Interstate 595

LPA
Locally Preferred Alternative

RS&H
Reynolds, Smith and Hills, Inc.

I-95/I-595 Master Plan Study
Work Program Item No. 4040033
State Project No. 99004-1406
Federal Aid Project No. NH-9999(105)

Locally Preferred Alternative Description

As part of the Master Planning process, there are three *Tiers*, or phases of the study. In an earlier study, a Tier 1 assessment of the study corridors was performed. Specifically, the previous study examined eleven Conceptual Mobility Enhancement Alternatives (CMEA's), suggesting improvements to alternate travel modalities as well as transportation network components. At the conclusion of the Tier 1 study efforts, several of these wide range of possible transportation system improvements were grouped together to create five alternatives for additional analysis in Tier 2.

In the Tier 2 process, each alternative was further defined and evaluated as a system for operational performance, safety, surrounding corridor impacts, and cost. The alternatives were presented to the Broward County MPO in a meeting late in 1999. A Public Workshop was also held for the I-595 corridor in October of 1999. After reviewing and evaluating the proposed alternatives, the MPO adopted a preliminary "Locally Preferred Alternative" (LPA) which is a combination of the System and Transit Alternatives that best meets the overall transportation needs of the I-595 corridor. This LPA was then carried forward for further definition and analysis in the Tier 3 phase of the Master Plan.

The LPA has been refined and the preliminary system concept is being presented in this document.

LOCALLY PREFERRED ALTERNATIVE

The LPA incorporates the improvements adopted by the Broward MPOs in their 2020 Long Range Transportation Plan and includes planned expansion of Tri-Rail services. The plans call for major investment studies of the I-595 corridors. The adopted plan included the following elements:

The most extensive improvements are proposed for the I-595 corridor between SE 136th Street and the I-95 interchange. The adopted plan includes two physically separated reversible long- trip lanes in the center median of the freeway. By reversing the travel direction during peak times of the day, these lanes would add two lanes in the eastbound direction to the freeway in the morning and two lanes westbound in the evening. The long-trip lanes serve traffic traveling beyond Nob Hill Road to the west and State Road 7 to the east.

A continuous connection for SR 84 east of Davie Road would be provided. This connection would be part of an overall Collector/Distributor (CD) System that would provide access to and from I-95, SR 7, the Turnpike, Davie Road and SR 84.

Two lane ramps would be provided at the following locations:

Westbound Direction Off-Ramps	Westbound Direction On-Ramps	Eastbound Direction Off-Ramps	Eastbound Direction On-Ramps
University Dr.	Pine Island Rd.	Pine Island Rd./	University Dr.
Pine Island Rd.		University Dr.	
Nob Hill Rd.		Davie Rd.	
Flamingo Rd.			

Braiding of ramps (i.e. crossing over of on-ramps / off-ramps) between interchanges on I-595 to eliminate weaving sections from the mainline and SR 84 frontage roads. It is expected that the following locations would be affected:

Westbound Direction	Eastbound Direction
between University Dr. and Pine Island Rd.	between Flamingo Rd. and Hiatus Rd.
between Pine Island Rd. and Nob Hill Rd.	between Nob Hill Rd. and Pine Island Rd
between Hiatus Rd. and Flamingo Rd.	

In conjunction with ramp braiding, ***overpasses, or flyovers*** on SR 84 at one westbound and two eastbound intersections would carry through traffic over intersecting streets, eliminating conflicts with the intersection traffic. The Westbound overpasses would be built over Hiatus Road. Eastbound overpasses would be over Hiatus Road and Pine Island Road. Entering or exiting two interchange traffic volumes at one location again eliminates conflicts on mainline I-595.

Intelligent Transportation System (ITS) improvements such as service patrols and the installation of variable message signs, loop detectors, closed circuit television, ramp improvements and implementation of the Intelligent Corridor System are also part of this plan.

The ***transit*** element of the LPA develops a conceptual transit system along the I-595 corridor. The line would run along the southern side of I-595 for most of its length beginning in the vicinity of 136th Street. East of SR 7 the transit system would run in the median area of I-595. One spur would turn south to the existing airport long-term parking lot and Tri-Rail station. The other spur would continue east to US 1 and then north to downtown Fort Lauderdale. Although the exact station locations will be determined in a later study, it is anticipated that stations would likely be located west of SW 136th Street, between Hiatus Road and Nob Hill Road, and between University Boulevard and Davie Road, with terminals in downtown Fort Lauderdale, and at the airport long term parking area and Tri-Rail station. A more detailed alternatives analysis is needed to define specific alignment and technology recommendations.

The following sections provide details and the conceptual layout of the Locally Preferred Alternative.

MEETING SUMMARY
I-595 MASTER PLAN IMPLEMENTATION STRATEGY

Date: July 10, 2001

Location: FHWA – Tallahassee

Attendance: FHWA – Donald Davis, Steve Fennel, Don Horne, Cathy Kendall, Jim Matthews, Layne Patton, Muhammad Rauf
FDOT – James Golden, Bob Krzeminski, Ysela Llort, Warren Merrell, Gus Schmidt, Scott Seeburger, George Sirianni, Pete Tyndall, Jeff Bowen (RS&H)

MEETING PURPOSE: The purpose of the meeting was for FDOT to present the I-595 Master Plan Locally Preferred Alternative to FHWA staff, and to present the FHWA with a proposal concerning the IMR/IOAR process and environmental streamlining approaches to expedite production of the individual Master Plan projects, design exceptions, and toll financing.

CORRIDOR SUMMARY: The 13-mile I-595 corridor extends from Port Everglades and US-1 on the east, and I-75 and the Sawgrass Expressway on the *west (see I-595 Corridor graphics and typical sections, and aerials)*. The corridor is essentially six lanes with a parallel frontage road system provided by SR-84 westward . Major system connections include the I-95 interchange and the SR-84/SR-7/Turnpike interchange complex. The system interchange at I-75 is not within the study limits. Flyover ramps serve northbound-to-westbound and southbound-to-eastbound traffic accessing I-595 from University Drive. Connections exist for six other crossing streets. Mainline weaving sections exist between adjacent interchanges west of University Drive caused by the sequencing of on- and off- ramps. The eastbound SR-84 frontage road provides access to adjacent commercial and residential properties on the south. The westbound SR-84 frontage road on the north is bordered by the South New River Canal. SR-84 is currently discontinuous between SR-7 and Davie Road.

The corridor is 400 feet wide including SR-84. The 64-median is adequate for two additional highway lanes. Swales between the mainline and frontage roads west of Davie Road provide some space for facility development. Significant constraints are the existing pier placements for the University Drive flyover ramps which effects median development, the South New River Canal adjacent to the north border of the corridor, and land development adjacent to the southern border.

Major operational problems existing today include:

- The merging area of the southbound-to-westbound and northbound-to-westbound ramps from I-95 in the p.m.
- Conflicts associated with on- and off- ramps within the SR-84/SR-7/Turnpike interchange complex and the addition of SR-84 traffic to the mainline in this area.
- Weaving problems on the mainline west of University Drive due to the spacing of on-ramps and downstream off-ramps.
- Congestion on the one-lane off-ramps west of University Drive.

STUDY SUMMARY: The I-95/I-595 Master Plan Study was initiated in 1994 with the purpose of developing a realistic work program of improvements for I-595 and I-95 in Broward and Palm Beach Counties to address the future mobility needs in the two corridors. The I-595 Locally Preferred Alternative (LPA) for the Master Plan is the result of a three tier process that analyzed fifteen build alternatives including numerous combinations of single occupancy lanes, high occupancy lanes, reversible lanes, and capital transit services. It encompasses nearly twenty individual projects including a two-lane reversible roadway in the median, numerous ramp modifications and interchange modifications to more efficiently move traffic and improve safety, creation of a C-D system between Davie Road and I-95 to eliminate conflicts caused by entering and exiting ramp traffic, and a parallel rail system serving the I-75 area, South Florida Educational Complex, the Airport, Tri-Rail, and downtown Ft. Lauderdale.

The I-5959 portion of the Master Plan has been through and extensive public involvement program involving the Broward Metropolitan Planning Organization and its Technical Coordinating Committee and Citizen Involvement Roundtable. Five public workshops were held, a Public Focus Group involving agency and local community representatives was conducted, and a Public Hearing was held for the LPA. The LPA is the outcome of this process, which resulted in combining elements from the Tier 2 highway-oriented and transit-oriented alternatives.

FHWA Area Engineers have been continuously involved in the decision making process throughout the Master Plan development, with Derek Fusco and Jim Matthews being the last two involved. A significant milestone also included the involvement of Patrick Bauer and James St. Johns.

PUBLIC HEARING/MPO APPROVAL: A the Public Hearing, the comments received are summarized as follows:

- Congestion on I-5959 needs to be address quickly
- Dissatisfaction with seven to ten year time frame to begin any construction
- Even distribution between pro-highway and pro-transit elements
- Noise abatement was a critical concern

Base on comments received at the Public Hearing, a four-phase implementation strategy was prepared and subsequently approved by the Broward MPO (see I-595 Project Strategy graphic). As shown in the graphic, this included early-funded projects at the I-95/I-595 interchange, the I-595/Turnpike/SR-7 interchange complex, and 136th Avenue as a first priority; an alternatives analysis for capital transit and NEPA documentation for the reversible roadway as a second priority; interchange and ramp modifications at the Turnpike interchange, and ramp braids and ramp resequencing west of University Drive as a third priority; and projects associated with completing the C-D system between the Turnpike and I-95, Phase II work on I-95/I-595 interchange, and flyovers on SR-84 over selected cross streets as priority four.

The principal concerns of the MPO were that:

- The reversibly roadway should be constructed quickly
- Progress on the capital transit element of the LPA should not languish in lieu of progress on the roadway projects
- The roadway elements of the LPA should not be delaying in progressing on implementation of the transit element

To this end, the four-phase implementation strategy recognizes:

- The ability to construct some improvements since funding has been programmed already (Priority One projects)
- The high priority placed on proceeding with the alternatives analysis for transit and PD&E for the reversible lanes as the next logical steps of developing these to LPA elements (Priority Two projects)
- That progress on the roadway elements can be facilitated by practical/fundable project segmentation (Priority Three projects)
- That construction of the more costly and complex projects (Priority Four projects) can be delayed with implementation of the higher priority projects

PROJECT SEGMENTATION: Funding for individual projects has been programmed starting in FY09/10. The FDOT's long term funding plan is to have most of the work completed in the FY10/11 to FY14/15 period, with the remainder of the projects completed in the FY15/16 to FY19/20 time frame. The goals of the study are to develop a realistic/constructible improvement plan considering physical/environmental constraints, financing, and public input and to expedite production of the individual Master Plan projects. The Study is considered by FDOT to be the earliest broad-scale attempt at environmental streamlining. To this end, the LPA has been segmented into nearly twenty individual projects with preliminary determinations of the environmental documents required, associated environmental issues for each, and the type of corridor operational analysis needed *(see I-595 Segmentation Matrix)*.

PROPOSALS/CONCLUSIONS: The following proposals and their justification were presented to FHWA. The understandings reached by the two agencies are presented as well.

1) **The alternatives to be studied during PD&S should only include the Build and No Build alternatives** – fifteen different build alternatives were evaluated during Tiers 1 and 2 of the Master Plan Study. Environmental Study. Environmental issues were addressed at a fatal flaw level of analysis. The LPA consists of an integrated set of projects. This integrity would be compromised if alternatives analyses for the individual projects resulted in different design concepts and would necessitate a revisited corridor planning effort. A Public Hearing was conducted on the LPA.
Understanding – FHWA agreed to this concept.

2) **For PD&E projects of a CATEX-II or lesser class of action, no Public Hearing will be conducted** – Public Hearings will be conducted for projects necessitating an Environmental Assessment of Environmental Impact Statement. The public will have another opportunity to review these projects during the annual TIP adoption process.
Understanding – FHWA agreed to this concept.

3) **An Interchange Operational Analysis Report using Highway Capacity Software (HCS) will be prepared for the section from University Drive to the west. A system Interchange Modification Report using CORSIM will be prepared for the section from I-95 to University Drive** – During the Tier 3 process and to expedite ensuing project production activities, a traffic operational approach that could be used in subsequent development of system interchange analysis and reporting was presented to FHWA. FHWA agreed to this approach in May 2000 prior to the Master Plan traffic analysis.
Understanding – FHWA agreed to this concept, but will consult with headquarters regarding the need to use HCS techniques for the section that CORSIM is used. Agreement was reached creating a system report for the section from I-95 to and including University Drive.

4) **Design Exceptions are proposed for the Causeway (some lanes less than 12 feet, shoulders less than 10 feet), and the vertical and horizontal curves for University flyover ramp replacement** – Reducing the widths of shoulders and some through lanes will dramatically reduce the right-of-way and construction costs of causeway improvements through restriping versus construction modifications. A previous understanding with FHWA at University Drive was that in-kind reconstruction of the flyover ramps would be acceptable if it was determined that there is not a crash problem. The crash analysis indicates that there is not a crash problem today. The proposals for University Drive will reduce significant right-of-way impacts.
Understanding – The specific design parameters were not presented. FODT will provide these to FHWA for further consideration at a later date. FHWA understands the intent of the exceptions and will require backup and possibly additional updated analysis.

5) **Level of Service failures are unresolved for the eastbound on-ramps at Nob Hill Road, Pine Island Road, and Davie Road** – Design solutions to overcome the geometric constraints will have significant impact on right-of-way and construction costs. The philosophy for addressing the traffic flow problems is to have them occur on the on-ramps and not the mainline lanes.
Understanding – FHWA agrees with this but would like to see analysis documentation.

6) **Tolling is proposed for evaluation in the PD&E study for the reversible lanes project** – An exploratory analysis conducted during the Master Plan Study found that tolling the reversible lanes would generate revenues that could capitalize a significant percentage of the construction

costs, and that a more detailed Toll and Revenue Analysis is warranted. The concept is to operate the facility as an open toll system with electronic tolling similar to Sunpass. Toll rates of $0.50 to $1.25 were evaluated. The concept for the exploratory analysis is a flat rate structure changed to all vehicles. The Toll and Revenue Analysis would consider variable tolling for vehicle occupancy, time-of-day, and congestion levels.
Understanding – This will be discussed at a later date, possibly during scoping for the PD&E study.

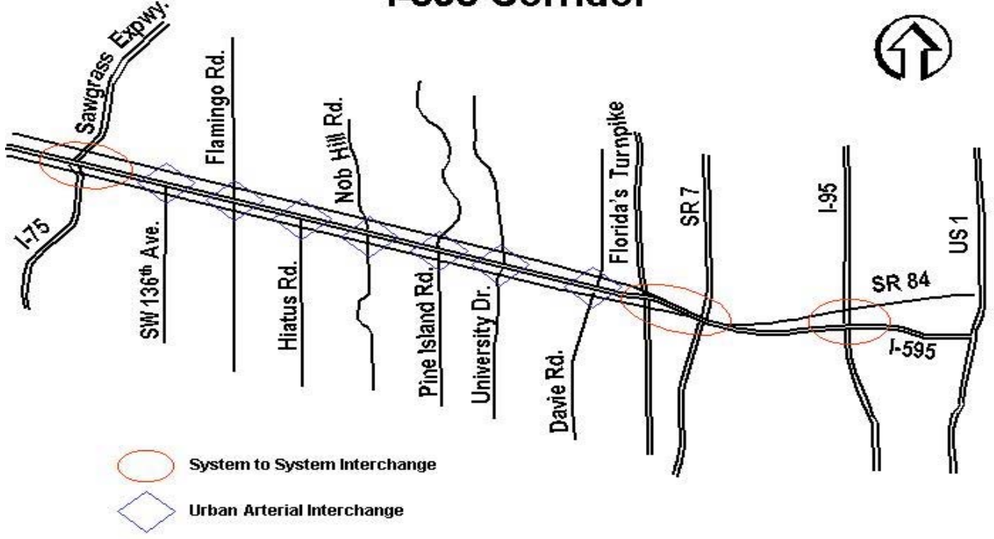
7) **Mater Plan Documentation** – FHWA wants to see documentation of the Public Hearing issues and graphics depicting the design recommendations.
Understanding – FDOT will include these in the draft and final documents transmitted to FHWA.

8) **I-95/I-595 Interchange and SR-84 westbound continuous connections (Priority One projects)** – The FHWA would like to see a clearer description of the physical improvements proposed to alleviate the congestion on the southbound and northbound I-95 ramps to westbound I-595, and in the westbound direction in the SR-84//SR-7/Turnpike area.
Understanding – FDOT will provide this.

9) **Impacts to Tri-Rail Double Tracking and Ft. Lauderdale-Hollywood International Airport Expansion projects** – Master Plan improvements will not penetrate into the Rail Corridor or negatively effect vertical clearances. None of the Tri-Rail's recent right-of-way requests are located in the Master Plan Improvement area. The modifications to I-595 as part of the Airport access changes will be included in the Master Plan document.

I-595 Corridor

I-595 Corridor



Corridor Travel Demand

An analysis of 2020 traffic flow conditions in the I-595 corridor indicates that congestion will worsen if only improvements approved as part of the county's long range transportation plans are implemented.

Roadway

The Long Range Transportation Plan includes minor interchange improvements, widening I-595 to ten lanes between SR 7 and I-95 and reconnecting the two segments of SR 84 east of SR 7. Projected traffic demand will continue to exceed roadway capacity on I-595 for its entire length between the Flamingo Road and I-95 interchanges. Traffic demand on the freeway ramps will exceed capacity at the following interchanges: Pine Island Road, University Drive, Davie Road, Florida Turnpike, SR 7 and I-95.

Transit

The transit elements of the Broward County and Palm Beach County Long Range transportation Plans are included in this scenario. The transit element of the Broward County plan includes the addition of three high performance transit routes: 1) along the I-595 corridor, 2) serving downtown Fort Lauderdale, and 3) linking the Broward Tri-Rail station with the Pro-Player Stadium in Dade County. A new Tri-Rail station is proposed for Pompano Beach at Atlantic Boulevard. The transit element of the Palm Beach County plan includes: a new bus route along Jog Road; express service on four routes: West Palm Beach to Jupiter, West Palm Beach to Boca Raton, West Palm Beach to Wellington, and Boca cross-town along Palmetto Park Road; and reduce headway on all routes to 30 minutes.

As with the No-Build Alternative, full double-tracking of Tri-Rail will be completed and the system will operate on a twenty-minute headway. Tri-Rail is projected to operate on a six-zone fare system as it does today. This study projects Tri-Rail ridership to increase to 15,500 passengers per day by the year 2020.