ELECTROWAVE

Seven-Year Long-Range Plan

FINAL

Sponsored by:
Miami- Dade Metropolitan Planning Organization
Miami Beach Transportation Management Agency
City of Miami Beach

CORRADINO

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1. Introduction

The Miami Beach Electrowave shuttle system will soon complete its fourth year of operation in South Beach. This 7-year long range plan provides the City with preliminary planning information to enable decision makers to determine if there is a need to continue or expand Electrowave service.

The Corradino Group was tasked to develop a 7-year long range plan to examine the feasibility of expanding Electrowave service in South Beach, Middle Beach and North Beach. This included a review of the existing service the development of a set of goals and objectives and the analysis of key issues including economic benefits, capital and operating needs, funding strategies, among other concerns. This process was performed in close coordination with the City Staff and the selected project steering committee which met frequently to direct the effort.

The Electrowave is important to the City of Miami Beach from a mobility and economic development standpoint. The TCMA code adopted by the City, requires alternate transportation with increased development. The average level of service standard required by the TCMA relies on mass transit. It states "...the adopted TCMA LOS standards shall be implemented as follows...Where extraordinary transit service, classified as the Electrowave shuttle or express or peak-hour limited stop bus service, exists parallel roadways within 1.4 mile shall operate at no greater than 150 % of LOS D.." Without the Electrowave shuttle, all roads must average LOS D. This would restrict most planned, high density developments and restrict new developments due to increased traffic. The following are the main areas of concern addressed in this report.

1.1. MAINTENANCE

It is the recommendation of the project team that fleet maintenance should be privatized to increase the efficiency of the overall system and improve headways on individual routes. A private company that specializes in electric shuttle maintenance would likely establish a more reliable system than the one that currently exists. Problems with maintenance and battery capacity have reduced the number of vehicles in circulation which impacts frequency of service and ridership levels. An improved maintenance program would provide consistent headways and allow room to increase frequency of service as needed in the future. It would ultimately increase ridership and reduce the total cost per passenger. As part of this recommendation, the MBTMA will be spending funds on new equipment for existing vehicles, rather than new vehicles.

1.2. SERVICE EXPANSION

The existing service and preliminary phases of the expansion must be efficient and meet the demands of riders prior to further expansion. This includes understanding the expansion vision, understanding the costs of the system, and understanding the funding options. The expansion should not occur unless the existing services are meeting performance criteria. The Electrowave can expand to Alton Road, Collins on Middle Beach, and circulate around North Beach. The projected operating cost is $3.8M annually and total capital costs for the 7-year period is approximately $10.4M. The City is currently and should continue to be the major funding source for the Electrowave, through parking revenue as well as impact fees. Other funding sources will provide minor assistance to the shuttle system. It is important that during this process, expansion is justified through service performance measures adopted by the MBTMA.

2. Goals and Objectives

The 7-year long range plan for the Electrowave was developed based on existing and future ridership needs, expansion needs, viable funding options, and public support.

During the course of this study a series of meetings were held with Electrowave stakeholders in addition to the project's steering committee appointed by the City of Miami Beach. The stakeholders were interviewed one on one. These interviews along with project research on each of the tasks provided the basis for the system's goals and objectives presented below.

Main issues concerning the Electrowave service concentrate on funding constraints, constraints on maintenance space and storage space, and the cost of the system.

Goal 1: Fulfill existing ridership needs while planning future service.

Objective 1.1: Develop performance standards to be utilized in actively managing the system's routes and finances.

Objective 1.2: Encourage local resident ridership by decreasing headways to between 10 and 12 minutes, where needed.

Objective 1.3: Continue to reevaluate routes to best serve Miami Beach residents.

Objective 1.4: Examine utilization of Intelligent Transportation System to inform motorists of congestion and parking issues.

Objective 1.5: Conduct annual ridership surveys

Objective 1.6: Assess system in Passenger/Vehicle Mile

Goal 2: Expand Electrowave service.

Objective 2.1: Examine South Beach service expansion along West Avenue or Alton Road.

Objective 2.2: Increase efficiency for Electrowave service in South Beach as first priority. (1-2 years)

Objective 2.3: Negotiate with MDT to take over the W route.

Objective 2.4: Examine alignment potential along Collins north to 41st Street.

Objective 2.5: Begin service in North Beach within 4 to 7 years.

Objective 2.6: Examine North Beach service as a Circulator in the North Beach area, not necessarily a connector with Middle and South Beaches. This service is already provided by MDT.

Objective 2.7: Purchase five new hybrid vehicles to service South Beach expansion.

Objective 2.8: Reduce headways on all routes to 10 to 12 minutes.

Objective 2.9: Review hours of operation on an annual basis.

Objective 2.10: Further enhance the relationship between the Electrowave and parking through park and ride opportunities.

Objective 2.11: Develop a park and ride location, intermodal distribution center or intermodal intercept center.

Objective 2.12: Continue to utilize the Electrowave as a way to enhance mobility and mitigate ever increasing traffic and congestion problems.

Objective 2.13: Work to utilize the Convention Development Tax to develop facilities.

Objective 2.14: Consider inter local agreement with MDT to run "Route W".

Goal 3: Seek stable funding options that allow the Electrowave to continue serving Miami Beach.

Objective 3.1: Develop a Transit Development Plan and attain status as a "designated recipient" of federal Section 5309 to attain State Block Grants.

Objective 3.2: Work with hotels and the private sector to develop a dedicated source of funding from a combination of public and private sources such as:

- Develop an incentive to encourage those using parking to ride the Electrowave.
- Investigate the feasibility of a parking surcharge.

Objective 3.3: Further utilize parking funds to support Electrowave service.

Objective 3.4: Examine the ability to utilize Convention Development Tax (CDT) funds for the Electrowave.

Objective 3.5: Utilize Concurrency Mitigation funds to support Electrowave Service.

Objective 3.6: Privatize Electrowave maintenance service.

Goal 4: Develop public interest in the Electrowave

Objective 4.1: Enhance the MBTMA Board, with participants from the public and private sector.

Objective 4.2: Expand marketing efforts.

Objective 4.3: Make Electrowave stops more noticeable, by enhancing signage, shelters, lighting, etc.

Objective 4.4: Make a stronger connection between the Electrowave and the Parking Department, enhancing the service as a park and ride service.

Objective 4.5: Position the Electrowave Service to become a viable option to parking, as access and mobility become increasingly constricted over time.

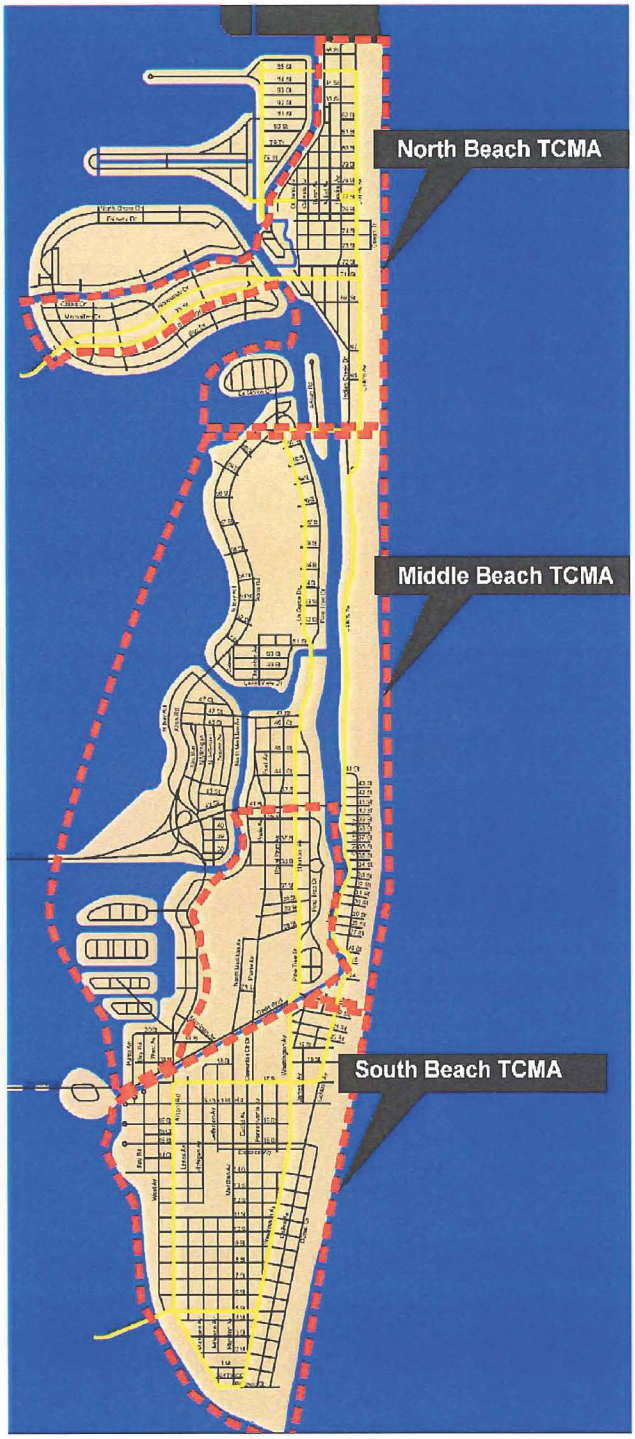


FIGURE 1
Miami Beach TCMAs

3. Expanded Action Plan

3.1 TRANSPORTATION CONCURRENCY MANAGEMENT AREAS

Without the Electrowave service, the City would be unable to maintain a level of service prescribed by the TCMA policy, thus curtailing new development and forcing the city into a development moratorium.

With the acceptance by the City and the State of the Transportation Concurrency Management Areas (TCMAs), the City has focused on developing the "Urban Transit Village" concept. The TCMA legislation is based on the concurrency requirements established by the Department of Community Affairs as illustrated in Figure 1. The DCA requires developers to provide sufficient infrastructure to support new developments. In terms of transportation, the 9J-5 legislation states that "The purpose of the transportation element shall be to plan for a multimodal transportation system that places emphasis on public transportation systems." It also states that "local comprehensive plans be consistent with the appropriate strategic regional policy plan to the State Comprehensive Plan." This includes maintaining a standard level of service on roadways.

Developments that potentially have a negative impact on the level of service may not be approved for construction, thus affecting the economic vitality of Miami Beach. The Electrowave is a viable, important, and necessary tool for maintaining the required level of service while accommodating new development. In fact, studies have shown that every $1 spent on transit is equivalent to $3 in economic development.

The Transit Village is most applicable in areas with high density development, such as South Beach, that are amenable to transit. To enhance ridership in this area, transit needs to run at high frequencies, approximately every 10 to 12 minutes. This is one of the first steps towards making transit a more attractive option to the Miami Beach community. High frequencies are necessary to compete with a relative abundance of inexpensive parking (in transit terms) and the ease at which people can use their vehicles. The second step towards making transit more attractive is to expand into the western portion of South Beach, Middle Beach, and North Beach. This

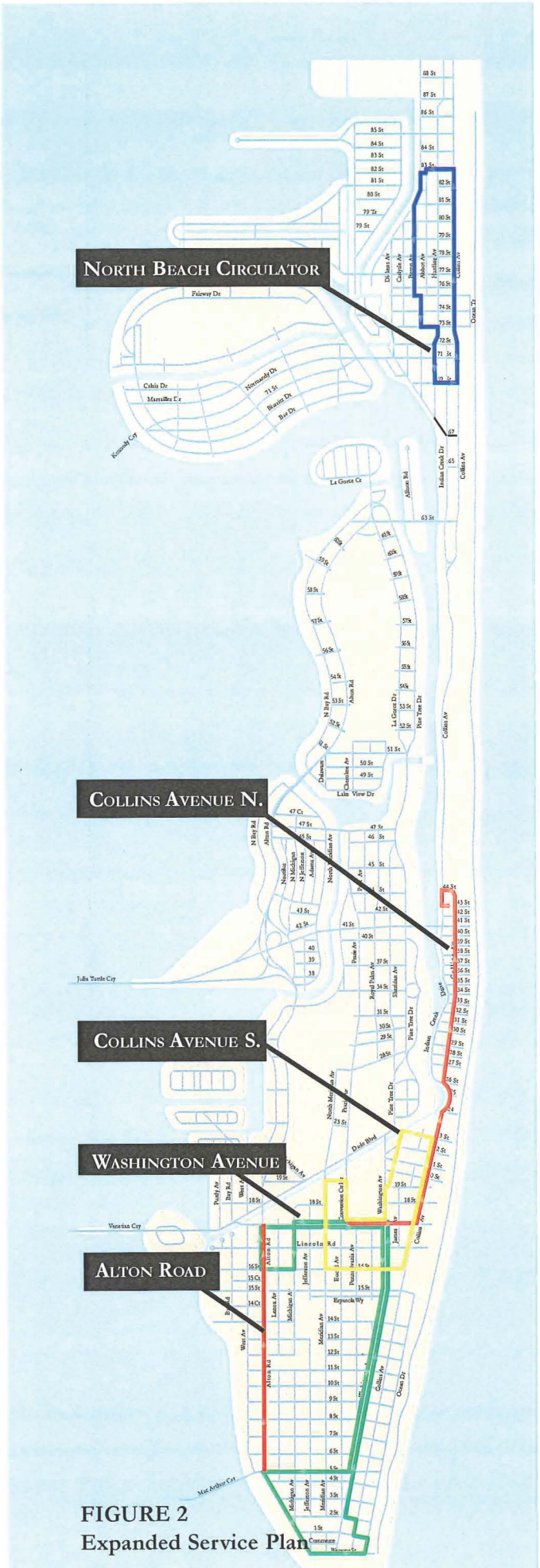


FIGURE 2
Expanded Service Plan

will create more options for transit usage on Miami Beach and serve the denser communities along Collins including the hotels. The goal of the Electrowave is to create more choices for mobility as automobile access and parking options continue to dwindle.

3.2 PLAN OF ACTION

The following discussion presents the recommended service development plan for the Electrowave. The plan is presented as follows:

- ***Short-range***
- ***Mid-range***
- ***Long-range***

Existing Service

The existing service operates on Collins and Washington Avenues and is providing service at 15 to 18 minute headways. Currently to operate these routes the Electrowave uses 11 buses. It cost $550,284 to operate the Collins Route and $1,375,709 to operate the Washington Route for a total of $1,925,993. It is expected that these routes will be enhanced to provide 10 to twelve minute headways. For this to be done it will require one additional bus on each route. Buses, costs and ridership for the existing service, the enhancement of the existing service and each scenario of the long range plan are presented in Table 1.

Short-range Scenario

In the short-range (year one after plan adoption) the Electrowave should continue provide its current Washington and Collins Avenue routes (enhanced to 10 to 12 minute headways) and develop a route along West Avenue or Alton Road from 5th Street to City Hall. (see Table 1) This would require an additional two buses and cost $550,284 to operate annually.

Mid-range Scenario

In the mid-range scenario (years 2-5 after plan adoption) the Electrowave should build on the existing service and the short range scenario and develop a route on Collins Avenue from City Hall to 43rd Street to service the hotels. (see table 1) This would require three additional buses and one spare and would cost $825,426 to operate annually.

Long-range Scenario

In the long-range scenario (years 5-7 after plan adoption) the Electrowave can build on the previous scenarios and expand to North Beach and circulate from 69th Street to 83rd Street along Collins and Byron Avenues. (see table 1) This would require two additional buses and cost $550,284 to operate annually.

All totaled the enhancement of the existing service and the implementation of the three scenarios will require a total of 19 buses (16 in operation, 3 or 20% as spares) The system will operate approximately 108,160 hours and have an operating cost of $4,402,270 as it carries 2,690,480 passengers.

TABLE 1

Electrowave Alternatives

Alternative	Route Length (miles)	Running Time (Mins.)	Vehicles Required[2]	Ann. Rev. Hours	Operating Cost	Projected Ridership[3]
Existing Service						
15 to 18 Minute Headway on Collins Route	3.0	30	2	13,520	$ 550,284	13,832
15 to 18 Minute Headway on Washington Route	5.8	55	5	33,800	$1,375,709	761,070
Existing Service Enhancements						
10 to 12 Minute Headway on Collins Route	3.0	30	3	20,280	$ 825,426	297,440
10 to 12 Minute Headway on Washington Route	5.8	55	6	40,560	$1,650,851	1,703,520
Short-range						
Alton Rd./West Ave. Route (15 min. headway)	2.8	25	2	13,520	$ 550,284	243,360
Mid-range						
Middle Beach/Collins Ave. Hotel Route (15 min. headway)	4.2	35	3	20,280	$ 825,426	223,080
Long-range						
North Beach Circulator (15 min. headway)	2.4	20	2	13,520	$ 550,284	223,080
Total	--	--	16*	108,160	$4,402,270	2,690,480

[1] Routes are assumed to operate at 6.3 miles per hour (the same as the existing Washington Ave. Route and running times are averages and in

[2] Vehicles required equal running time divided by headway and rounded up.

[3] Operating costs are based on a cost per hour of $40.70 which is based on operating budget information provided by MBTMA (2001)

[4] Ridership was based on the following
Alton Road: First year ridership is assumed to be 80% of existing Washington Ave. ridership in terms of passengers per hour.

3.3 SERVICE STANDARDS

As the Electrowave expands and develops the MBTMA needs to measure and evaluate the system based on a set of service standards, in order to provide the highest quality services in an efficient manner. It is not the purpose of this report to develop such standards, rather to recommend that they be developed as the system expands.

The purpose of service guidelines are to enable managers to monitor the system, provide a basis for modification to the service and routes in a timely manner, and operate the system with the highest quality of service and efficiency. Developing service guidelines should be a short-term priority once the existing service is performing adequately.

Essentially, service guidelines focus on several items:

- design of routes and schedules,
- route performance (i.e. passengers per hour or mile),
- hours of operation,
- frequency of service,
- stop spacing and features

Route design and schedules should focus on developing and maintaining routes which consider potential ridership, service area characteristics, route spacing, stop spacing, and stop attributes. Potential ridership can be identified by studying the population densities and employment characteristics as well as a transit dependence analysis. These factors will deal with the number of persons per square mile as well as the age, income and vehicle ownership characteristics of those people and can be done at the TAZ level. This analysis should be in conformance with the City's comprehensive plan.

The geographic condition of Miami Beach will influence several of these service characteristics. According to MDT the current Electrowave service area is split between primary and secondary transit dependent census tracts. Future expansion as specified in this plan will focus primarily in these areas with the future North Beach Circulator proposed in an area of primary transit dependency. The mid-term expansion scenario will service the tertiary level of transit dependent census tracts.

Service guidelines for stop spacing guide the balance between the frequency of stops and the duration of a trip along a route. Amenities at bus stops are dependent on daily passenger boardings and may include signage, wider sidewalks, seating, permanent shelter, route maps, and lighting. Frequently MDT and the Electrowave share stop locations. Therefore, these amenities should be coordinated.

In addition service spans should be considered and general hours of operation should be standardized as the system grows.

In terms of frequency of services, the Electrowave would eventually like to reach headways of 5 minutes on its current and potential routes. Higher passenger demand should dictate headways. In cases of high passenger demand loading guidelines are implemented. MDT specifies Average Maximum Load Guidelines for its Metrobus routes that may be applicable.

Route performance should be constantly measured in order to respond to the changing needs of the community, and to ensure the highest quality and most cost effective system that can be provided. This is generally measured by riders per hour and net cost per rider. These measure the productivity of particular routes and is used as a tool to identify problematic routes in order to make a decision on their viability. Problem routes generally have corrective measures applied to them ranging from marketing, to realignment, and frequency changes.

Adopting service guidelines specific to the Electrowave is essential for analyzing efficiency in current routes to allow for future expansion of the Electrowave system.

4. Capital & Operating Costs/ Needs

The service development plan expressed has been evaluated based on the proposed capital and operating costs and ridership in relation to current MDT and Electrowave service.

4.1 OPERATING NEEDS

Operating needs refer to costs associated with running or operating the Electrowave.

This includes temporary labor, the operations contract, the maintenance contract, potential union issues, uniforms, electricity/batteries, telephone, project administration, marketing, communications, additional equipment, insurance, etc.

Full implementation of this plan will show total annual operating costs at approximately $4.4M. The operating needs will be associated with the requirements to operate 19 buses on three new routes and two routes with additional service. Operating needs have been calculated based on the proposed routes at the current cost of $40.70 per revenue hour . These costs are based on labor specifically with Red Top operators and Fleet Maintenance, which maintains the buses. Additional costs are associated with electricity and batteries for the vehicles, general utility costs, costs of uniforms, communications, marketing, additional equipment, and insurance. Table 3 describes the costs associated with operating the Electrowave shuttles including miles traveled, running times, revenue hours, and vehicles required as reported in March of 2001.

TABLE 2

Actual Operating Costs / % of Total

Cost Category	FY '96-'97	% of FY '96-'97	FY '97-'98	% of FY '97-'98	FY '99-'00	% of FY '99'-00	FY '00-'01	% of FY '00-'01
Temp. Labor		0%	$ 1,351	0%	$ -	0%	$ -	0%
Red Top Contract		0%	$ 524,184	48%	$ 756,000	57%	$ 990,955	53%
Fleet Maintenance		0%	$ 232,275	21%	$ 320,000	24%	$ 542,416	29%
Uniforms for Drivers		0%	$ 3,880	0%	$ 3,500	0%	$ 8,000	0%
Misc. Operating	$ 75,000	100%	$ 37,180	3%	$ 15,966	1%	$ 65,000	3%
Electricity/Batteries		0%	$ 15,092	1%	$ 20,295	2%	$ 45,000	2%
Telephone		0%	$ 79	0%	$ 200	0%	$ 500	0%
Project Administration		0%	$ 95,714	9%	$ 95,700	7%	$ 99,250	5%
Info services (Mktg.)		0%	$ 116,457	11%	$ 28,249	2%	$ 36,000	2%
Communications		0%	$ 1,259	0%	$ -	0%	$ -	0%
Additional Equipment		0%	$ -	0%	$ 26,875	2%	$ -	0%
Shuttle Insurance		0%	$ 63,000	6%	$ 63,000	5%	$ 87,000	5%
Contigency		0%	$ -	0%	$ -	0%	$ -	0%
TOTALS	$ 75,000	100%	$1,090,471	100%	$ 1,329,785	100%	$ 1,874,121	100%

Source: City of Miami Beach

TABLE 3

Projected Annual Operating Costs[1] (in 2001$)

Phase/Cost	Year (after plan adoption) 1	2	3	4	5	6	7
Enhabced Existing Service							
Collins	$ 825,426	$ 825,426	$ 825,426	$ 825,426	$ 825,426	$ 825,426	$ 825,426
Washington	$ 1,650,851	$ 1,650,851	$ 1,650,851	$ 1,650,851	$ 1,650,851	$ 1,650,851	$ 1,650,851
Short-range							
Alton Route	$ 550,284	$ 550,284	$ 550,284	$ 550,284	$ 550,284	$ 550,284	$ 550,284
Mid-range							
Middle Beach Route		$ 825,426	$ 825,426	$ 825,426	$ 825,426	$ 825,426	$ 825,426
Long-range							
North Beach Route					$ 550,284	$ 550,284	$ 550,284
TOTAL	$ 3,026,561	$ 3,851,987	$ 3,851,987	$ 3,851,987	$ 4,402,270	$ 4,402,270	$ 4,402,270

[1]Operating Costs include: Temporary labor, Service Contracts, Maintenance Contracts, Uniforms, Electricity/Batteries, Telephone, Administration, Marketing, Communications, Additional Equipment, Insurance, Etc.

This table assumes that the percentages of actual operating costs will remain constant with the service expansion.

Figures are derived from the current cost/hr multiplied by the additional reveune hours for each recommended phase.

The MBTMA is proposing to issue a contract for the maintenance of the Electrowave system. The operating expenditures for maintenance in 2000 was about $435,434. In addition, MBTMA estimates that about $75,000 over the course of a year is being lost because of maintenance problems with buses and the inability to keep buses in service. The benefits of privatizing maintenance go beyond cost. The most important element of any transit system is to be reliable. Reliability, more than any single factor, builds ridership. The initial contract for maintenance is anticipated (May 2001) to be about $650,000, which is more than the current outlay plus lost revenues. With the system expansion plans, it is believed that as ridership builds the cost differences will be minimized and in fact become savings in the future.

Essentially the Electrowave plans to operate 8 additional buses and 60,840 additional hours annually with proposed improvements to existing routes and new routes. With this expansion, the cost to operate the Electrowave would exceed $4.4M annually. This is primarily funded by the City which has a dedicated funding source.

The Electrowave currently compares favorably with MDT service. At this time the Electrowave operates on its Washington Avenue route at $40.70 per hour and $6.49 per mile. The Collins Avenue route is currently operating $40.70 per hour and $6.78 per mile. On its Miami Beach routes MDT operates at 53.41 per hour.

Future projections are similar. In the short-range the entire Electrowave system is projected to operate at $40.70 per hour and $6.50 per mile. The mid-range scenario projects the system to operate at $40.70 per hour and $6.30 per mile. The long-range scenario project operations at $40.70 per hour and 6.21 per mile. Table 4 illustrates anticipated operating costs with the proposed expansion routes.

4.2 CAPITAL NEEDS

Capital needs are cost associated with purchasing 8 vehicles and storage maintenance facilities.

Capital funds are used to purchase the necessary items to run the Electrowave system. Capital needs can vary from year to year depending on items purchased.

Capital needs assume creating three new Electrowave routes over a period of 7 years. Table 5 indicates the total cost associated with these new routes. These include purchasing additional vehicles to improve headways, additional vehicles to provide a 20% spare ratio, batteries for each vehicle, a bus maintenance and storage facility, and an intermodal facility. The table illustrates the anticipated annual costs over a seven year period. It is projected that total additional capital needs will be approximately $10.4M.

Capital costs are mostly funded by the FTA and other grant funds matched with either FDOT soft match using toll reserve credits or City soft match using cost of City land.

TABLE 4
Additional Capital Needs

Item	Quantity	Cost
Additional vehicles needed for new routes and improved headways[1]	5	$ 1,267,630
Additional spare vehicles needed[2]	3	$ 760,578
Bus Maintenance and Storage Facility	1	$ 4,800,000
Intermodal Facility	1	$ 3,600,000
Total	--	$ 10,428,208

[1] The 16 vehicles needed for the proposed service additions and improvements less the existing 11 vehicles.

[2] Spare vehicles to accommodate a 20% spare ratio. Most systems operating traditional transit buses have a spare ratio of 15 to 20%. It is assumed with a new technology vehicles additional spare vehicles may be needed.

5. Summary of Funding Options

The following Tables 6, 7 and 8 summarize proposed funding sources and breakdown of potential funding sources for operating expenses compared to capital expenses. It is important to note that the largest funding source is and should continue to be the City of Miami Beach. It must also be noted that transit systems are not self sufficient. Many funding sources are geared towards establishing systems. Communities play larger roles in funding as time passes.

5.1 OPERATING FUNDING

Of utmost importance is developing a funding plan to operate and maintain the Electrowave. This is done by the City on an annual basis. It is important to note that systems do not become self-sufficient. There is always a need to subsidize the service. The percentage of the subsidizing varies between systems. Generally, smaller systems can expect farebox recovery (ridership revenue) to be about 20%. Larger systems can expect farebox recovery to between 30% and 40%. This is a measurement to be incorporated in future performance standards.

Subsidies are coming from a variety of sources. Currently, these include Congestion Mitigation Air Quality funds (CMAQ), FDOT, farebox revenues, City of Miami Beach Parking Enterprise Retained Earnings and City Transportation Mitigation funds. CMAQ sources are ending in the 2002-03 fiscal year because Miami-Dade County has met Air Quality performance standards. The $300,000 being lost will be replaced with Section 5307 (formerly Section 9) funds. The City is going to be a Governor's Apportionment recipient instead of a Designated recipient, of which there may be only one per County. This means $300,000 goes to the Electrowave to replace the loss of CMAQ in the 2003-04 fiscal year. Table 9 details the available operating funds sources and Table 10 details the available capital funds sources.

FDOT will provide two contributions to the Electrowave. These will be $150,000 for the Collins Route and $340,000 in Service Development funds.

Farebox revenues are expected to be $150,000 in 2001-02. This is lower than previous years due in part to the Golden Passport riders as explained later in this report. Onboard Advertising accounts for $20,000 each year. The remainder of the funds to operate the system needs to come from the City. These sources are Miami Beach Parking Enterprise Retained Earnings and City Transportation Mitigation funds. Total projected funding for FY 2001-02, prior to utilization of parking funds, is projected to be $960,000. For FY 2000-02, parking funds totaling $1,050,000 were utilized.

TABLE 5
Preliminary Electrowave Operating Budget for FY 2000-2001

Operating Categories	FY 2000-01 Budget (11 vehicles)	Preliminary Projection of FY 2000-01 Costs	Preliminary Projection of FY 2001-02 Costs (12 vehicles)
343 Red Top Contract	$990,955	$950,000	$1,026,485
Sev. Fleet Management Charges	542,416	430,000	0
ETVI Contract	0	0	701,333
345 Proj. Admin. Contract (MBTMA)	99,250	99,250	144,250
371 Insurance on Shuttle Vehicles	87,000	87,000	94,909
312 Miscellaneous Operating Costs	65,000	54,000	50,000
362 Information Services (Marketing)	36,000	30,000	30,000
314 Electricity to Charge Batteries	45,000	30,000	35,000
315 Propane for Bus AC System	0	0	30,000
504 Communication (shuttle radios)	30,000	0	12,000
674 Machinery/Equipment	21,872	3,372	0
154 Uniform for Shuttle Drivers	8,000	6,500	6,000
316 Telephone	500	195	500
513 Fleet Accidents	0	1,416	0
Total	**$1,925,993**	**$1,691,733**	**$2,130,477**

TABLE 6
Funding Sources - FY 2000-2001

Source	Amount	Percent
M.Beach Parking Enterpr. Retained Earnings	$1,050,000	54.5
CMAQ	300,000	15.6
FDOT	139,993	7.3
Trans. Mitigation Funds City of Miami Beach	50,000	2.6
Farebox	250,000	13.0
Advertising Revenues	20,000	1.0
Carry-Over Funds fr. Previous Yr (FDOT $42,351 City $73,648)	116,000	6.0
Total	**$1,925,993**	**100.0**

What will it cost to operate the Electrowave in 2001-02 regardless of the long range plan? It is projected to cost $2,130,477. This is an increase from the cost for the current year of $204,484. It must be noted that the projected expenditures for the current year are $1,691,733. Using this number, the projected budget increase would be $438,744. The increase is due to several factors including:

1. 5% increase for union wages on the Red Top Operating Contract
2. The addition of operating cost for one additional vehicle (including insurance)
3. Approximately $701,000 for a private maintenance contract (increase of $159,000)
4. An increase of approximately $45,000 for MBTMA for management staff additions
5. An increase of $12,000 for shuttle radios

Funding sources prior to the utilization of parking funds equals $960,000. The projected budget is $2,130,477. This leaves $1,170,477 to be funded by the City, utilizing parking funds. This is an increase from the current fiscal year of $120,477. This is a 10% increase in parking funds for a 9.5% increase in budget.

5.2 CAPITAL FUNDING

Parking is a legitimate funding source for the Electrowave. The two systems are linked, primarily because the Electrowave acts as a circulator that assists in park-and-ride operations. The Electrowave allows for vehicles to enter the City and park for extended periods. Many times movement around South Beach can be made on the Electrowave, reducing the number of vehicle trips taken in the area, thereby reducing traffic and congestion.

This is one tool that the City can use to reduce congestion. It should be used in combination with the development of new parking facilities. Electrowave service should focus on providing this service in coordination with the Parking Department. In addition, the Electrowave provides extra capacity to the roadway network through the Transportation Concurrency Management Areas (TCMAs) which allow further development, more vehicles and increased parking revenues.

TABLE 7
Preliminary Sources of Funding for Electrowave

FUNDING SOURCES	FY 2001-02 Preliminary	FY 2000-01
Miami Beach Parking Enterpr. Retained Earnings	?	$1,050,000
Congestion Mitigation Air Quality (CMAQ) For purposes of the Collins Avenue Route only Retroactive approval by M-D County on 5/01 **80% CMAQ 20% City** *Potential CMAQ carry-over funds into 2001-02: Approx. $300,000 reimbrsmnt request to be prepared in July & Oct.	$300,000	300,000 0
FDOT for Washington Rte, expired 01/20/01 Service Develp. Funds (39% of total expends)	0	139,993
FDOT Carry-Over funds - Washington Route SDF funds at 39% of total expenditures **Funds expired 01/20/01**	0	116,000
FDOT New Contribution - Collins Route Only		150,000
Retroactive funds available for reimb. 07/01/01 Rate of reimbursement: 50% FDOT, 50% City * Potential FDOT carry-over funds/Collins Route	150,000	
Applic. to FDOT for Service Devlp. Fnds Potential new JPA/improvs. to Washington Route	340,000	
Projected Fare Collection Revenues Less revenues from Golden Pass & OS vehides	150,000	250,000
Projected On-Board Advertising Revenue	20,000	20,000
Total	**$960,000**	**$2,025,993**

TABLE 8
Available Operating Funding Sources

	Operating Funding	Match Requirement	Current Funding Source
FDOT Funds			
Florida Transit Block Grant Program	x	None	x
Public Transit Service Development Program	x	50%	
Transit Corridor Program	x	None	
Federal Transportation Funding Programs			
Congestion Mitigation and Air Quality Program	x	20%	x
Other Federal Funding Programs that Support Transportation Projects			
Transportation, Community & System Preservation Pilot Program	x		
Community Development Block Grant	x		
Local Sources of Funding			
Local General Revenues	x		x
Local Option Gas Tax	x		
Other County Funds	x		
Special Taxing District Funding	x		
Revenues from Parking Authorities	x		x
Impact Fees of Mitigation Fees in Lieu of Impact Fees	x		x
Revenues from the Circulator Service	x		
Assistance from Other Partners	x		
Private Contributions	x		

TABLE 9
Available Capital Funding Sources

	Capital Funding	Match Requirement	Current Funding Source
FDOT Funds			
Florida Transit Block Grant Program	x	None	x
Transportation Outreach Program	x	Yes	
Public Transit Service Development Program	x	50%	
Transit Corridor Program	x	None	
County Incentive Grant Program	x	None	
Urban Transit Capital Program	x		
Federal Transportation Funding Programs			
Surface Transportation Program	x	Yes	
Congestion Mitigation and Air Quality Program	x	20%	x
Federal Transit Administration Urbanized Area Formula Transit Grants	x		
Federal Transit Administration Major Capital Grant	x		
Other Federal Funding Programs that Support Transporation Projects			
Transportation and Community and System Preservation Pilot Program	x		
Local Sources of Funding			
Special Taxing District Funding	x		
Impact Fees of Mitigation Fees in Lieu of Impact Fees	x		x
Private Contributions	x		

6. Contracting for Service or Performing the Service In-House

As Miami Beach officials review the strategic options for the future operation of the Electrowave, it is appropriate for City officials to ask if the Electrowave services should be provided by the City's own employees, or if it should be provided through private companies under contract to the City.

Currently, the City contracts for operations services, but performs maintenance services with in-house staff of the Fleet Maintenance Department. There are four issues to consider when determining whether the transit service should be provided by in-house public employees versus an outside contractor.

The first issue to consider is what alternative gives the City maximum control over the service. Some transit officials prefer to have all the resources necessary to operate a service under their direct control. They believe this will place the accountability for success of the service more squarely on the shoulders of the public manager and minimize the possibility of any "finger pointing" if something should go wrong. It should be noted, however, that Miami Beach has generally been satisfied with the performance of the private operations contractor to date. They have approached this service in a spirit of partnership with the City. In addition, a well-written contract with good specifications that clearly spell out the requirements and expectations of the contractor's employees (coupled with liquidated damages for non-performance) should provide the City with sufficient assurances of control over the service.

It should also be noted, that the maintenance services for the Electrowave are currently provided through the City's Fleet Maintenance Department, a department that is not under control of the same city staff that is responsible for administering the contract with Coach USA. Consequently, the responsibility for the Electrowave is already spread over more than one set of managers, meaning that there is no single point of accountability within the city for the reliability of Electrowave maintenance services. Hence, the concept of achieving "maximum control" over the service will not be achieved if the Fleet Maintenance Department maintains responsibility for the maintenance of Electrowave buses.

A second issue to consider is whether the City has the expertise necessary to provide the service in-house. Maintaining and operating electric and hybrid-electric vehicles requires special expertise and training not commonly found in the public or private sector. One approach Miami Beach might take is to develop a specialized maintenance workforce that is highly trained and dedicated by the City to working only on these electric vehicles. However, as often happens to a transit service provided by a city or county, there is a danger that the transit vehicles become only one of many fleets that compete for attention from a centralized maintenance service department with multiple priorities such as maintaining police vehicles, ambulances, fire trucks, etc. Maintaining transit vehicles might not be regarded as a high priority when compared to other portions of the city's fleet. From the transit agency's point of view, this is simply unacceptable.

Transit managers across the country have come to learn that they must emphasize customer service if they are to gain public acceptance and maximize ridership and revenue. The first requirement of customer service in transit is to ensure the reliability of the service; every transit system's first obligation is to "protect the service" by making sure the buses are going to be on the road at the time they are advertised to be there. This can't be done without a maintenance workforce that is dedicated exclusively to the transit vehicles. Without a sound bus maintenance program, nothing else about the transit service matters. A transit system might have the prettiest buses, most accommodating bus operators, and flashiest marketing program in the world, but if the buses aren't on the road due to mechanical failures, then all of the rest of the transit system's efforts are absolutely worthless.

Although it takes place out of view of the public, the maintenance function is the foundation and backbone of a transit service. It appears that the up and down nature of ridership on the Electrowave over the past year has been due to an inability to keep the electric buses in service, resulting in unreliable service and wild swings in ridership levels.

Fortunately for Miami Beach, there is expertise in

the maintenance of electric vehicles that would be available through a contract with a private, non-profit organization (The Electric Transit Vehicle Institute) that could provide dedicated and specially trained technicians to maintain Electrowave's fleet of mini-buses. The administration of this contract should be performed by the same city staff that is responsible for administering the contract for operations services. This would put all the accountability for the success of the service under one set of managers.

A third issue for Miami Beach to consider is the high visibility of the service and how its performance will reflect on the image of the City. Some people might argue that Miami Beach might want to maximize their control over the employees due to the close association between the performance of the service and the image of the City. However, it is doubtful that the public even realizes that the Electrowave buses are currently operated by private employees. All the riding public knows is that they are riding Miami Beach's buses. As noted earlier, the City has been satisfied with the performance provided by the private operations contractor. The City can help assure itself of a continued high level of satisfaction by maintaining frequent communication with the private contractor. The City project managers should not merely rely on the cold language of a contract to ensure service quality. It is important that the City project managers maintain a highly personalized relationship with the private contractor to help ensure that the contractor feels that they are a full partner in the service.

A fourth issue to consider is cost. Will it be more expensive to provide the service in-house or by private contract? The experience around the country is that privately contracted service is generally less expensive than public transit services, particularly when dealing with conventional transit technologies. It would almost certainly be less expensive to contract for bus *operations* services than it would be to provide such services with City staff. Because of the specialized nature of providing maintenance for the electric and hybrid vehicles, contracting with a qualified provider will likely be more expensive than the current maintenance cost. However, cost is only one element of consideration. As noted earlier, reliability of service is the most important factor. If the City cannot assure a maintenance staff dedicated solely to the Electrowave, then service will continue to be unreliable and unacceptable; ridership and revenue will not be at the levels they could be. A private contract for maintenance services will assure the City of the appropriate level of expertise provided by a workforce that will not be diverted to other municipal fleet needs. As ridership increases and lost revenue (from lost ridership due to maintenance problems) is regained, it is expected that contracting the maintenance with a qualified provider will be more cost effective than attempts to do this in-house.

FIGURE 3

7. Existing Service

7.1 ELECTROWAVE PROFILE

The Electrowave was one of very few electric shuttle services operating in the United States when it was developed in 1997 by the City of Miami Beach in partnership with the Miami Beach Transportation Management Association (MBTMA).

This zero emission, electrically powered system was developed, in its initial phase, to provide shuttle service to Miami Beach south of Dade Boulevard including South Beach, the Convention Center Historic District, and the South Pointe District. This first phase was designed to operate seven vehicles. In the Electrowave's second phase, four additional vehicles were planned and service improved to extend to Collins Avenue. Phase 3 considers the long term measures needed to integrate shuttle operation with other funded and programmed City projects which impact infrastructure, land uses, urban design and traffic operations.

From the outset, the mission of the Electrowave was to provide transit services specifically tailored to South Beach. The Electrowave would interconnect existing and planned parking facilities, supporting an interceptor park and ride program and maximizing the utilization of the City's parking capacity investments. In addition the service was to attract new segments of the population to public transit, attract tourist ridership, and establish a base for a potential Miami Beach Alignment of the East-West Multimodal Corridor.

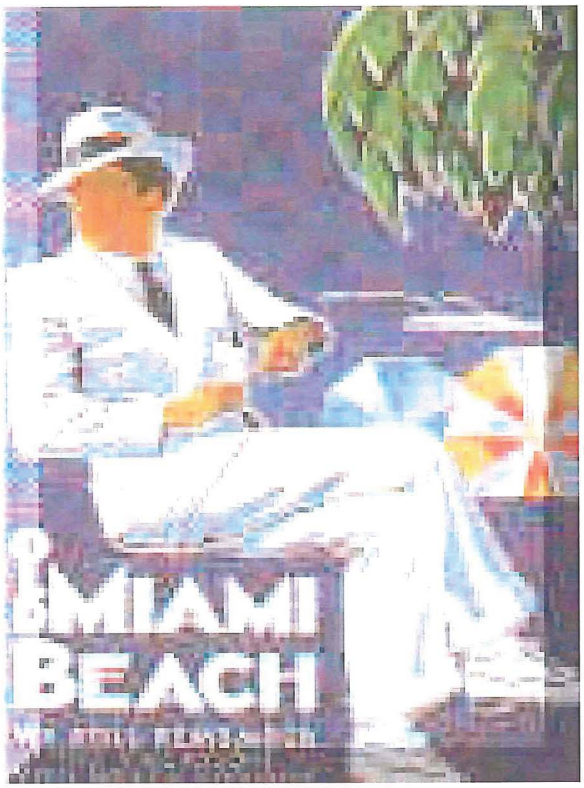
Phase 1 of the Electrowave operations has been extremely successful in terms of ridership levels. Miami Beach is one of Miami-Dade County's few truly urban environments with high population densities, building densities, and narrow streets. This area is the most likely to be amenable to transit usage now and in the future with Electrowave service or other Transit Service. The challenge for the Electrowave is to serve Miami Beach residents and anticipate residents' needs as the City changes and grows. The Electrowave is a large part of the City's transportation and mobility vision, which helps deal with a strained and increasingly congested transportation system. The Electrowave will have long term benefits to Miami Beach by helping move the community to one that more readily accepts transit, well before the remainder of the region. Transit on Miami Beach is a quality of life issue as it provides the residents and visitors with alternatives to the private automobile. This is becoming more important each year as congestion increases.

7.2 EXISTING ROUTING

Currently the Electrowave operates two routes, the* Washington Avenue Route, *and the* Collins Avenue Route. *The following describes the operational characteristics of each route as illustrated in Figure 3.

Washington Avenue Route

The Washington Avenue Route is 5.8 miles in length roundtrip. It generally takes an Electrowave bus 45 minutes to complete the route. With five buses running the route the frequency between stops, (headway) is 15 – 18 minutes. On this route there are about 34,000 revenue hours and 212,000 annual revenue miles. These are the hours and the miles that the buses are in revenue service carrying passengers. This excludes time going to and from the mainte-



nance and storage yards, or any other time that the bus is out of service. The Washington Avenue route is provided at an annual operating cost of $1.4M, its ridership is approximately 760,000 passengers per year. The route carries 3.6 passengers per mile, and 22.5 passengers per hour. It cost $40.70 per hour to operate the system. It cost $6.49 per mile to operate the system. Estimated weekday revenue hours are 24,000, with 5 vehicles operating 18 hours per day Monday – Wednesday and 20 hours per day Thursday and Friday. Saturday revenue hours are 5,000, with five vehicles operating 20 hours per day. Sunday revenue hours are 4,000, with five vehicles operating at 16 hours per day.

Collins Avenue Route

The Collins Avenue Route is 3.0 miles in length roundtrip. It generally takes an Electrowave bus 20 minutes to complete the route. With two buses running the route the frequency between stops, (headway) is 15 – 18 minutes. On this route there are about 14,000 revenue hours and 81,000 annual revenue miles. The Collins Avenue route is provided at an annual operating cost of $550,000. Its ridership is approximately 14,000 passengers per year. The Collins route has been running since December 2000, therefore the passenger data is relatively low. Ridership should increase with time. The route operates at 0.2 passengers per mile, and 1 passenger per hour. It cost $40.70 per hour to operate the system. It cost $6.78 per mile to operate the system. Estimated weekday revenue hours are 10,000, with 2 vehicles operating 18 hours per day Monday – Wednesday and 20 hours per day Thursday and Friday. Saturday revenue hours are 2,000, with two vehicles operating 20 hours per day. Sunday revenue hours are 4,100 with five vehicles operating at 16 hours per day.

Of the 11 vehicles operated by the Electrowave, seven are in operation at any given time servicing a two-way circulator route, seven days per week. The hours of operation are:

- Monday – Wednesday between 8:00am and 2:00am;
- Thursday - Saturday between 8:00am and 4:00 am;
- Sundays and Holidays between 10:00am and 2:00 am.

Costs for this service is $.25 per ride. The shuttle operates on two routes with 15 to 18 minute scheduled headways. The first route begins at 5th street and Lenox Avenue, travels south along South Pointe Drive, north on Ocean Drive, west on 1st Street, north on Collins Avenue, west on 2nd Street, north along Washington Avenue, west on 17th Street, south on Michigan Avenue, west on 16th Street, north on Alton road to 17th Street and returning to 5th and Lenox. There are 30 stops along this route.

The second alignment follows Collins Avenue, heads west on 23rd Street South on James Avenue, South on Washington Avenue, west on 17th Street, north on Convention Center Drive, west on 19th Street, south on Meridian Avenue, east on 16th Street back to Collins Avenue. The minibuses used by the Electrowave are state of the art battery powered electric vehicles produced by Advanced Vehicle Systems, Inc. These vehicles are 22' in length, 8.25' high and 7.6' wide. They offer a turning radius at a curb of 27' and have a ground clearance of 8 inches. They weigh 25,500 lbs. Each bus has seating for 22 riders. These vehicles are regarded as "low floor" minibuses that make access to and egress from the vehicles easier and faster for passengers.

7.3 RIDERSHIP

Passenger surveys prepared for the City of Miami Beach in 2001 and the MBTMA in January 1999 indicate that the Electrowave has been an effective tool in mitigating parking problems and congestion by reducing the potential number of vehicles on the streets of Miami Beach.

The Electrowave has a ridership base that uses the shuttle regularly. Many of the Electrowave riders are non-typical transit riders. They include people mostly 22 years of age and older, those interested in shopping and entertainment, Beach employees, and typical transit users.

Service for the Electrowave began in February of 1998 with ridership of about 90,000 in the first month as illustrated in Figure 4. Ridership reached 159,000 in August of 1998, and was sustained at an average of 132,000 passengers per month until June of 1999, when it began dropping to about 59,000 passengers per month. This decrease occurred with the $.25 fare increase. Passengers then leveled off and began to slow and then steadily increased, climbing to nearly 76,000 passengers per month by August of 2000. Between June of 1999 and August 2000 the average passengers per month was just over 64,000, a 50% decrease from the pre-fare levels. The 1st quarter of 2001 ridership dipped below 50,000 per month. This drop can be directly attributed to maintenance problems.

In total, there have approximately 3,000,000 passenger boardings since the circulator's inception. The recent passenger surveys indicated that the majority of riders were repeat customers living on Miami Beach with other ridership including tourists, local visitors from South Florida, shoppers, employees, students, and those interested in nightlife and entertainment. Riders expressed an interest in increased frequency of service as well as expanded routes on Alton Road/West Avenue and 41st Street. The expanded service action plan was developed because of the riders' interest in route expansion and increased frequency.

7.4 EXISTING MDT AND PRIVATE SERVICE

The following is a description of the existing and potential MDT and other private transit service in a variety of modes that exist on Miami Beach. Each of these services has the potential to interface with the Electrowave.

Existing Transit Lines

Miami Dade Transit Agency operates an extensive network of bus lines on Miami Beach. Figure 5 illustrates the MDT routes in Miami Beach. The Electrowave has multiple opportunities to interface with MDT service. The greatest opportunities exist in South Beach along 5th Street, Washington Avenue and 17th Street, where MDT routes parallel Electrowave Service.

FIGURE 4

FIGURE 5
MDT Bus Routes

Bicycle/Pedestrian/Greenway Connections

Miami Beach's Atlantic Corridor Greenway Network is proposed to be extensive and ever expanding. Miami Beach is extremely pedestrian oriented and transit friendly, in terms of the citizens, attitude and urban design. Interface between the Electrowave and pedestrian and greenway areas presents many opportunities and would provide a tremendous service to people. MDT service parallels the proposed beach corridor to which it is connected via transit stops at park areas and other disjointed locations along the corridor.

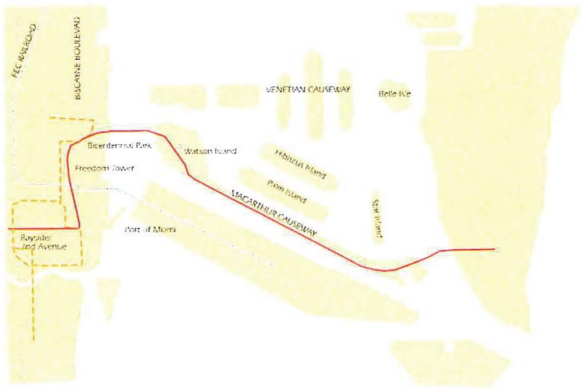


FIGURE 6
Conceptual Diagram

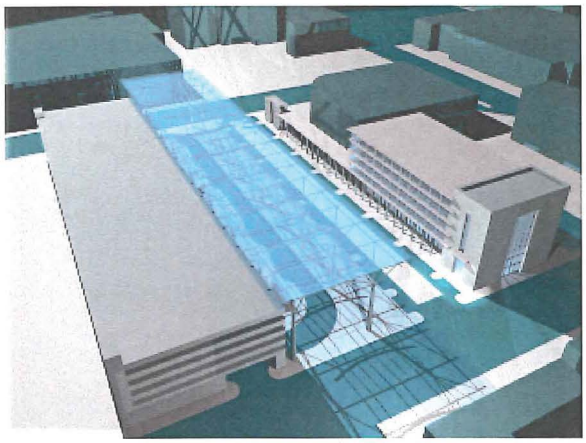


FIGURE 7
Conceptual Diagram

7.5 RELATED STUDIES

Several studies have been conducted and are planned that relate to the Electrowave. They are important to mention in this study because they may impact or influence the Electrowave in the future.

Future Light Rail Transit (LRT) Connections

There have been a number of studies suggesting Light Rail Transit (LRT) service to Miami Beach. Currently the MPO is "fast tracking" a Miami Beach – Miami Light Rail Corridor Study. This study is designed to determine the most appropriate mode of connection between the two cities along the MacArthur Causeway. Figure 6 shows the proposed LRT routes. Interface between potential light rail and the Electrowave presents several opportunities.

Intermodal Feasibility Study

In the Intermodal Feasibility Study the City was looking to develop a permanent home and intermodal facility, to create economic development opportunities, provide incentive to ride transit and create an ease of transfer between various modes, as well as develop a facility that is fitting as a design centerpiece in one of the worlds most popular resorts. Figure 7 illustrates a conceptual image of the Intermodal Center.

The study demonstrated that the Intermodal Facility is most feasible at the Convention Center or the 17th and Washington Site lot because both are centrally located, of adequate size, and accommodates intermodal transfer from self contained parking, existing MDT and Electrowave transit routes, and potential future rail transit. It also has adequate connections with Middle Beach. It services the Convention Center area, city center offices and entertainment functions of Lincoln Road and Washington Avenue as well as a large portion of the area hotel rooms. The land acquisition would be minimal due to the fact that the City currently owns the land. Residential impacts would be minimal.

The current Public Works facility located at Dade Boulevard and Pine Tree Road would be best suited for the maintenance facility. It services similar function at the current time, it is large enough, and it is within the closest proximity to the Convention Center lot. It is already owned by the city and will cause no disruption to the surrounding area.

8. Union Issues

The City should competitively bid the operations and maintenance functions of the Electrowave to leave the responsibilities of the unionized labor force to a private firm.

The authors of this report have experience managing transit agencies, and communicate with many national agencies. Several of these agencies were informally surveyed to ask their opinion of whether or not a small city should contract for transit service or perform the service with its own personnel. Most transit professionals would strongly encourage the city to contract for such services. The practice of contracting for transit services is increasing gradually around the country. The performance of the private companies has been generally as good as that provided by public transit employees, and there has been a clear savings in cost to the public entities responsible for providing the service. In places such as Denver and San Diego, the savings realized through contracting for transit services has been a major factor in allowing these areas to increase the amount of transit service provided to the public. In San Diego, the costs associated with privately contracted transit service is approximately $45 per hour compared to over $65 an hour for the publicly provided service offered through San Diego Transit. A major contributor to this difference in cost is the work rules that govern public transit unions. These rules are often based on agreements reached in the 1950s that have never been changed during the negotiation processes when labor agreements are renewed. It is possible that the City could avoid entering a labor agreement with a transit union that would include such inefficient work rules. However, the City has no expertise in negotiating transit contracts, while the union could well have the assistance of international business representatives who could make negotiations difficult. All of this presumes that a union would be formed if the Electrowave service is brought in-house.

If the service were to be performed by city staff (whether they are represented by a union or not), Miami Beach would very likely see an increase in their costs associated with the Electrowave both in the short term and long term. Public employees are generally paid a bit better than private employees in entry level positions, enjoy better and more costly fringe benefits, and become eligible for retirement benefits that the City would be responsible for well into the future.

In addition to paying more for bus operators and mechanics, the City would also be responsible for all elements of transit operations including scheduling, dispatch, run cutting, training, safety, and any other specialty functions associated with operating a transit system. The city has no expertise in these areas, and might find it difficult to attract and retain professional staff to such a small system that would offer almost no upward mobility opportunities.

In addition to those direct costs, the city would also be responsible for managing and supervising these employees. This becomes an unusually large responsibility in a transit operation, and would become all-the-more so if the workforce decided to join or create a union. Miami Beach would then need to be prepared to spend a disproportionate amount of their time in handling grievances and hearings, arbitrations, and negotiations. They don't have to deal with any of these frustrating responsibilities now because the private contractor is responsible for the supervision of all their own employees.

The types of responsibilities associated with dealing with a union workforce not only add expense, but take service managers' time from other important responsibilities as well. The City needs to ask itself if it wants to take on the burdens of working with a unionized work force, or would it rather leave such responsibilities to a private firm with expertise in those areas, thereby allowing the City staff to concentrate on service policy, planning, coordination, grant applications, marketing, and community relations.

In conclusion, it is recommended that the City perform both the operations and maintenance functions through competitively bid contracts. Competition has proven to be a way of keeping transit costs under control throughout the nation. The savings the City realizes might be applied to additional new transit service. The City will gain the major advantages of having a contracted workforce dedicated to providing only Electrowave services. Private contractors can also provide the advantage of "pooled knowledge" and experience that they can tap into from their colleagues that provide similar services throughout the nation. A private contractor might also be able to contribute some form of capital in-

vestment that is currently beyond what the City could afford.

Utilizing private contractors to perform all of the Electrowave service will require the City to commit to active contract management. This begins with a contract that contains clear performance standards, with liquidated damages for failure to meet the standards, and possibly bonuses for exceeding certain standards such as on-time performance and miles between road calls. No contracted services should ever be fully trusted to run themselves. Oversight is always appropriate. Again, it should be conducted in the spirit of partnership. The City's contract managers should schedule regular meetings with the contractors and maintain a personalized relationship with them.

9. MDT Considerations

Miami Beach should consider an interlocal agreement with MDT to run the W route.

Miami-Dade Transit (MDT) provides a considerable amount of transit service in Miami Beach, possibly more than in any other area of the county. Miami Beach is interested in the possibility of providing its own customized local transit service for tourists, visitors, and local residents that is more in keeping with the pedestrian-oriented nature of the city and supplementing the abundant service provided by MDT. Of particular interest to Miami Beach is the service provided by MDT on Route W.

Route W serves strictly as a circulator within the South Beach area, operating in a loop as depicted in Figure 2. MDT utilizes two 40-foot buses to operate this route with service frequency of every 24 minutes. An examination of ridership volume for Route W indicates that it is not necessary to use 40-foot transit buses on the route. A minibus would provide sufficient capacity to satisfy the level of passenger demand, providing comfortable seating for every passenger on virtually every trip.

Route W is the type of transit route that should be provided with minibuses rather than full size buses. In addition, it is providing service only in South Beach. Consequently, it makes sense for the city to review this route as one that might be provided by Electrowave services rather than by MDT. From the City's perspective, the ideal solution would be for MDT to discontinue providing service on Route W with its own personnel and equipment, and provide the savings it realizes to the City which would be more than sufficient for the city to operate the service. The city's cost to operate the service is approximately $41 per hour, while the county's cost to operate the current service is approximately $65 per hour. This would appear to be a good solution from the overall perspective of the taxpaying public. It would also take large buses off of local streets where they are not wanted or needed. It could benefit MDT as well if it paid Miami Beach only the amount the City needed to operate the route at the same level of service. There would still be hundreds of thousands of dollars in savings that the County could apply to other routes in the MDT system. However, according to County officials, there might be a legal issue with the County providing its general revenues to a city for a service that would be provided exclusively within a single city.

Arrangements like this have been made in Broward County, where the County's transit agency encourages municipalities to establish their own local circulator services. Broward County Transit is only too happy to find opportunities to partner with cities to provide additional transit services for the citizens of the county. This is particularly true when there is an opportunity for the county to discontinue providing transit service on local roads with large buses. Broward County has entered into interlocal agreements with over a dozen cities. These interlocal agreements call for Broward County to provide cities with minibuses and operating stipends of $20 for every hour of service that the city provides. The city is then responsible for operating the service, and for making sure that it connects with the County's regional transit system. Broward County is particularly interested in supporting the local transit services that allow the County to discontinue operating their large buses on local streets within a city. The County can then redeploy their resources to other areas of the County that are underserved. In essence, this represents a cheaper way for the County to expand transit service in the region. It also results in providing the appropriate level of supply (large buses versus small buses) to the various levels of demand (local circulator services versus regional trunk routes) for transit service.

Miami-Dade County could accomplish the same objectives if it were to reach an interlocal agreement with Miami Beach, allowing the City to take over responsibility for operating Route W. A review of the labor agreement between Miami-Dade County and the Transport Workers Union Local 291 indicates that the County might have the legal authority to, in essence, contract with the City of Miami Beach to provide the service on Route W. Article III.20 (Management Rights and Scope of the Agreement) includes the following language:

1. "The union recognizes that the County and MDT possess the sole right to operate and manage MDT and direct the work force, and the rights, powers, authority and discretion, which the County and MDT deem necessary to carry out their responsibilities and missions, shall be limited only by the specific and express terms of this Agreement.

2. "These rights and powers include, but are not limited to the authority to:

a) Determine the mission and objectives of MDT.

b) Determine the methods, means, and number of personnel needed to carry out MDT responsibilities.

c) Take such actions as may be necessary to carry out services during emergencies declared by MDT or the County Manager.

d) Direct the work of the employees, determine the amount of work needed, and in accordance with such determination relieve employees from duty or reduce hours of work. In addition, relieve employees from duty or reduce their hours of work for lack of work or funds or other legitimate reasons in accordance with County Rules and Regulations."

These previous sections of the labor agreement provide MDT with broad "management's rights" to determine the number of personnel required to carry out the responsibilities of the agency. Language from Article I.10 (Outside Contracts) of the Labor Agreement provides further opportunities for the County to contract for transit services, but also provides opportunity for the union to present its own proposal for providing the service:

"The County shall have the right to contract for outside work or services which in its sole judgment cannot be accomplished economically or effectively with its regular work force.

"Except in emergencies or other situations of immediate need, whenever MDT is considering contracting out work of any kind it shall first discuss the intended contract with the Union in a regular or special Labor Management Committee meeting in which MDT shall discuss its reasons for the intended subcontracting. The Union may, within twenty days or less if possible, propose an alternative plan by which the work may be done economically and efficiently by appropriate members of the Bargaining Unit. If the County agrees, it may accept the union Proposal on a trial basis, the length of which the County shall have the sole discretion to determine. Thereafter, if not satisfied with the results of the trial period, MDT shall have the sole discretion to modify or carry out its original intended contracting out. The intent of this provision is to enable the parties to discuss and attempt to agree upon a substitute plan for subcontracting without altering the County's discretion. The County agrees that the time set for a trial basis of an agreed proposal shall be adhered to except under emergency circumstances."

"Article I.10 provides the opportunity for the TWU Local 291 to propose an alternative plan to provide service that the County is considering contracting out. If the County was to consider contracting with Miami Beach whereby the City would provide service on Route W, the County would need to first discuss this intention with its union and allow the union to submit a plan for the work to be done by bargaining unit employees. The union might propose that work on the Route W be performed by Paratransit Drivers Attendants in MDT's "B Division Task Force". Paratransit Drivers Attendants are minibus operators that are paid on a different scale than operators of large buses, generally making approximately 60 percent of the wages of large bus operators. If MDT were to use Paratransit Drivers Attendants, the cost to the County of providing service on Route W would be significantly reduced, perhaps by as much as one-third. The cost would be approximately $45 per hour, still higher than what Miami Beach is currently paying for Electrowave service under a private contract with Coach USA (approximately $41 per hour), but considerably more competitive. Local 291 could certainly make the argument that the service could be provided "economically or effectively with its regular work force".

It should also be noted that Article X.8 of the Labor Agreement between Miami-Dade County and TWU Local 291 contains language that explicitly states what MDT bus routes will not be contracted out during the term of the agreement, and Route W is not among these routes.

Another factor that Miami-Dade County would need to consider is if such an agreement with Miami Beach would violate the elements of their 13(c) agreement with TWU Local 291. As a precondition or prerequisite to a grant of federal assistance by the Federal Transit Administration (FTA), Section 13(c) of the Federal Transit Act requires that "fair and equitable" protective arrangements must be made by the grantee to protect employees affected by such assistance. Miami-Dade County has entered an agreement with TWU Local 291 to comply with the requirements of the Federal Transit Act. Under the provisions of Section 13(c), the Secretary of Labor is given authority to determine what is fair and equitable, and certifies to the FTA that such protections are in place before grant funds are released.

Section 13(c) is primarily a form of labor protection developed by the United States Congress to help ensure that transit employees' positions will not be worsened as a result of the federal assistance received by the grantee. Section 13(c) is complex federal legislation that on the one hand protects transit employees' bargaining rights, but can also stifle innovation since it provides generous payments (up to six years of full pay) to employees that lose their jobs due to new efficiencies that are realized from federally funded transit projects. An argument might be made that the purchase of electric minibuses with federal transit funds for Miami Beach would trigger a 13(c) issue if it resulted in MDT transit employees losing their jobs or losing pay.

This would be a difficult argument for the union to make. It is virtually certain that no MDT employee would lose his or her job as a result of contracting Route W to the City of Miami Beach. MDT always has vacancies in the bus operator position due to normal attrition. The employees who were operating buses on Route W would simply work on other bus routes. No current employee's position in terms of pay would be worsened. In addition, the federal legislation does not preclude recipients of federal transit grants from contracting out work.

Based on the information provided above taken from the Labor Agreement, it appears that MDT could contract with the City of Miami Beach to allow the City to provide service on Route W. However, what is legally possible, and what is practically and politically possible might be very different things.

Route W is one of the oldest routes in the MDT transit system. It is a relatively "easy" route for bus operators to perform. The passenger loads are relatively light, the schedule is easy enough to keep, and the passengers are very easygoing and non-threatening. Bus routes are selected by bus operators on the basis of operator seniority, and Route W happens to be one of the most popular routes among bus operators with high seniority. It is the type of route bus operators at MDT wish there were more of. Operating a bus in Miami-Dade County can be challenging given the heavy traffic, tight schedules, and problem passengers on some routes. Bus operators often experience high levels of stress and tension, which contributes to abnormally high levels of absenteeism. The authors of this report were present during recent focus groups with MDT bus operators who were asked why they had such abnormally high levels of absenteeism. The operators were quite outspoken in their grievances regarding working conditions while they were in service. Notably, many operators indicated what little control they had over their work environments, and how routes in the MDT system seemed to become less attractive over time. One operator, speaking for many, noted "There's only one good route in this bus system....the one I take when I go home after work."

Bus operators at MDT, particularly those with high seniority, would see losing Route W as another downgrading of their work environment. They would be very opposed to contracting out the route to Miami Beach. While MDT officials have the right in accordance with the Labor Agreement and the Section 13(c) Agreement to contract out certain bus routes, they must also consider how such decisions will affect their ongoing relationship with TWU Local 291. MDT officials meet frequently with officials of TWU Local 291 to discuss a variety of issues. There is a never-ending process of give and take between the union and MDT managers, as there is at any transit agency. Contracting out Route W would be bitterly opposed by officials of Local 291 who are elected to represent the interests of their members. Part of the reason that Local 291 agreed to establish a Paratransit Drivers Attendant position was to mini-

mize and possibly prevent MDT from contracting out for services with the private sector. Consequently, it is not likely that the union would allow Route W to be lost to Miami Beach without gaining some substantial concession in return from MDT. While they would not be enthusiastic to do so, it is possible that the union would offer to do Route W with Paratransit Drivers Attendants using minibuses in order to keep the service within their bargaining unit. A Letter of Understanding between Local 291 and Miami-Dade County dated November 17, 1995 states that

> "Unless otherwise specifically agreed to in writing by the parties, the Paratransit Driver Attendants shall not be used to provide any services currently or historically provided by or through Bus or Train Operators nor shall they be allowed to operate any passenger vehicle greater than 30 feet in length and/or designed to carry more than 29 seated passengers".

Miami-Dade Transit Managers have already approached Local 291 and proposed that the Route W be provided through Paratransit Drivers Attendants, but the Union has not officially responded. The County's 2000 Transit Development Program calls for Route W to be eliminated, and at least partially replaced with Route A which would be extended south along the west side of Miami Beach to South Point Drive. As noted earlier, this would reduce the cost of providing the service considerably, and result in the use of minibuses rather than large buses on Route W. This would be a more appropriate level of service for the neighborhood, and it would respond to many of the reasons why the County would even consider contracting with Miami Beach to do the service. While it is not inconceivable that some agreement might be arranged to contract out Route W to Miami Beach, there might also be a degrading of the relationship between MDT and its union which would only make everyone's jobs within MDT that much more difficult. If Miami Beach truly wishes to pursue operating the Route W, or operating the Electrowave along the western portion of the route, it might need to identify ways to make it worth the County's while to permit it. For instance, the City might agree to provide the service while receiving less than the full amount of funds from the County required to provide the service. This would make such an action clearly more cost effective to the County than using its own Paratransit Drivers Attendants, and allow the County to apply the savings to other new transit service.

10. Economic Benefits

The benefits of transit are varied and diverse. There is disagreement among transit professional on how to adequately measure the benefits of transit. However, there is agreement on transit's important role in Miami Beach as available land becomes scarce and mobility is more constrained by congestion. In addition, there is a clear relationship between mobility and economic viability. Therefore, understanding the economic benefits of transit and mobility is one way to measure transit benefits in general.

Transit will become an important option in Miami Beach, if growth and economic vitality are to be sustained. The County understood this relationship between transit and economic growth when it published the Transit and Land Use Study. The City's commitment to transit is evidenced in its Transportation Concurrency Management Area/Urban Transit Village legislation which promotes transit as a viable alternative to automobile usage. Mature transit programs in cities which experience great amounts of tourism, such as San Francisco and New Orleans, give further guidance as to how Miami Beach can expand its Electrowave system to best achieve the goals set forth by the City and County. Initially, though, it is important to understand the impacts and potential benefits of transit on the community.

10.1 TRANSIT IMPACTS

There are essentially six major categories of transit impacts. These include Mobility and Access Impacts, Economic and Financial Impacts, Environmental and Energy Impacts, Safety and Security Impacts, Social Equity Impacts and other Intangible Impacts. These categories are further broken down below.

The Electrowave registers favorably with each of these types of impacts. The system is well used by its patrons and compares well to ridership on MDT routes. For example for 2000, he Electrowave carried approximately 22 passengers per hour compared to 27 passengers per hour for MDT's Miami Beach routes. It has the potential to cut travel times particularly in a pedestrian oriented community with an elderly population, such as Miami Beach. Its headways of 15 minutes make the system relatively convenient. This could be improved to make the system more available and attractive, as could the services reliability. While the Electrowave has been generally reliable, there have been incidents of mechanical failure in the recent past. The quality of service is high, with attractive and comfortable vehicles. The fact that the service exists has a positive impact on the capacity of the local roadway network. The Electrowave enhances mobility in South Beach.

Economic and Financial Impacts

- Public finance
- Cost-effectiveness of service
- Cost avoidance
- Affordability
- Economic growth
- Development and land use

Benefits are valued in how the system affects it users in the sense of time savings, its affect on regional employment and growth, the benefits of densities and agglomeration of uses, and the benefits realized by the simple ability to get more people to specific destinations than could otherwise not access those destinations. These benefits can be measured if they are quantifiable.

FDOT, the 2nd largest funding source for the Electrowave in the last 3 years, paid no more than 35% of the total operating cost of the service. The Electrowave is financed in large part, and in ever increasing proportion, by the City of Miami Beach. Its service is fairly cost effective but could use additional

management and measurement techniques to enhance its cost effectiveness. Its alternative fuel drives its cost down, especially in light of record gasoline prices. At $ .25 per ride the service is affordable, and is priced significantly less than MDT service. As a contributing factor to the Transportation Concurrency Management Areas which Miami Beach has implemented, the Electrowave has reduced the dependency on the car to allow for additional development and economic growth.

In general the economic impacts of transit are 3 to 1. There are $3.00 of economic impact for every $1.00 in transit investment in a given area. The mobility and efficiency benefits of transit nationwide is estimated to save the country over $45 billion annually (Measuring and Valuing Transit Benefits and Disbenefits, TCRP Report # 20, FTA, Washington D.C., 1996). According to the Economic Impact Analysis of Transit Investments: Guide Book for Practitioners, TCRP Report # 35. FTA, Washington D.C., 1998, it would cost the residents of Miami-Dade County an additional $63 million annually to have no transit service.

Environmental and Energy Impacts

- Energy consumption
- Emissions
- Noise
- Ecology
- Land consumption

Fueled by electricity, the system has a positive effect on energy consumption, emissions, and noise. This is especially relevant to Miami Beach where pedestrianism is a vital component of city life. This is an ecologically minded transit system, one of few like it in the world. The system does however require land for vehicle storage. Land is at a premium on Miami Beach, and therefore creative development options and a mix of uses needs to be considered.

Safety and Security Impacts

- Rider safety and health
- Transit employee safety
- Non-rider safety and health
- Rider security
- Neighborhood integrity
- Barrier effects

The Electrowave's perception as a safe transit option has contributed to its successful ridership numbers. Safety is further enhanced as the system is accepted as a neighborhood system in partnership with the regional system provided by the MDT service. There are no crime statistics for the Electrowave.

Social Equity Impacts

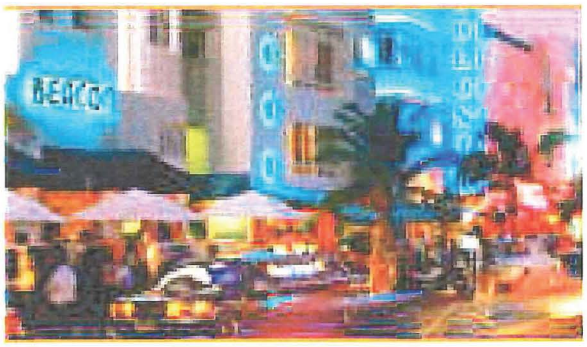
- Levels of service
- Utilization
- Service availability
- Access to destinations

The Electrowave's low fares ensure its accessibility regardless of passenger income. Electrowave service currently operates over 46,000 revenue hours each year and 22 passengers per hour, as it provides access to South Beach's most popular destinations.

Intangible Impacts

- Value to the community
- Value to the individual

The intangible refers to the systems's value to the community and the individuals that use it. This is a question that can only be answered by the users, operators, and policy makers. In an ever constricting world, transit is increasingly being viewed as a necessary public service—one that enhances the quality of life for residents and provides the opportunity to maintain or enhance economic vitality. After extensive interviews with project stakeholders, it is seen that the Electrowave, transit and mobility are valuable to the community. This value is tempered by the costs. The Electrowave plays a major role in allowing the concurrency system to permit further development. Clearly development is an important factor in economic vitality.



10.2 TRANSIT/LAND USE RELATIONSHIP

The 1995 Miami-Dade County Transit/Land Use Relationship Report prepared for the MPO by Gannett Flemming, explains the compatibility factors that influence transit ridership.

These factors include land use densities, mixed use areas, land use oriented to transit use, buildings oriented toward transportation services, walking distances, and minimal parking. All six factors rely on density in the form of activity centers and the convenience and cost effectiveness of transit versus car usage. Additionally, according to the report, for transit to be successful, both origins and destinations of trips must be at activity centers.

Land use densities that encourage ridership also depend on the frequency of service, its quality, and its proximity to transit users. This applies to residential users. Transit increases the potential to serve and attract more concentrated and mixed use development. This is occurring naturally on Miami Beach. Attraction of higher densities is most frequently associated with rail. The Electrowave is a primary step in the goal of increasing mobility options. These very well may include rail in the future. An average of 15 dwelling units per acre can accommodate 10 minute headways for local bus service. The frequency of non-residential users depends on employment densities and concentrations of multiple uses. An average of 20 million square feet of non-residential floor area, that is office and entertainment, can support a frequency level of bus service every 10 minutes. Currently, the Electrowave runs at 15 to 18 minute headways. Some proposed areas of Electrowave service have 102 dwelling units per acre. Future expansion of the Electrowave service should be in areas with comparable densities, or where land uses are transit supportive.

It is not enough to have sufficient densities to support transit. Transit must be easy to use and supported by the local government. The buildings in the catchment area must have good access to transit stops that appear to be safe and easy to use. Additional policies that encourage transit use in lieu of auto use can also encourage transit use. Miami Beach has a limited number of parking spaces and has no requirement for parking for existing housing or office space. However new developments of any use should have 1.5 spaces per unit. Additionally, the Beach's Transportation Concurrency Management Area (TCMA) status, recently developed in 2000, established South Beach, Middle Beach, and North Beach as transit villages. These villages encourage infill and redevelopment that support mobility alternatives, establish standards to reduce conflict among modes of transportation, and heighten awareness of transit options. The policy specifically addresses the Electrowave shuttle expansion as a part of mobility enhancement. These are important factors in developing a good transit system.

10.3 QUALITY OF LIFE ISSUES

The other important aspect of transit, as it relates to economic development, is an improved quality of life. Increased use of transit will help maintain current levels of traffic to create a more livable community.

Pedestrians and bicyclists will have a safer environment and mobility will be enhanced for everyone. The Electrowave can be considered a true amenity. It is affordable and an effective alternative to the automobile or walking in the summer heat. Once the system is understood as an amenity and a viable contributor to improved quality of life, it will also be able to function as a means of economic development. In older cities with more established transit systems, and even small circulators and trolleys, land values peak around these transit nodes. They eliminate the need for automobiles and, therefore, enable families that cannot afford to own automobiles to travel to their places of employment. This could be especially true for hotel and restaurant workers and other workers in the service industry.

New Orleans, Charles Street Trolley

San Francisco's Cable Car

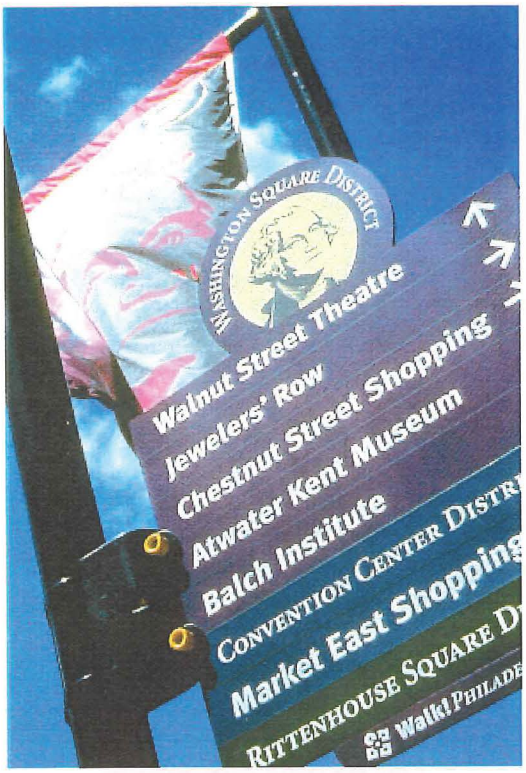
10.4 CASE STUDIES

It is also useful to look at other cities that are similar to Miami Beach with specialty transit facilities including New Orleans and San Francisco.

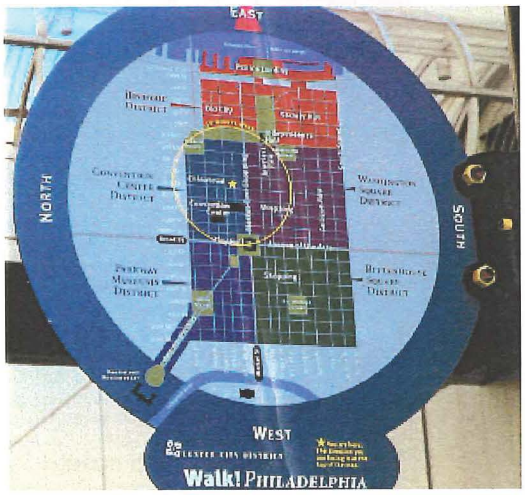
New Orleans is a popular tourist destination that uses electric streetcars to shuttle residents and tourists through the City. There are two lines that run along the historic St. Charles Street and the Riverfront. This is a historic system, which was named to the National Register of Historic Places and the National Mechanical Engineering Landmarks. It is, in fact, a visitor's attraction as much as a transportation service. The St. Charles streetcar line runs through the Central Business District, a densely populated historic residential area, a commercial district at South Carrollton and Claiborne avenues, historic monuments, two major universities, and the Audubon Zoological Gardens. It carries approximately 20,000 passengers per day. The Riverfront streetcar connects the new commercial developments in the Warehouse District to the developments along the riverfront and the historic French Quarter. Its success warranted an additional rail track opened in 1998. A third line is planned the Canal Street, a major thoroughfare in New Orleans. As the system is part of the New Orleans Regional Transit Authority, the 24 streetcars will replace existing local bus service along Canal Street. The New Orleans Streetcar system is successful because it serves land uses with high densities, both residential and commercial, that can support public transit. The historic quality of the system makes the streetcars a tourist attraction to add a third kind of passenger to the system. The Electrowave can be marketed as an attraction and certainly as a comfortable way to view the City. Like New Orleans, Miami Beach has the residential and commercial densities, and the tourist population to sustain the Electrowave.

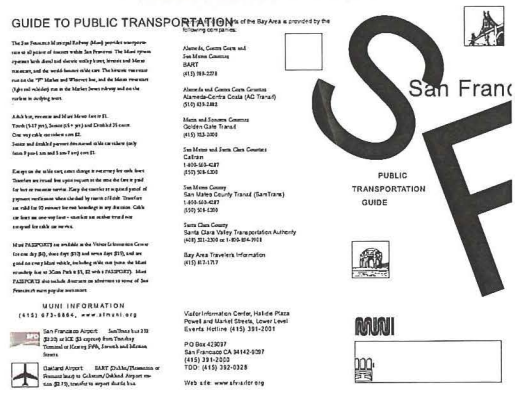
San Francisco has three cable car routes, which are also historic. They are more of a tourist attraction than a viable transportation option, however, the cable cars are extremely popular and often have waiting lines. The Powell-Mason line runs through Nob Hill, home to many cultural attractions, to Fisherman's Wharf—a tourist destination. The Powell-Hyde line runs through a parallel neighborhood and terminates at another popular tourist venue—Ghiradelli Square and the Aquatic Park. The California line traverses the Financial District and has a significant commuter business. All three lines carry approximately 10 million passengers annually and are run by the San Francisco Municipal Railway (MUNI) also responsible for the bus and light rail system in San Francisco. Cable cars run every 6 minutes on the California line and every 3 minutes on both Powell lines. They have proven to be a good source of revenue for the City. San Francisco is a much larger City than Miami Beach, but they share similar densities and tourist attractions along their respective transit routes.

Both examples show how the relationship between transit and land use makes a viable public transit system and how the transit systems are used to move tourists throughout the cities as well as some commuters.



Ideas for marketing

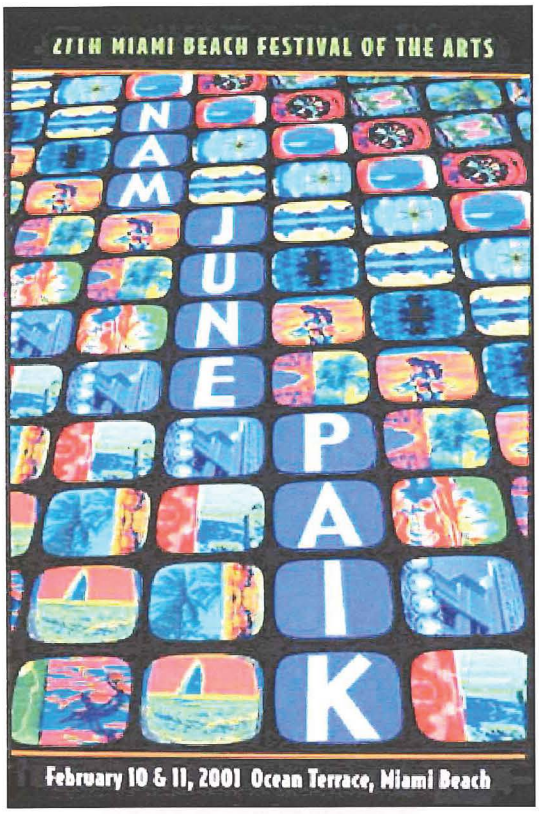




The case studies show evidence of transit's value as an economic generator while the City of Miami Beach and the State of Florida legislate transit to meet concurrency requirements to maintain a healthy economy and quality of life. However, to be successful, transit must be accompanied by an aggressive marketing program. Currently, the Electrowave fills a niche that is not reached by the MDT. It serves local residents, employees, and tourists that need to circulate around South Beach as opposed to the MDT, which serves more regional transit users and brings individuals into the City of Miami Beach. The W route is the only MDT route that serves local transit needs.

Cities such as San Francisco and Philadelphia have developed extensive signage and visitor packages to entice people to use transit as a navigational device. San Francisco uses brochures that highlight specific tourist attractions coupled with directions via the MUNI and cable car system. These brochures are available from the Convention and Visitors Bureau. The City of Philadelphia has developed a system of colorful signs to direct pedestrians to points of interest and centers of commerce. The signs have been installed throughout the city and function as a system of unifying elements.

The Electrowave could attract more riders with larger more detailed signs at every shuttle stop. The current "Shuttle Stop" sign is small and does not provide information in regards to the route and headways. Increased signage would mean increased visibility and greater ridership, especially for tourists and residents unfamiliar with the Electrowave route. Improved shelters at shuttle stops could also increase visibility. These stops could continue the Art in Public Places program presently used to wrap the shuttles in art. There are examples of these innovative bus shelters across the world. A combination of these marketing strategies will help extend and expand the life of the Electrowave program, fortify existing transit efforts of the MDT, and support the infrastructure for future innovations in local and regional transit.



11. Funding Strategies

There are many potential sources of funds that could help to pay for the operating and capital expenses of continued and expanded Electrowave circulator services.

While Miami Beach might become eligible to receive some of these funds on a regular basis, many of the other sources of funds can only be obtained through a competitive process. Obtaining the competitive grants will require a determined and energetic staff and a supportive policy board and a long range (5-year) budget process. "Local match" will likely be required in order to secure most state and federal grants. The next section of the report will describe the sources of funding that exist and might be available to pay for operating and/or capital expenses associated with new local electric circulator services. It will be necessary to combine such funding with dedicated local sources of funding. Without such sources dependence on grants will not sustain the system. It is recommended that such local sources be aggressively sought, for they are critical to funding operations.

11.1 FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) FUNDING PROGRAMS

1. The Florida Transit Block Grant Program

One of the most important sources of funding available to transit agencies in the State of Florida is the Transit Block Grant Program administered by the Florida Department of Transportation. This program provides dollars to all transit operators in the State that provide fixed route transit services and are *designated* recipients of Section 5307 federal transit funding. The State currently allocates approximately $50 million dollars annually to 28 different transit providers through the state transit block grant program. This amount is expected to increase by approximately 3 percent a year over the next five years. The funds from this program may be used by recipients for either capital or operating expenses. These funds are made available to recipients based on a three part formula that takes into account the following three factors: (1) population of the service area (2) total revenue miles of transit service provided and (3) total passenger trips provided. Miami-Dade County is one of the 28 recipients of state transit block grant funds, and is the only recipient of such funds within Miami-Dade County. If Miami Beach were to become eligible for state transit block grant funds, it might expect to receive approximately $200,000 per year from FDOT on an annual basis based on its population and current level of revenue miles and total passengers.

As noted above, a transit provider must be a *designated* recipient of Section 5307 federal transit funds in order to be eligible for state transit block grant funds. Miami Beach does not yet enjoy that status. To this date, Miami Beach has received federal transit funds on a "pass through" basis from Miami-Dade County. In other words, Miami-Dade County has, as the only designated recipient of federal transit funds in the county, received capital grant dollars from the Federal Transit Administration and passed them on to Miami Beach through an interlocal agreement between the two governmental entities. In the near future, it appears that FTA will agree to allow Miami Beach to become a *governor's apportionment* recipient of federal transit capital grants. This means Miami-Dade County will no longer be responsible for administering the grants that provide Miami Beach with federal transit capital funding for such things as vehicles and facilities. Miami Beach officials will have more direct control over the capital

transit funds, but they will also become responsible for all such administrative responsibilities to comply with federal regulations.

It must be clearly understood that there is a huge difference between being a *"direct"* recipient versus a *"designated"* recipient of federal transit funds. The Federal Transit Administration prefers to deal with only one designated recipient in any political jurisdiction if at all possible. This reduces the FTA's time spent in administering grants, and allows local areas to determine among themselves how to divide such funds within the political jurisdiction. However, they might permit a second designated recipient to be established if there is consent of the existing local designated recipient as well as the local Metropolitan Planning Organization and the Governor of the State of Florida (most likely through the Department of Transportation). It appears that Miami-Dade Transit has no objections to Miami Beach becoming a direct recipient of federal capital grants. However, they are not willing to allow Miami Beach to become a designated recipient, which would then make the city of Miami Beach eligible for state transit block grant funds. This could establish a precedent that might be emulated by many other cities in the county, and could ultimately cause Miami-Dade County to lose a considerable amount of state transit block grant funds. In addition, it is unlikely (but not inconceivable) that the Governor or FDOT would agree to designating Miami Beach as a designated recipient of federal transit funds if Miami-Dade County were clearly opposed to this.

If Miami Beach secures this designation, the city could expect to receive approximately $200,000 per year from the FDOT through the transit block grant program. The amount of money received from this source will fluctuate modestly each year based on how much new service is being provided throughout the state, and how figures on ridership, service miles, and population change.

Another way the City might try to become eligible for state transit block grant funds is to ask the state to modify its criteria to receive such funds by requiring an area to be a "direct recipient" of federal transit dollars, rather than a "designated recipient".

2. The Transportation Outreach Program

The Florida Legislature created the Transportation Outreach Program (TOP) with the passage of Senate Bill 862 in FY 2000. This program replaced the Fast Track Economic Growth Transportation Initiative that was in place for only one year. The "TOPs" program is dedicated to funding transportation projects of a high priority based on the principles of:

- Preserving the existing transportation infrastructure;
- Enhancing Florida's economic growth and competitiveness; and
- Improving travel choices to ensure mobility.

A minimum of $60 million will be available, annually, to fund projects under this program. A seven-member Transportation Outreach Program Advisory Council currently makes annual recommendations to the Legislature on prioritization and selection of economic growth projects. The Advisory Council is composed of three representatives chosen by the Governor, and two each by the President of the Senate and the Speaker of the House of Representatives. In the first year of the program (FY 2001), the Advisory Council recommended projects totaling $115,313,183 to the Legislature, an amount that exceeds the minimum availability by almost a two-to-one ratio. As of May 1, 2001, the Legislative Conference Committee for the state budget approved $115,859,919 in projects throughout the state. Transportation Outreach Program projects may be proposed by any local government, regional organization, economic development board, public or private partnership, metropolitan planning organization, state agency, or other entity engaged in economic development activities.

Eligible projects include those for planning, design, acquiring right-of-way for, or constructing the following: major highway improvements, feeder roads which link to major highways, bridges of state or regional significance, transportation improvements for trade and economic development corridors, access projects for freight and passengers, and hurricane evacuation routes. Other eligible projects include major "public transportation" projects that encompass seaport and airport projects, rail projects that facilitate the movement of passengers and cargo, Spaceport Florida Authority projects, and bicycle and pedestrian facilities that add to or enhance a statewide system of public trials. Of particular interest

to this report, public transportation transit projects which improve mobility on interstate highways, or which improve regional or localized travel are also eligible.

Projects funded under this program should provide for increased mobility on the state's transportation system. Projects that have local or private matching funds may be given priority over other projects. Projects must also be production-ready within five years and be consistent with local comprehensive plans.

From the description of the program provided above, it is clear that this program has a heavy predisposition to favor projects that will help the economy of a region. Hence, an expanded Electrowave service might qualify for eligibility under the TOPS program if a direct link can be made between the services provided and the economic vitality of Miami Beach.

The projects that have been approved for funding by the Legislature in the first year of the program range in cost from $63,000 to $12,500,000. Hence, even relatively small projects might be funded, and local areas such as Miami Beach should not hesitate to apply for such funding, particularly if they can secure partners and supporters, and they believe a good case can be made that their project will enhance economic development. Of great importance to the Miami-Dade area, one of the projects included in this program for FY 2001 totaled $11,770,000 for a bus replacement program in Miami-Dade County to be administered by the Miami-Dade Transit Agency. According to the language of the conference committee, "These funds will require a non-state match of 40%. Of the funds appropriated, 60% shall be provided for new feeder/circulator buses which travel to the main routes. The remaining 40% of the funds shall be provided for an increase or renovation of the existing main bus fleet." This appropriation will hopefully survive any cuts that the Governor is empowered to make. Miami Beach might wish to pursue discussions with Miami-Dade County to see if there is any possibility of the county utilizing some of these funds for the purchase of new minibuses for use in Miami Beach.

It has not yet been determined what the schedule for proposal submission will be for FY 2002. Local areas interested in developing applications for these funds should consider having their proposals ready by July 2002. Those areas interested in proposing such projects should contact the District Six Planning and Public Transportation Director's office at 305-377-5900. Two of the seven members of the TOPs Advisory Council are residents of Miami-Dade County (Elizabeth Reyes-Diaz and Carlos L. Valdes). However, there are proposals to modify the composition of the Advisory Council to ensure that there is one representative from each of the seven FDOT districts throughout the state.

3. Public Transit Service Development Program

The Public Transit Service Development Program was enacted by the Florida Legislature to provide *initial* funding for *special* projects. The program is selectively applied to determine whether a *new or innovative* technique or measure can be used to improve or expand public transit. Service Development Projects specifically include projects involving the use of new technologies, services, routes, or service frequencies; the purchase of special transportation services; and other such techniques for increasing service to the riding public as are applicable to specific localities and transit user groups. Projects involving the application of new technologies or methods for improving existing conventional operations, maintenance, and marketing in public transit systems can be funded through the program. Funding of Service Development Projects are subject to specified times of duration, but are supported for no more than three years per route. If deemed successful by their own measures, Service Development Projects will need to be continued by the public transit provider without Public Transit Service Development Program funds at the conclusion of the FDOT support period.

Each district FDOT office develops and submits a program of eligible Service Development projects to the Central Office by the first working day of July each year, for implementation beginning July 1 of the following fiscal year. Projects are developed in consultation with eligible recipients, and the need for such projects is justified in the recipient's Transit Development Plan (TDP). For example, a project to initiate a new marketing campaign must be generally supported in the recipient's TDP with a statement of need for improved marketing efforts, as well as an objective to provide these efforts. It is important to note that municipalities wishing to start a new transit service separate from the county are also eli-

gible for Service Development funds from FDOT. Their Service Development grant application must be supported by their own Transit Development Plan that describes the project and the likely benefit to public transit in the area.

There is a growing number of other municipalities in Miami-Dade County that are also applying for and competing with Miami Beach for these funds including, Hialeah, North Miami Beach, Coral Gables, Brickell Shuttle, and Flagler Street Shuttle.

As delineated in *Section 341.051, Florida Statutes*, the Department is authorized to fund Service Development Projects that will improve system efficiencies, ridership, or revenues. The following are eligible functional areas along with specified time durations for Service Development Projects: projects that improve system operations, having a duration of no more than three years; projects that improve system maintenance procedures, having a duration of no more than three years; projects that improve marketing and consumer information programs, having a duration of no more than two years; and projects that improve technology involved in overall operations, having a duration of no more than two years.

The Department provides up to one-half of the net project cost, but usually no more than the amount of funding committed by the local project sponsor. Any proposed state participation of more than 50 percent of the net project cost is for projects of statewide significance. The FDOT Central Office in Tallahassee makes the final determination of whether a project qualifies for more than 50 percent state participation. District offices are notified of the determination before the appropriation request is forwarded to the Legislature. This program offers great financial support for new local circulator services.

This state program is the most likely source of funding of operating or capital costs associated with new Electrowave services. Requests for such funds need to reach FDOT District offices by mid-May 2001 in order to be considered for funding starting in July 2002. If Miami Beach is interested in applying for grants from this program, city representatives should contact the District Six Public Transportation Office at 305-377-5906. FDOT budgets approximately $2,000,000 statewide per year for this program. These funds are distributed throughout the seven districts of the department; approximately $450,000 might be available in District VI on an annual basis. Again, there is severe competition for this program's funds, not the least of which comes from MDT which has many projects it would like to try on a pilot basis. Local leaders might consider approaching the FDOT Central Office staff in Tallahassee to recommend increasing funding for this program on a statewide basis to help support new local circulator services.

4. Transit Corridor Program

The FDOT Central Office annually reviews all existing projects that are currently approved and operating as of its annual review. The Department then allocates to each district sufficient funds to cover these ongoing projects. First priority for funding under this program is for existing projects meeting their adopted goals and objectives. Any remaining funds are allocated to each of the districts by formula, based on each districts' percentage of the total state urbanized population. It is generally recommended that new corridor funding requests be submitted to the district FDOT office at least 12 months prior to the desired year of funding.

The districts may program up to 100 percent of the cost for transit corridor projects, as provided by statute, involving the activities indicated below, either by grants to a public entity or by a Department contract for services for part of or all services necessary to plan and execute a transit corridor project including, but not limited to:

- Development of Transit Corridor Plans;
- Design and construction or installation oversight of project facilities and improvements;
- Providing guidance and administrative support to the project's Technical Advisory Group during planning and implementation of the project;
- Development of marketing and public relations activities;
- Capital acquisition and investments based on study findings and as agreed to by the project Technical Advisory Group, including but not limited to:

    1. Rolling stock such as buses, vans, light rail vehicles and other high occupancy vehicles.

2. Purchase of land for installation of project facilities and right-of-way for transportation corridor improvements.
3. Construction and installation of facilities, such as park-and-ride lots, shelters and stations.
4. Transportation corridor improvements such as turn lanes, traffic controls, and exclusive lanes or facilities for high occupancy vehicles.

- Operational costs including but not limited to:

1. Pre-service preparations
2. Service operating deficits
3. Marketing and public relations
4. Project administration
5. Security and traffic control
6. Equipment and project lease, including appraisals
7. Commuter transportation services
8. Carpool and vanpool activities
9. Other Transportation Demand Management strategies targeting employers along the corridor or legitimate costs deemed appropriate by the District.

Each corridor project must have clearly defined goals and objectives. Milestones have to be established by which progress toward the goals and objectives can be measured. Decision points should be established where continuation of certain elements of the project—or indeed the entire project—can be acted upon. The goals, objectives, milestones, and decision points must be defined by the grantee, be consistent with the Local Government Comprehensive Plan(s), Strategic Regional Policy Plan, Metropolitan Planning Organization Long Range Transportation Plan and the Florida Transportation Plan, and approved by the district office initiating the project. After the initial two-year period, projects consistently meeting milestones can be reauthorized by being added to the Department's work program.

This funding program requires more rigorous planning and accountability in terms of measures of success. However, the major advantage of this program is that *it can fund virtually 100 percent of operating and capital costs for an unlimited number of years as long as the project's goals are being met.* Once again, applications for these funds should be submitted a year in advance of planned implementation. This would mean an application for these funds should be made by May 2001 for implementation in July 2002. In spite of the potentially high applicability of this funding program for Miami Beach, particularly if it chooses to improve frequency of service on the existing South Beach routes, it should be realized that FDOT's District Six office is not accepting new applications for funding under this program this year. Existing transit projects on Flagler Street and the Busway currently absorb the dollars that are available under this program.

Currently, FDOT receives $800,000 of these funds a year (overly committed to MDT purposes—busway, cat service, etc.). Unless the legislature does not allocate more CDP funds to FDOT District 6, it is unlikely the Electrowave will receive any of this funding. This funding was initially received at the Electrowave's inception, but has not been a recurring source of funding.

5. County Incentive Grant Program

This Florida DOT program provides grants to counties to improve a transportation facility which is located on the State Highway System or which relieves traffic congestion on the State Highway System. The FDOT must consider, but is not limited to, the following criteria for evaluation of projects for County Incentive Grant program assistance:

- The extent to which the project will encourage, enhance, or create economic benefits;
- The likelihood that assistance would enable the project to proceed at an earlier date than the project could otherwise proceed;
- The extent to which assistance would foster innovative public-private partnerships and attract private debt or equity investment;
- The extent to which the project uses new technologies, including intelligent transportation systems, which enhance the efficiency of the facility;
- The extent to which the project helps to maintain or protect the environment; and
- The extent to which the project includes transportation benefits for improving intermodalism and safety.

FDOT will participate financially at different levels, depending on the nature of the project. For projects on the Florida Intrastate Highway System, the department shall provide 60 percent of the project costs. For projects on the State Highway System, the department shall provide 50 percent of the project costs. For local projects that demonstrate an ability to relieve traffic congestion on the State Highway System, the department shall provide 35 percent of the project costs.

Grants from this program source may only be used to pay for capital costs associated with a transportation project, but they can and have been used for *transit* capital expenses. Five transit projects received funding through this program in FY 2000, with the funds being used for such purposes as transit transfer hubs, shelters, and the cost of purchasing property for transit improvements. Approximately $13.5 million will be available in District VI in FY 2003, although it is uncertain how much money might be available after that time. A municipality may apply to the county for consideration by the county for funding under this program. The county must evaluate all municipal applications. If a municipality's proposed project is rejected by the county for funding or if the county's proposed project adversely affects a municipality within the county, the municipality may request mediation to resolve any concerns of the municipality and the county. This is a program that is controlled by the FDOT District offices, and the FDOT District staff makes the decisions on which projects are funded.

Although this program appears to be designed for projects that are typically regarded as county or state responsibilities, it is possible that the capital expenses associated with Electrowave expansion could be a project to be discussed with Miami-Dade County whereby an interlocal agreement could be reached calling for the local share of the project to be provided by the City of Miami Beach. In addition, representatives of both the Miami-Dade MPO and FDOT District VI have indicated that the County Incentive Grant Program offers the best opportunity for state funding of the purchase of new electric vehicles. Last year, *local areas in District VI failed to take advantage of almost $7 million in state funds that could have been used to match local funds. These funds are still available on a carryover basis to local applicants with eligible projects and matching funds.*

6. Urban Transit Capital Program

This FDOT program provides an additional resource for capital projects. Priority for funding is given to projects that: (1) support the strategies outlined in Transit 2020, A Strategic Plan for Florida, (2) demonstrate that the state funds will be used to leverage other local funds, private funds or federal funds, and (3) can be initiated and completed in a timely fashion. Urban Transit Capital funds are allocated to the FDOT districts by formula. District VI is projected to have between $750,000 and $3,000,000 per year available between FY 2003 and FY 2006. Up to one-half of the non-federal share of capital costs may be awarded for eligible projects. Eligible costs include expenses limited to:

- Rolling stock such as buses, vans, light rail vehicles, and other high occupancy vehicles;
- Purchase of land for installation of project facilities and right of way for transit corridor improvements;
- Acquiring or constructing mass transportation facilities, maintenance facilities, terminals, park and ride lots, or passenger waiting areas; and
- Computer hardware or software for planning, scheduling, customer service or communications.

Toll revenue credits may not be used as match. Local funds or private funds may be used as match.

Eligible recipients are public agencies eligible to receive FDOT Transit Block Grants, Public Transit Service Development, or Transit Corridor funds. These funds are not restricted to specific transportation corridors as is the case with the Transit Corridor program. Local municipalities such as Miami Beach that wish to start or enhance local circulator services that promote the goals of the 2020 Strategic Plan are eligible for these state funds. The District Six office is likely to favor applications that demonstrate a clear promise of carrying significant numbers of passengers.

Project requests must be submitted to the District Office by November 1st annually. The District office will review submissions and make award decisions by December 1st annually. Project proposals

must include a description of the project and its budget, a discussion on how the project will leverage non-department funds and how the project supports the strategies in the Transit Strategic Plan. The project should also be included in the local Transit Development Plan.

11.2 FEDERAL TRANSPORTATION FUNDING PROGRAMS

Flexible funding programs first authorized by the Intermodal Surface Transportation and Efficiency Act have been maintained in the Transportation Equity Act for the 21st Century (TEA-21). These sources may be used for either transit or highway projects. The following flexible funding programs may be used for transit projects: the Surface Transportation Program (STP) and the Congestion Mitigation and Air Quality Improvement (CMAQ) programs. Both the STP and CMAQ programs are discussed below.

Flexible funds, such as STP funds, can be transferred from the Federal Highway Administration (FHWA) to the Federal Transit Administration (FTA) for project approval. Flexible funds that are programmed for transit-specific projects must result from both the local and state planning and programming processes, and must be contained in an approved State Transportation Improvement Program (STIP). In Florida, the STIP is the composite of individual jurisdiction's TIPs. Therefore, local approval of transit projects considered for flex-funding is required by MPOs and FDOT Districts even before statewide consideration is contemplated. Once transferred, these funds are treated as FTA formula funds and may be used for any *non-operating* purpose eligible under the FTA program. (Note: CMAQ may be used for operating assistance within the parameters set for that program.)

1. Surface Transportation Program (STP)

TEA-21 authorizes $33.3 billion nationally for STP over the life of the Act, which ends in September of 2003. STP funds are distributed among the states based on each state's lane-miles of federal-aid highways, total vehicle miles traveled on those highways, and estimated contributions to the Highway Account of the Highway Trust Fund. Once the funds are distributed to the states, sub-allocations are developed for each local area. STP funds may be used for any transit *capital* project including bus terminals and facilities, and rolling stock. A state/local match of 20 percent is required for STP funds. However, toll revenue credits may be used as a soft match for this program.

Public agencies that are interested in pursuing STP funds for use on transit capital projects must work with their local metropolitan planning organizations and district FDOT offices to obtain access to those funds. For example, the transit agency in Volusia County, VOTRAN, was able to obtain a formal resolution by the Volusia County MPO to annually set aside 20 percent of the county's STP apportionment for VOTRAN. However, in Miami-Dade, transportation needs far exceed resources required to fund them. Virtually all of the STP funds available to Miami-Dade County are programmed to specific transportation projects over the next five years. The TIP can certainly be amended from time to time to include new projects. However, while it might seem like a long way off, Miami Beach should be sure to plan on getting their proposed projects into the queue of projects that starts six years from now.

2. Congestion Mitigation and Air Quality Program (CMAQ)

The CMAQ program was reauthorized in the recently enacted TEA-21. The primary purpose of the CMAQ program is to fund transportation projects and programs in non-attainment and maintenance areas that reduce transportation-related emissions. Over $8.1 billion is authorized over the six-year program (1998-2003), with annual authorization amounts increasing each year during this period. All projects and programs eligible for funding must come from a conforming transportation improvement program that is consistent with the National Environmental Policy Act (NEPA) requirements.

Eligible projects include capital funding to establish new or expanded transportation projects and programs and operating assistance, under limited circumstances. Operating assistance under the CMAQ program is limited to three years, in most cases. The establishment or implementation of Transportation Control Measures (TCMs) generally satisfy program criteria and include programs for improved public transit. CMAQ can fund up to 100 percent of the project costs for eligible activities. A 20% to 80% match is required by the City of Miami Beach. This would be an ideal program to fund the purchase of

new electric minibuses due to their low levels of emissions. Miami Beach has already utilized this program to help purchase its initial fleet of seven electric minibuses.

The Miami-Dade airshed has improved over the past five years, and the south Florida area is now regarded as an "attainment area" in terms of air quality. Consequently, south Florida will no longer be eligible for CMAQ funding in the near future. However, if the Miami area air quality degrades and the region once again becomes eligible for CMAQ funds, this program would be particularly appropriate to help pay the costs associated with the purchase and operation of electric vehicles that measurably reduce the amount of ozone, carbon monoxide, and particulate matter pollution. It should be noted that all known amounts of CMAQ funding available to Miami-Dade County (obtained when the county was not in an "attainment" status) for the remaining years of TEA-21 are already programmed for other projects.

3. Federal Transit Administration Urbanized Area Formula Transit Grants

The Federal Transit Administration provides funding to transit agencies throughout the nation through two primary programs. The first is the Urbanized Area Formula Transit Grant Program, commonly known by its authorizing legislation as "Section 5307", that provides funding to urbanized areas of over 200,000 population to support capital expenses. As the title of the program implies, local transit authorities are entitled to these funds (assuming they meet all federal guidelines and requirements), and receive their share of these funds on a formula basis that takes into account the area's population, population density, and the amount of service miles provided. Miami-Dade Transit is the sole recipient of these funds in the county (please refer to information on the Florida Transit Block Grant Program provided earlier in the report.

4. Federal Transit Administration Major Capital Grant Program

Commonly known by its authorizing legislation as "Section 5309", this program provides capital assistance for new rail and other fixed guideway systems, modernization of rail and other fixed guideway systems, and for new and replacement buses and facilities. There are approximately $535 million available nationwide to help purchase buses and bus facilities. Funds from this source are available on a competitive basis and are not distributed by formula. The "competition" for these funds is primarily *political*, rather than being based on skills in grantsmanship. All of the funds for buses and bus facilities from this source are "earmarked" by Congress, with little input from the FTA staff. Once Congress has made its decisions on what areas will receive the funds, FTA prefers to work with only one designated recipient in any urban area. In Miami-Dade, the locally designated recipient is MDT. However, that agency could act as a pass-through on behalf of a local city, if there exists an interlocal agreement between the city and the county that allows the buses purchased by the county to be used in a locality for a particular program. This has already taken place in Miami Beach, whereby Section 5309 funds earmarked by Congress for Electrowave buses were channeled to Miami Beach through Miami-Dade Transit. As noted earlier, Miami Beach is in the process of becoming a "direct recipient" of Section 5309 funds, and will be responsible for complying with all grant requirements of the FTA.

For Fiscal Year 2002, the Federal Transit Administration's proposed budget includes $50 million in this program for a "Clean Fuels Formula Program" to purchase or lease alternative fueled buses and their facilities. Miami Beach might wish to consult with their local Congressional representative(s) to see if they would support continued earmarks of federal transit funds for Electrowave vehicles or facilities. The City will need to be sure that the local Transportation Improvement Program includes Miami Beach's requests.

5. Transportation Enhancement Program

The Transportation Enhancement Program (TEP) is a federal program administered by FDOT and local Metropolitan Planning Organizations. The FDOT Environmental Management Office provides TEP guidance and direction. FDOT district offices review projects for eligibility and feasibility, but the Miami-Dade MPO makes final decisions on which projects are selected for funding.

This funding is mostly available for bicycle and pedestrian facilities and is mostly used by Miami Beach, for this purpose already.

11.3 OTHER FEDERAL FUNDING PROGRAMS THAT SUPPORT TRANSPORTATION PROJECTS

1. Transportation and Community and System Preservation Pilot Program

The Transportation and Community and System Preservation Pilot (TCSP) program is a comprehensive initiative of research and grants to investigate the relationships between transportation and community and system preservation, and private sector-based initiatives. The TCSP is a FHWA program being jointly developed with the Federal Transit Administration, the Federal Rail Administration, the Office of the Secretary, and the Research and Special Programs/Volpe Center within the US Department of Transportation, and the US Environmental Protection Agency.

The TCSP provides funding for grants and research to investigate and address the relationship between transportation and community and system preservation. The States, local governments, metropolitan planning organizations (MPOs), tribal governments, and other local and regional public agencies are eligible for discretionary grants to plan and implement transportation strategies which improve the efficiency of the transportation system, reduce environmental impacts of transportation, reduce the need for costly future public infrastructure investments, ensure efficient access to jobs, services and centers of trade, and examine development patterns and identify strategies to encourage private sector development patterns which achieve these goals.

A total of $120 million is authorized for this program for FYs 1999-2003. Grant applications for TCSP grants are due to the appropriate FHWA Division Office in January of each year (FY 2002 applications were due by January 31, 2001). Grant projects are awarded in October of each year. Competition for these funds is vigorous and severe, and of the $35 million made available in FY 2000, less than 30 percent was competitively available, as $25 million was earmarked by Congress. Even more telling, only six percent—35 of 530 submitted applications—were funded last year, receiving anywhere from $100,000 to $1,000,000. However, Miami Beach might believe that its local circumstances present a strong case for eligibility under this program. In addition, South Florida is represented on the House Appropriations Committee, and it is possible that a Congressional earmark might be secured through a local congressional representative.

2. Access to Jobs and Reverse Commute Grant Program

In 1996, Congress passed the Personal Responsibility and Work Opportunity Reconciliation Act that radically changed the way welfare programs would be administered throughout the country. Welfare recipients may now only be eligible for benefits for a total of five years, with no more than two consecutive years of benefits received at one time. This legislation requires most people currently receiving welfare benefits to prepare to find work. As a way of helping welfare recipients make the transition to work, the Federal Transit Administration created the Access to Jobs and Reverse Commute Grant Program, "Welfare to Work," to help welfare recipients and low-income individuals access employment opportunities. Funds from this program are available to pay for a wide range of transportation services that link those needing jobs with areas that have jobs. Throughout the country this has often meant providing transportation from the inner city where many welfare recipients reside to the outer suburban areas where the new jobs are being created. However, there is no reason that a transportation service can't be approved for grant funding if it connects inner city residents with other employment opportunities, even if jobs are located in the central city.

Miami-Dade County has been earmarked by Congress to receive $1.1 million from this program to help establish the kinds of transportation services described above. The $1.1 million is matched by an equal amount of funds from other sources, for a total grant program of $2.2 million that will primarily be used to pay the operating expenses of new bus routes to be provided by MDT. These funds are also going to be used for providing operating expenses associated with a new local circulator route in Brickell. The Bush Administration has proposed to make the JARC program a formula program starting in FY 2002. If Miami Beach believes it can possibly justify the establishment of service that would further the goals of connecting people coming off of welfare to jobs, then it should consult with the Miami-Dade MPO and MDT to express its interest in having such a route funded through this program.

3. Community Development Block Grant (CDBG) Funds

This federally funded nationwide program administered by the Department of Housing and Urban Development (HUD) provides $4.8 billion on a formula basis to support a wide variety of community and economic development activities, with priorities determined at the local level. This program is specifically designed to assist areas of low and moderate income. While this program is not focused on transportation, communities can use CDBG funds for the construction of transportation facilities, or for vehicle acquisition and operating expenses for community transportation services. Funds from this source could be used to pay for either capital or operating expenses of shuttle services in Miami Beach if it is consistent with community development goals and can be shown to benefit low and moderate-income people. There is a great deal of local input into how these federal funds are used, and any thoughts of using CDBG funds for the purpose of paying for buses, bus facilities, or shuttle services would need the support of these communities which have many other pressing needs and redevelopment aspirations, and long lists of actions to be funded in the pipeline.

11.4 LOCAL SOURCES OF FUNDING

Reoccurring local funding sources are extremely important in the operations of this system. As mentioned the City is paying an ever-increasing percentage of an ever-increasing service. Reoccurring funding from parking, concurrency funds, or the private sector will be important in mitigating these costs.

1. Revenues from Parking Authorities

In other cities where downtown circulator services are provided, a good portion of the funds to pay for their operation comes from parking revenues. These services are designed to serve as feeders to and from parking facilities located on the immediate periphery of their downtowns. The Electrowave service in Miami Beach already receives some of its operating revenue from parking revenues received by the city, and should expect to continue this practice in the future. The Electrowave has been designed to encourage people to use central parking garages rather than cruise for on-street parking. These local funds could be used as a match to leverage funds from other sources.

The Electrowave has been developed to enhance mobility in the City of Miami Beach. Mobility is a wide-ranging issue that deals with a person's ability to move about the community and access desired destinations. There are several extremes that are interrelated that enhance mobility. These include: Parking, Transit, Automobiles, Pedestrians, Bicycles, Water Uses and Transportation Facilities. Each of these play a very important role in the mobility system. As development continues, more pressure is being placed on the roadway network. There is an ever-increasing amount of cars utilizing the City. The Electrowave should be able to assist in minimizing the number of automobile trips taken by vehicles once they enter the City. This "park-and-ride" philosophy makes it easy for a person to enter a garage, leave the car behind and circulate around the City through the Electrowave. The link between parking and the Electrowave is strong and, if utilized appropriately, will alleviate congestion. This is the justification for the use of parking dollars to fund the Electrowave.

2. Revenues from the Circulator Services

Transit services generally recover only partial percentages of their costs through the farebox; local circulator services can be expected to recover even smaller percentages. Since the trips taken on circulator services are relatively short, most providers believe the fares should be minimal or free. In addition, low fares, or no fares, also help encourage ridership. Fares for local circulator services in Miami-Dade County must be consistent with fares charged by MDT. The most similar fare that MDT charges is $0.25 for the Metromover, which provides services very similar to local circulator minibuses. Therefore, all local circulator services currently being provided in the county charge either $0.25 or allow passengers to board for free. In Miami Beach, passengers were allowed to ride for free for the first year of the service, but a fare of $0.25 was imposed afterward. While ridership decreased by over 30 percent, the service generated over $250,000 per year in revenues. The hopes of generating even more revenue through the farebox were hampered somewhat when the County Commission established the "Golden Passport" program, whereby people over 65 years old with an annual household income of less than $20,000 per year are allowed to ride for free. The interlocal agreement between Miami Beach and Miami-Dade County requires that the City's fare structure be similar to the County's. Consequently,

seniors with the Golden Passport are allowed to ride the Electrowave for free as well. However, the farebox should be recognized as a continuing source of income to help pay for the circulator services.

Another possible source of revenue that circulator services might generate is through the sale of advertising space on the outside and/or inside of the minibuses. This might take the form of ads on placards that promote consumer products or services. While Miami Beach has chosen to minimize these opportunities for advertising by making the Electrowave vehicles moving pieces of art, there are still some opportunities to collect revenues by selling selective space on the inside or outside of the vehicles. Another approach is to sell space to sponsors of the service with their names prominently placed on the vehicle in ways that don't appear quite so commercial. Miami Beach can focus on working with local businesses to sponsor the service as a way of generating revenue, and as a way of promoting partnerships with such businesses who will do other things to help promote the new service. Since their names would be associated with the vehicles, they would have a vested interest in helping the service to succeed.

3. Special Taxing District Funding

Chapter 18 of the Code of Miami-Dade County provides the county with the authority to establish Special Taxing Districts to help finance the provision of a wide range of public improvements and services. Special Taxing Districts are usually associated with public infrastructure capital improvements such as street lighting or sidewalks. However, they can also be used to fund public transit improvements or services. Special taxing districts may embrace not only an unincorporated area in the county, but also all or part of one or more municipalities in the county; provided however, that no such district shall be comprised solely of a municipality or embrace all or a part of a municipality without the approval of the governing body of such municipality. Special taxing districts for public transportation improvements may embrace the transporting of people by conveyances, or systems of conveyances, traveling on land or water, local or regional in nature, and available for use by the public, or a project undertaken by a pubic agency to provide public transit to its constituency, and may include but shall not be limited to the acquisition, design, construction, reconstruction, or improvement of a governmentally owned or operated transit system or ancillary facilities and improvements related thereto.

It is the intent of the county code to provide for the construction and the financing of public improvements and of providing services in areas in the county where such improvements and services could not conveniently be made available otherwise; that the cost of such improvements and services be borne on an equitable basis by those who receive the benefits thereof; and that property receiving special benefits be assessed in proportion to, but not in excess of, such special benefits. Indeed, this is how the local capital match for the Metromover system was secured. The special assessments for the areas of downtown Miami associated with the inner loop of the Metromover system have just been terminated within the past year. The special assessments for Brickell and the northeast sections of downtown associated with the Omni and Brickell loops of the Metromover will continue in effect until the year 2004.

While the county has the authority to establish special districts, it obviously would only want to do so on the condition that there is support for such a district within the proposed district. No issuance of bonds to pay for capital improvements can be accomplished without the consent of a majority of the property owners in the district.

Before a special taxing district of this nature can be established, a report must be completed that documents the benefits that will be realized as a result of the improvements or services. The report that was completed for the special assessment district established for the Metromover concluded that the estimated benefits of the project would be $256 million due to higher prestige, additional floor space made possible by better access and higher demand, less parking required, premium rents, higher occupancy, increased sales, and increased property values.

The establishment of a special taxing district could generate revenues that might possibly pay for all or a part of the operating and capital costs associated with local circulator services in Miami Beach. South Beach in particular is characterized by concentrated business and high pedestrian activity. There would seem to be a link between the economic health of South Beach and the Electrowave that a special study could establish. If so, the benefits this area might

realize from an expanded electric circulator service might provide sufficient support from local property owners to vote a new tax on themselves. Utilizing a special taxing district might also resolve a political issue of why people from all over Miami Beach are paying for a service that is only serving the South Beach area.

4. Private Contributions from Hotels and Condominiums

It is recommended that conversations be held with the hoteliers to seriously measure the commitment of establishing such a fund. It may be possible to reach an agreement with specific hotels to provide free shuttle service for their patrons at a specified rate. An example would be that at $.25 per room per week the Loews hotel would contribute $10,400 per year to the Electrowave. The contribution can rise exponentially as each hotel is added or the rate is raised. Alternatively, what many cities have done to subsidize transit is implement a parking surcharge on all off street parking. This could raise a significant amount of money and spread the cost evenly across the community essentially taxing the numbers of vehicles that enter the city. If an agreement cannot be made with the hotels, the City should pursue the parking surcharge.

In Broward County, the major condominium complexes known as Century Village prepay for all their residents which enables those residents to ride the County's bus service for "free" (the passenger pays no fare when boarding the bus). A fee of approximately $4 per unit per month is paid by each residential unit to help pay for the extensive circulator services that are provided on an otherwise fare-free basis to all residents. This allows unlimited access to such services by the residents of the condos. Although many of the residents still drive and do not use the bus services, they understand the benefits for their neighbors and support the monthly payments.

Something similar might be explored in Miami Beach. The area has a significant number of residential units and hotels that might possibly be interested in establishing the type of arrangement that exists in Broward County. This method of revenue generation would not require a special assessment to be established. It could be done through the voluntary actions of the residents and hotels of the area. Although such a funding mechanism might be easier to establish, it is also more prone to uncertainty given its voluntary nature. However, it should still be kept as an option, particularly for the large hotels along Collins Avenue.

In short, no opportunities to gain private partners should be dismissed. It is surprising how often private entities will find it in their best interest to contribute to a mobility service.

5. Impact Fees or Mitigation Fees in Lieu of Impact Fees

Miami-Dade County extracts general transportation impact fees from new developments, but does not utilize these fees for transit purposes. Broward County and Hillsboro County both levy impact fees on new development that may be used to purchase capital equipment or facilities for transit service. There needs to be a rational relationship between where the developments occur and where the capital items are utilized. Miami-Dade County could institute an ordinance similar to the ones in the counties noted above. The County might have the opportunity to assess impact fees on new developments in Miami Beach that could be used to help pay for some of the capital costs associated with expanded shuttle services. The chances are much greater that Miami-Dade County would retain such impact fees to help pay for the capital costs of their own transit vehicles and facilities serving Miami Beach.

In Miami Beach, the city is hoping to establish a steady source of revenue for operating its Electrowave through a mitigation fee in lieu of impact fees. It appears that state law provides that impact fees can only be levied by a county. A mitigation fee is an instrument that local municipalities can assess that might help accomplish the same purpose.

6. Local General Revenues

It is tempting for any local municipality to simply say that public transportation is the responsibility of the county, in part because the County Code of Ordinances grants Miami-Dade County the jurisdiction for virtually all transportation services in the county. However, any city with the desire to do so can utilize funds from its own general revenue accounts to help pay for a local community-oriented transit circulator service, as Miami Beach has already done. The interlocal agreement between Miami-Dade County and Miami Beach allows the City to provide its own transit services within certain pa-

rameters, and after the review and approval of Miami Dade Transit.

7. Local Option Gas Tax Revenues

All cities receive portions of local option gas taxes levied by Miami-Dade County. Proceeds already being collected are basically completely committed to roadway and traffic engineering improvements. However, it is possible for a city to indicate that any *new* revenues from this source that exceed existing amounts would be dedicated to help pay for the operation expenses of a local transit circulator service.

The draft 2002 TIP includes only $531,472 from Local Option Gas Tax for Miami Beach. Public Works seriously depends on these funds for fixing roads under the City's jurisdiction.

In Broward County, the County Commission passed an additional one-cent local option gas tax in FY 2000. It was passed to encourage more local participation in public transit improvements, including new circulator services, new transit-supportive infrastructure (e.g., bus shelters, bus bays, or kiosks), or other improvements at existing transit terminals. Each city in the county is entitled to a portion of the penny gas tax proceeds, as long as they use it for any of these purposes. The funding associated with this provision represents 26 percent of the penny tax proceeds, or about $1,690,000 per year. These dollars are distributed by formula based on each city's population. In addition to this funding, there is another 26 percent of the same one-cent gas tax that is available to all cities on a competitive grant basis. The funds available through this additional 26 percent of the penny gas tax can only be used for community bus service and not for the broader uses noted above. Seven cities in Broward County have taken advantage of the competitive grants and are now in the process of receiving between $100,000 and $400,000 annually that they apply toward the cost of providing local transit circulator services in their respective communities.

Unfortunately, Miami-Dade County cut the local option gas tax by two-cents. Miami-Dade County was levying the entire statutory-permitted six cents maximum local option gas tax until 1996. During that year, the County Commission rescinded two cents of the six cents being levied. The County Commission, by super-majority vote and the support of the County Mayor, could again levy one or two additional pennies of local option gas tax. Each penny levied would generate approximately $9 million per year. Proceeds from the tax could be used for any transportation purpose, and probably would be largely allocated to the backlog of road projects needed, but at least a portion could be used to fund the capital and/or operating expenses of local transit circulator services. This would clearly be the most expedient way to pay for much of the operating expenses associated with local circulator services. However, it is politically risky to do so. Transit-oriented general sales tax initiatives have thrice failed by increasingly large margins at the polls over the past decade. Still, representatives of the Miami-Dade League of Cities, including Miami Beach, might wish to review what has occurred in Broward County and determine if they would like to pursue such a proposal with the Miami-Dade County Commission and Mayor.

8. Assistance from Other Partners

Florida Power & Light Company is the major electric utility in South Florida, and has a clear interest in the development of electric vehicle technology. Florida Power & Light (FPL) might help in designing new maintenance facilities, and possibly contribute toward the cost of charging units. FPL staff will undoubtedly offer technical assistance to any study area in the development of specifications of electric vehicles and the infrastructure to support them.

If the routes help promote other public programs, there might be the chance that these programs could provide funding for facilities such as bus stops or shelters, or help promote the new shuttle services. It is possible that these other programs will identify non-transportation sources of funds to help pay for enhancements such as bus shelters. Non-profit foundations might provide similar assistance if they see the synergy between the circulator services and the other public programs. Clearly, there would be more support from enthusiastic citizens if the circulator services enhance access to the other public programs. The managers of the Electrowave already have sharpened their skills in identifying non-traditional, non-transportation partners and should continue to meet with as many community and business interest groups as possible to connect with more partners in the future.

9. Other County Funds

Broward County also utilizes some of its own County general revenues to help pay the costs of municipal circulator service. Cities in Broward County that do not compete for the funds from the local option gas tax are reimbursed at a rate of $20 per hour for each hour of service provided by municipal transit circulators. This represents approximately half the cost of providing service at the local level.

Miami-Dade County is also considering endorsing a $1.5 billion bond issue for unmet capital needs throughout the county. A referendum might be placed on the ballot in calendar year 2001. The new (February 2001) County Manager and the Mayor will fine-tune the list of projects that will be proposed for funding. It might be possible to include funding for electric vehicle maintenance centers and a fleet of minibus electric vehicles as part of this plan. Miami Beach should explore this opportunity to determine if it could get support to include Electrowave-related project expenses in the proposed list of projects.

11.5 OTHER SOURCES OF FUNDING FOR ELECTRIC CIRCULATOR SERVICES

While the most likely sources of funds for paying for the operating and capital expenses associated with local electric circulator services have been described above, there are other potential sources of funding from the federal and state governments. The United States Department of Energy (U.S. DOE) and the Florida Department of Community Affairs are involved in promoting alternative fuel programs. These programs deal with all types of fuels, including such alternatives as compressed natural gas, biodiesel, liquefied natural gas, propane, and hydrogen among others, as well as electric propulsion.

The Clean Cities program was initiated by the U.S. DOE in the early 1990s. It began in south Florida in 1993 with the creation of the Florida Gold Coast Clean Cities Coalition by Executive Order of the Governor and a subsequent Clean Cities designation by the U.S. DOE. The Florida Gold Coast Clean Cities Coalition is a public/private advisory board composed of state legislators, local government representatives, federal and state agencies, and private sector representatives dedicated to reducing the region's reliance on gasoline and diesel fuels and improving air quality. The role of the Coalition is to provide a fuel-neutral policy direction to maximize the use of vehicles operating on clean alternative fuels throughout the five county area. This area is composed of Monroe, Miami-Dade, Broward, Palm Beach, and Martin Counties. South Florida Regional Planning Council (SFRPC) staff provides support to the Coalition through a contract with the Florida Department of Community Affairs.

The mission of the Coalition is:

> *"To reduce our dependence on imported oil and improve the environment by creating a sustainable alternative fuel market through the support and promotion of clean fuels."*

The goals of the Coalition are as follows:

- To increase the acquisition and use of alternative fuel vehicles;
- To develop alternative fuel infrastructure;
- To contribute to economic development through the support of alternative fuel industry;
- To promote the benefits of using alternative fuel vehicles; and
- To gain legislative support and funding for alternative fuel vehicle programs.

Since its inception, the coalition has increased the number of alternative fuel vehicles being used in the five-county region by 16 percent every year. They have also increased the number of alternative refueling facilities, increased their number of stakeholders by 50 percent, and sponsored the first statewide alternative fuel conference in February 1999.

The Miami Beach TMA is a member of the coalition, as are the City of North Miami Beach, the Miami-Dade County Department of Environmental Resources Management.

There are now as many as 1,700 alternative-fueled vehicles in South Florida (including vehicles in eight police fleets). The majority of these vehicles have been converted to run on compressed natural gas (CNG) or propane. However, while the Coalition is fuel-neutral in terms of the use of alternative (other than gasoline and diesel) fuels, with the presence of EV Ready Broward, there is increasing interest in

electric and electric-hybrid vehicles.

The Clean Cities Coalition (CCC) is committed to tying to find funding for alternative fuel projects. They also help with writing grant proposals and initiating demonstration projects. Grants are available from a few sources on a periodic basis. Units of local government including, but not limited to, cities, towns, counties, school boards, airport authorities, transit agencies, and designated 501(c)(3) organizations are eligible to submit proposals for various grants managed by the Coalition. In order to receive assistance in these matters, the proposing agency must become a member of the Coalition, easily done through the adoption of a "Memorandum of Understanding" that serves as a non-binding agreement to the principles of the National Clean Cities Program.

There have been a number of programs that proposers in South Florida pursued in the recent past. One was the Gold Coast Clean Cities Alternative Fuel Mini-Grant Program. A total of $60,000 was available on a first-come, first-served basis. Grantees could receive up to $25,000, matched on a dollar-for-dollar basis. Funds may be used for alternative fuel projects that make a positive contribution to the environment, the health, welfare, and quality of life in the applicant's community, or in reducing reliance on petroleum. The highest priority was given to proposals dealing with mass transit projects.

Another program managed by the Coalition is an alternative fuel vehicle rebate program. During the year 2000, $31,250 in funding was provided to local fleets for the purchase of alternative fuel vehicles (AFVs). Nine local fleets received 25 rebates, which included seven rebates for dedicated AFVs and 18 for bi-fuel AFVs. By fuel type, the AFVs included 22 compressed natural gas vehicles (7 dedicated/15 bi-fuel) and three bi-fuel propane vehicles. Dedicated AFVs were eligible for a $2,000 rebate per vehicle and bi-fuel AFVs were eligible for a $1,000 rebate per vehicle. Funding for this program was from a U.S. DOE grant with matching funds from the SFRPC. The rebate program will continue for the next three years. However, future rebates will only be available to dedicated AFVs using compressed natural gas, propane or electricity for fuel. Rebates will be $2,000 per vehicle and will be applied for through automobile dealerships. This program as currently structured would not apply to electric vehicle minibus purchases.

The Coalition also manages another program that is primarily funded by the U.S. DOE and EPA dealing with "Brownfields." These are areas that have been subject to any number of environmental degradations and are now eligible for federal funds to enhance improvements, which can include infrastructure and services. The SFRPC has a list of the eligible sites that could serve as electric vehicle servicing sites. There is also a "Small Bus Loan" program that encourages private companies to secure inexpensive financing to buy alternative fuel vehicles, and then get tax credits to help further reduce their costs.

Each county in the state is responsible for a source of funds that represents reconciliation for environmental violations. Representatives of any study areas noted in this report may wish to contact Miami-Dade's Department of Environmental Resources Management to determine if such funding could be made available for transportation-related improvements.

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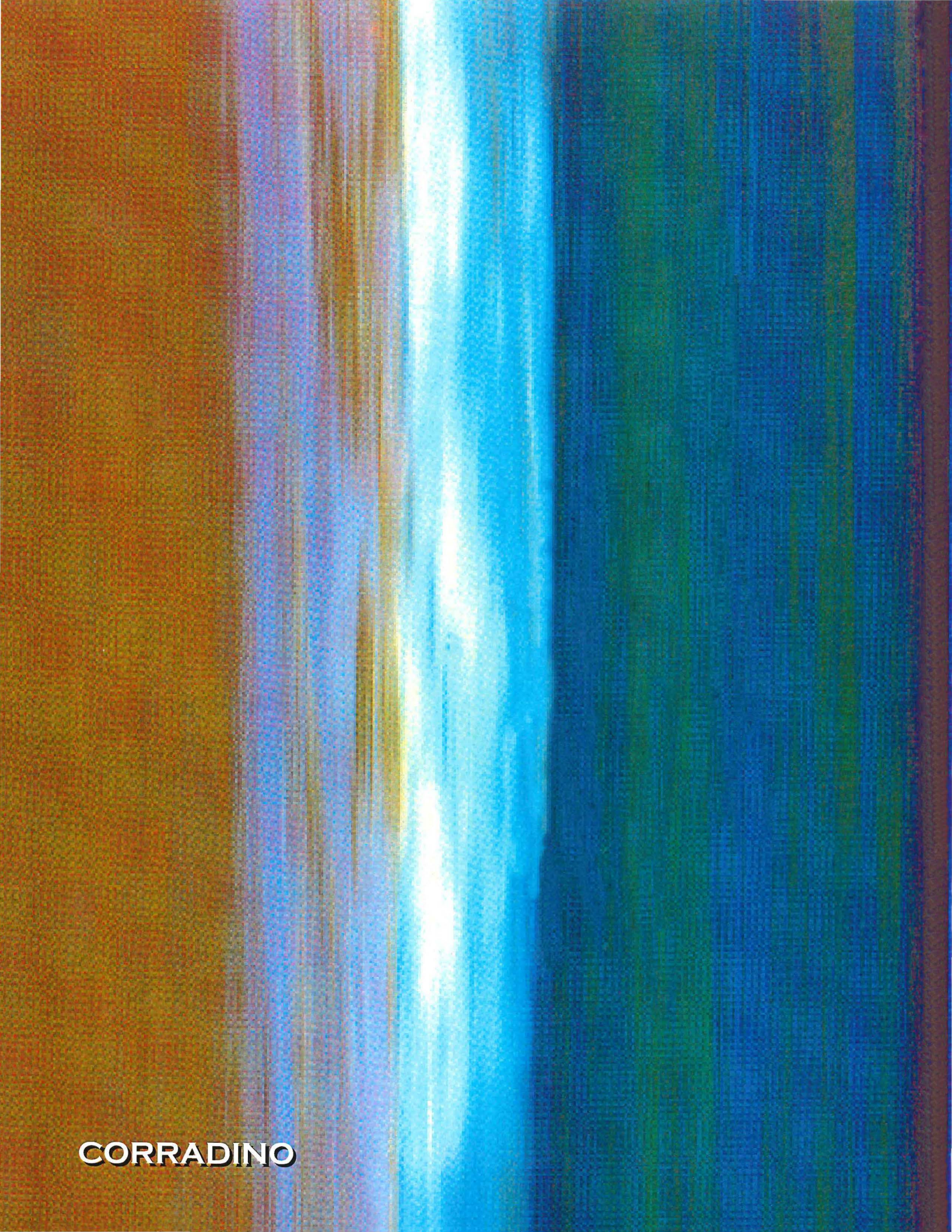
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