North w/Southern Crossover	Dale Mabry Hwy.	I-275	5.49	24,877,000	3,732,000	100,000	4,306,400	13,840,000	294,800	47,150,000	59,395,000
Lake Brandt-South	Dale Mabry Hwy.	I-275	5.27	27,499,000	4,125,000	100,000	4,759,000	13,540,000	416,900	50,440,000	63,540,000
Lake Brandt-South w/Northern Crossover	Dale Mabry Hwy.	I-275	5.53	29,086,000	4,363,000	100,000	5,032,000	14,640,000	400,400	53,621,000	67,547,000

TABLE 9

RELOCATION IMPACTS

DALE MABRY HIGHWAY TO I-275

Alignment Alternatives	Numbers of Relocations Resid.	Business	Non-Profit	Total	Costs
Lake Brandt-North	24	4	0	28	$272,000
Lake Brandt - North w/Southern Crossover	30	3	0	33	$294,800
Lake Brandt - South	34	3	0	37	$416,900
Lake Brandt - South w/Northern Crossover	35	3	0	38	$400,400

TABLE 10

WETLANDS IMPACTED

DALE MABRY HIGHWAY TO I-275

Alternative Alignment	Acres Impacted			Percent of Total Alignment		
	Natural	Man-Made	Total	Natural	Man-Made	Total
Lake Brandt - North	27.30	3.69	30.99	41%	13%	33%
Lake Brandt - North w/Southern Crossover	36.13	3.39	39.52	48%	13%	39%
Lake Brandt - South	49.98	3.34	53.32	56%	13%	46%
Lake Brandt - South w/Northern Crossover	46.10	2.44	48.54	54%	9%	43%

4.4 TRAFFIC CONSIDERATIONS

The Draft Traffic and Revenue Study submitted by the traffic consultants (URS/Coverdale and Colpitts) contained mainline projections for 1988 and 2010. These projections indicated relatively light traffic could be expected between Dale Mabry Highway and I-275 in 1988. The mainline is expected to have 3,850 average daily traffic (ADT) between I-275 and US41 and 5,320 ADT between US41 and Dale Mabry Highway. Some increase can be expected by the year 2010, but still for an expressway facility the volumes are relatively light. The section between I-275 and US41 is expected to increase to 8,130 ADT and the US41 to Dale Mabry Highway section to 12,500 ADT.

In studying the trafffic flow in the year 2010, nearly 8,000 ADT can be expected to enter the expressway from I-275. This volume is expected to increase to over 12,000 west of US41. Such indicates that a good percentage of the expressway traffic west of US41 is local. It appears that the split would be approximately 60% bypass and 40% local. While this split indicates that the expressway would provide a service to the local residents, the volume is small (approximately 5,000 ADT) and can be provided by an improved local road network.

The interchange of the expressway with I-275 would require an interchange justification study to be reviewed and approved by the Federal Highway Administrative (FHWA). This study would contain a full analysis of the new interchange with the benefits and costs to the motoring public being the primary issue. It is our opinion that the low volume through the interchange would not provide for a positive benefit/cost analysis thereby making approval by FHWA doubtful.

Should the expressway not be built, this traffic would use other routes. It is expected that over one-half of the bypass traffic (3,000 to 5,000 ADT) would follow the interstate thru downtown. Considering the major renovations proposed for the Tampa Interstate System, the small volumes would not have any operational effects on the system. The remaining traffic would utilize the existing roadway network having little impact.

In final analysis, the low volumes proposed between Dale Mabry Highway and I-275 do not warrant an expressway type facility even at the year 2010. The bypass volumes are low and could be easily handled by an improved interstate system and use of CR54 and Dale Mabry Highway to the expressway. The local traffic from the Lutz area could still access the expressway by going west on local roadways to Dale Mabry Highway.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The various expressway alignment alternatives have been analyzed and evaluated based upon the six factors discussed in the previous sections. The alternatives were separated into the North-South Corridor and the East-West Corridor to facilitate determination of the most prudent alignment alternatives.

In the North-South corridor the Eisenhower alignments have been shown to have the lowest total relocations and the lowest relocation costs, provide the best traffic service and impact the lowest amount of natural wetlands area. These alignments would have higher project costs than the Dale Mabry "C" option; however, these are not considered significant as the Dale Mabry "C" alternative would require improvements to Dale Mabry Highway and Himes Avenue which are not reflected herein.

The Eisenhower alignments would also have less impacts on Section 4(f) properties. This alignment would be adjacent to a Hillsborough County Park at Gun Club Road; however, no land acquisition is anticipated. The Dale Mabry "C" would cross Horizon Park on structure and Dale Mabry "D" would be on Tampa Sports Authority property and adjacent to Tampa Stadium. Section 4(f) evaluations would be required should these alignments be considered viable.

In the northern half of the corridor the West alignment has some clear advantages over the Lynn-Turner alignment. One principal advantage is that it allows the development of the Anderson Road Extension to basically serve the Lynn-Turner area and goes west to serve additional traffic while having less impacts. The West Alignment has fewer relocations impacts, less natural wetlands, cost less and acquires fewer land parcels.

Based on this evaluation, the Eisenhower West alignment appears to be the most prudent alternative as it provides the best traffic service for the cost while having fewer wetlands, relocation and cultural impacts.

In the East-West Corridor, the alternative alignments were evaluated based on the same six factors plus a special evaluation of the area between Dale Mabry Highway and I-275. The special evaluation clearly indicated that the projected low traffic volumes do not warrant an expressway type improvement from Dale Mabry Highway to I-275. In comparing the alternative alignments in the western end of the corridor west of Dale Mabry Highway, neither of the two alignments show any significant variation in impacts or benefits and both appear to be prudent alternatives.

It is our recommendation to the Tampa-Hillsborough County Expressway Authority and the Florida Department of Transportation that all alignments except the Eisenhower West alignment in the North-South Corridor be eliminated from further consideration. In the East-West Corridor, we recommend all alignment considerations between Dale Mabry Highway and I-275 also be dropped from further consideration. However, we encourage Hillsborough County and the FDOT to consider improvements to east-west routes in this part of the County as the traffic studies show a travel desire from US41 to Dale Mabry Highway and westward. West of Dale Mabry Highway, the alternative alignments appear to be relatively equal in impacts, costs and benefits; therefore, we recommend that these be retained for analysis in the Draft EIS. The recommended alignments are shown in Figure 7.

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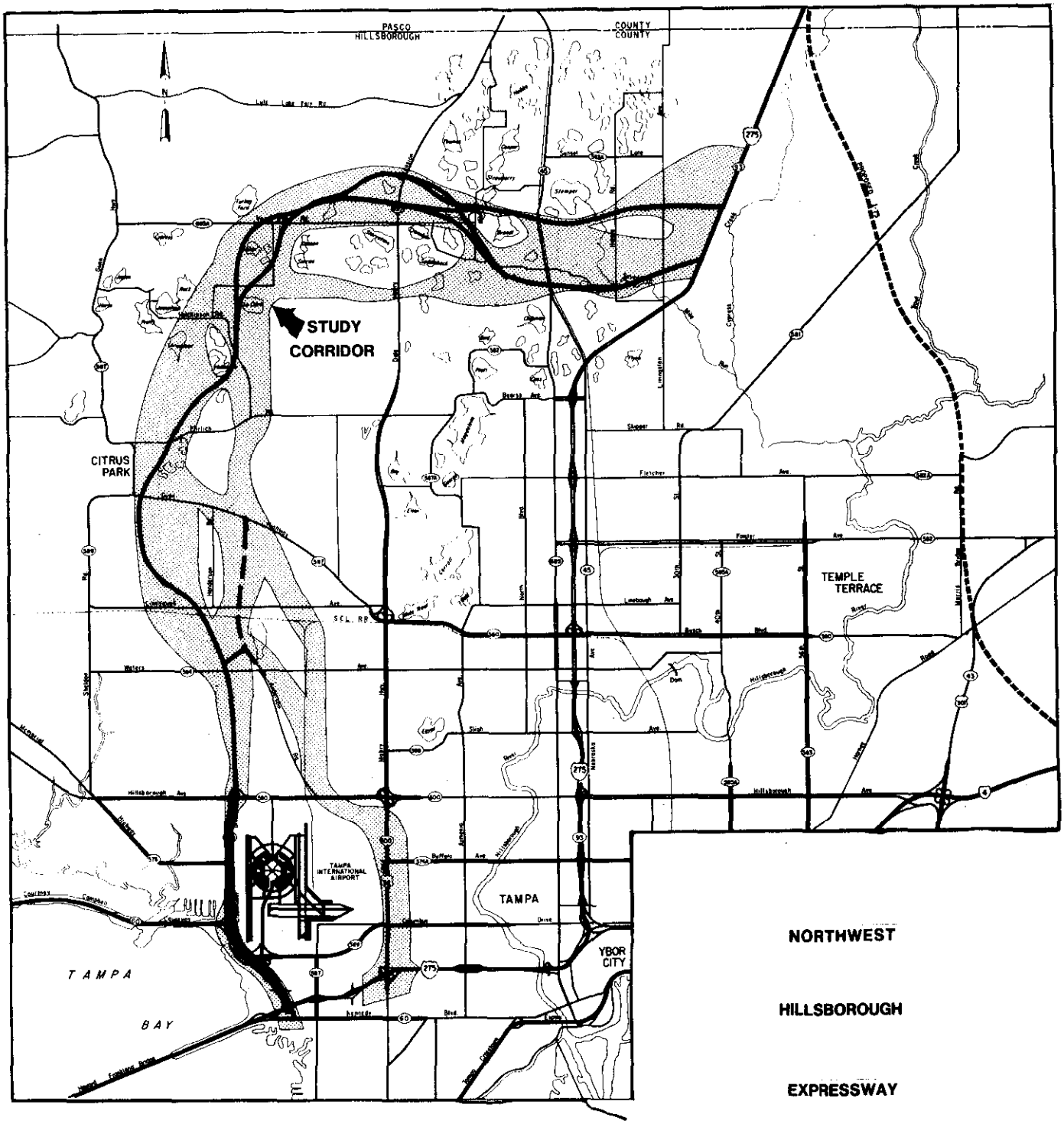

RECOMMENDED ALTERNATIVES

FIGURE 7