



Dade County
Metropolitan Planning
Organization

**Dade County
Transit Corridors
Transitional Analysis**

**Technical
Memorandum
Task 4:
Evaluation Methodology**

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Dade County Transit Corridors Transitional Study

Task 4

EVALUATION METHODOLOGY

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EVALUATION METHODOLOGY

The Transit Corridors Transitional Study involves the identification of transit alternatives in six primary transit corridors, evaluation of the alternatives in each corridor, and evaluation and comparison of various corridors. The purpose of this evaluation is twofold:

- to identify a proposed transit improvement project for each of the six corridors; and
- to identify a viable set of alternatives and to select a priority corridor to advance into the federal alternatives analysis / draft environmental impact statement phase in order to maintain eligibility for the federal major capital investment process.

This federal process is required for transit projects to be eligible for Federal Transit Administration (FTA, formerly UMTA) discretionary capital funds. This memorandum describes the methodology that will be used to evaluate modal and alignment alternatives in each corridor and evaluate the various corridors.

The goal for these transportation improvements, as stated in the Year 2010 Metro-Dade Transportation Plan is to "provide for a safe, efficient, economical, attractive, and integrated transportation system that offers convenient, accessible, and affordable mobility to all people and for all goods, conserves energy, and protects both the natural and social environment." Specific objectives of the Plan which are addressed by the transit services under study include:

1. Improve transit facilities in Dade County to achieve the operating levels of service adopted in the Comprehensive Development Master Plan.

2. Provide an integrated system which includes ease of transfer between all modes of transportation.
3. Provide convenient, accessible, and affordable transportation services and facilities.
4. Provide equitable transportation services to all groups in the metropolitan population, including the elderly, handicapped, low income, and other transit-dependent persons.
5. Plan and develop a transportation system that preserves the integrity of urban communities, environmentally sensitive areas, and conserves energy, and natural resources.
6. Enhance urban design integrity through transportation system improvements and expansions which beautify the urban environment.

IDENTIFYING ALTERNATIVES IN EACH CORRIDOR

The six original corridors of the Transit Corridors Transitional Study were identified in the Metro-Dade Year 2010 Transportation Plan. The alternatives within each corridor were developed based on the objectives listed above and building on current services and facilities in the corridors and relevant previous or on-going studies and project development activities.

The first step in identifying alternatives within each corridor was a preliminary sketch plan session with representatives of several County and State planning and transportation agencies in which current and future travel patterns and transportation needs were

identified and a range of transit modes and potential alignments to address these needs were identified in each corridor. Alternatives were included in this phase if they:

- were responsive to corridor transportation needs,
- were feasible from a physical or operational standpoint,
- had acceptable capital costs,
- had acceptable levels of community or environmental impacts,
- had political and community support, or
- had no insurmountable institutional or regulatory barriers to implementation or operation.

The general criteria were applied within the context of conditions and experience in Dade County and based on experience on similar situations in other cities.

From this effort, a preliminary set of alignment and mode alternatives was identified and reviewed with representatives of county and state agencies. These alternatives are identified in a technical paper titled "Identification of Preliminary Alternatives." A summary of the six corridors and the transit mode technologies considered are summarized on Table 1. As these options are presented to the public through the community involvement program, other alternatives may be suggested. These suggested alternatives will be assessed against the screening level criteria for possible inclusion in the set of corridor alternatives for more detailed analysis.

EVALUATING ALTERNATIVES IN EACH CORRIDOR

The next phase, evaluating alternatives in each corridor, is directed at both establishing a proposed transit improvement for each corridor and a viable set of alternatives for each corridor which will represent the package of alternatives to be analyzed in the corridor(s) selected to be advanced into the subsequent AA/DEIS phase. If at the end of the identification of the alternatives step and public review process a large number of

TABLE 1 -- PROJECT SUMMARY

INTRODUCTION

The Transit Corridors Transitional Study is being conducted by the Dade County Metropolitan Planning Organization to identify and evaluate transit alternatives in six corridors within the County. At the conclusion of the study a set of potential alternatives for each corridor will be presented and one or more corridors will be advanced into a more detailed alternatives analysis/draft environmental impact stage or other stages of project development.

TRANSIT CORRIDORS STUDIED

The six corridors under study are:

- **South**
Dadeland South Metrorail Station to Cutler Ridge (8.4 miles)
- **Kendall**
Dadeland North Metrorail Station to S.W. 137th Avenue (7.5 mi.)
- **North**
Dr. M.L. King Jr. Metrorail Station to N.W. 215th Street (8.5 miles)
- **Northeast**
Downtown Miami to N.E. 199th Street (13.6 miles)
- **Beach**
Downtown Miami to 71st Street on Miami Beach (10.9 miles)
- **West**
Downtown Miami to Florida International University at the Homestead Extension of the Florida Turnpike (H.E.F.T.) (12.2 miles)

A proposal which combines aspects of both the West and Beach Corridors is also under study:

- **West Corridor-Beach Corridor Proposal**
F.I.U. to Miami Beach via downtown Miami including a connection from Miami International Airport to the Seaport (24.2 miles)

The West Corridor-Beach Corridor Proposal would provide service for West Dade and Miami Beach residents, airport passengers and employees, cruise ship passengers and employees, downtown workers and guests, and access to the proposed Airport Multimodal Access Center where various transportation and airport services may be located.

In addition, a shorter extension of Metrorail has been identified for further study:

- Okeechobee Station to Palmetto Expressway (SR 826) Extension (0.7 miles)

TRANSIT MODES CONSIDERED

Six public transit modes may be applied to meet transit needs in the corridors. The key features of each mode are outlined below. The attached table indicates the various modes which may be applied in each corridor.

Local On-Street Minibus / Jitney

Minibus service operates in mixed traffic making frequent stops.

Local On-Street Bus (Metrobus)

Local bus service operates in mixed traffic making frequent stops.

Priority Bus Lanes

Priority bus lanes or transitways are characterized by buses operating on exclusive bus lanes along a street and making periodic stops.

Express Busway

Buses operating on an express busway normally collect passengers on local streets or at park-and-ride facilities at one end of the busway, then operate with few or no stops until reaching the other end of the busway. An express busway may be along a roadway or on a separate right-of-way and may include high occupancy vehicles or be restricted to buses.

Light Rail Transit (LRT)

Light rail transit is a flexible mode which can operate in a variety of settings including in mixed traffic like streetcars, on an at-grade right-of-way with street and pedestrian crossings, or on a fully segregated right-of-way. An LRT option of particular interest in Dade County is a "hybrid" vehicle which can operate both on Metrorail tracks and on tracks with street crossings or in mixed traffic.

Heavy Rail (Metrorail)

Heavy rail carries large passenger volumes at high speed but must be on an exclusive guideway throughout (no crossings).

Automated Guideway Transit (Metromover) and Commuter Rail (Tri-Rail) were deemed inappropriate for the corridors under study.

alternatives in any of the corridors results, a screening process will be used to reduce the number of alternatives that will be subjected to the detailed technical analyses including patronage forecasting and capital cost estimating. This screening process will apply the criteria used in the previous step supplemented some technical analyses. The goal in this screening step is to eliminate alternatives which are not deemed viable based on criteria discussed below. Alternatives which fall within a window of viability and effectiveness will be retained. The detailed analyses of the resulting set of alternatives will provide information and data for the technical evaluation of the alternatives using the criteria discussed below. As described earlier, the objective of this evaluation is to select a proposed project(s) that best meets the objectives of the corridors.

In addition to the identification of a proposed improvement project for the corridors, the results of the technical evaluation will provide the information to identify a set of alternatives for one or more corridors which could be advanced into a federal AA/DEIS. FTA's AA/DEIS guidelines require that in addition to fixed guideway options the set of alternatives include a No-Build or no action alternative (consisting of existing and committed transportation services and facilities) and a Transportation Systems Management (TSM) alternative consisting of existing services and facilities plus relatively low cost, operationally oriented service improvements.

Each of the alternatives will be evaluated based on the following criteria:

Ridership And Revenue

Ridership estimates will be developed for each alternative from the travel demand analysis. The following ridership figures will be evaluated for each alternative:

- Total corridor transit ridership
- New transit ridership
- Line-haul ridership

- Reverse commuter ridership
- Fare box revenue

Time Savings

Travel time savings which result from improved transit will be calculated for each alternative including:

- Total time savings and value
- Reduced travel time for auto and non-auto access trips on selected trip patterns including trips to the Miami CBD and other destinations in each corridors

Traffic Operations and Level of Service Impacts

The impact on auto travel will be assessed including:

- Diverted auto trips and VMT
- Level of service changes on major roadway links
- Major roadway impacts including lane closures, turning restrictions or prohibitions, parking and property access.

Capital Cost

Construction costs for each segment of each alternative will be estimated. The potential risk of unforeseen costs (as with tunnel construction, for example) will also be assessed.

Operations and Maintenance Cost

The impact of each alternative on the cost of operating and maintaining the transit system will be assessed. Net revenue changes will be compared to net O/M changes.

Right of Way and Station Area Impacts

Unmitigatable impacts of right of way and stations will be qualitatively assessed including displacements, relocations, impacts to adjacent land uses, wetlands, and other impacts.

Community and Political Acceptability

The concerns of communities and elected representatives will be assessed for each alternative through the public involvement program. Environmental impacts particular to each corridor will be considered.

Implementation Feasibility

The feasibility of implementing each alternative will be assessed with attention to insurmountable constructability, ROW availability, environmental, institutional or regulatory barriers.

Using the cost and ridership benefits estimated from the above criteria, an FTA cost effectiveness index will be calculated.

The results of each corridor's technical analysis and assessments will produce the information to evaluate the alternatives against these criteria. The information will be arrayed in a **summary matrix** displaying the measures and assessments for each alternative. A second matrix, called a **focus display matrix** will highlight the distinguishing measures and criteria among the alternatives -- i.e., this matrix will only include those criteria and measures that differentiate among the alternatives. A third display is a **goals achievement matrix** where the degree to which each alternative satisfies or addresses each of the stated goals for the region or corridor is qualitatively

presented. Based on the results of these analyses, the project(s) for each corridor will be identified. This same format can be used to identify a corridor set of alternatives for a federal AA/DEIS.

RANKING CORRIDORS

If appropriate, a further step of the Transit Corridors Transitional Study will evaluate the six corridors for the purpose of establishing regional priorities or to establish one or more priority corridors to advance into a federal AA/DEIS process. The corridors will be compared based on transit needs, ability of the available alternatives to address those needs, and local financial, political, and community support for implementation in each corridor. One or more corridors may be identified. It is expected that this assessment will focus on those corridors or pieces of corridors for which federal assistance is needed and will not concern any corridor in which a non-federal project has been identified, except to the extent that it interfaces or is integral to other corridors. The evaluation matrices format described above for the corridor alternatives evaluation will be applied in this phase as well.

The criteria categories for evaluating the corridors are similar to those for evaluating the alternatives in each corridor with emphasis on distinguishing among corridors, and include:

Transit needs in each corridor

Severity of the transportation need (demand) or problem relative to regional objectives, and ability of one or more alternatives to serve corridor transit needs will be assessed. Projected ridership, diversion of trips from autos, reduced traffic congestion, and

reduced travel time which would result from implementation of transit improvements in each corridor will be evaluated and compared.

Cost of implementation

Capital and operating cost of transit improvements in each corridor will be compared. Local financial commitment to improvements including contribution of land or construction of facilities by developers or other interests will be considered.

Cost effectiveness

The relative cost and benefits of transit investment in each corridor will be compared -- particularly the FTA cost-effectiveness indices for the set of corridors and the 15,000 daily transit ridership threshold.

Local support

Local support (and opposition) to transit improvements in each corridor will be examined. Both public support and support from political leaders will be considered.

Implementability

The ability to implement transit improvements in each corridor will be considered based on physical considerations, environmental issues, ROW considerations, availability of funds, and local support.

