



City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov

COMMISSION MEMORANDUM

TO: Mayor Dan Gelber and Members of the City Commission

FROM: Jimmy L. Morales, City Manager

DATE: May 16, 2018

SUBJECT: **DISCUSSION ON THE CITY'S PARTICIPATION IN ONE OR MORE DEMONSTRATION BUS EXPRESS RAPID TRANSIT (BERT) PROJECTS IN COLLABORATION WITH THE MIAMI-DADE TRANSPORTATION PLANNING ORGANIZATION AND MIAMI-DADE COUNTY.**

BACKGROUND

The Miami-Dade County Strategic Miami Area Rapid Transit (SMART) Plan contains six (6) Rapid Transit Corridors and nine (9) Bus Express Rapid Transit (BERT) routes for Miami-Dade County.

The SMART Plan envisions one (1) Rapid Transit Corridor from Downtown Miami to the Miami Beach Convention Center via the MacArthur Causeway and three (3) BERT routes from the mainland to Miami Beach. The BERT routes originate from the Golden Glades Intermodal Center, Civic Center, and Downtown Miami. The Beach Corridor Rapid Transit Connection is a long-term (5+ years) project, because it is considering rail technology and Federal funding. Full BERT service with enhanced stations and other amenities is a medium term (2-4 year) project. The Downtown Miami BERT route (Beach Express South) would be eliminated with the implementation of the Beach Rapid Transit Corridor. BERT service consists of enhanced branded buses operating limited stop service on shoulders or dedicated transit lanes, where feasible, to reduce travel time and help ensure service schedule reliability.

On April 26, 2018, the Miami-Dade Transportation Planning Organization (TPO) unanimously approved Resolution #14-18 endorsing the identification and implementation of demonstration projects that advance elements of the SMART Plan. At the City Commission's Transportation Workshop held on April 27, 2018, the Commission discussed potential collaboration with the TPO to advance one or two BERT routes connecting to Miami Beach. One option discussed was connecting Miami International Airport along the Julia Tuttle Causeway to Mount Sinai Medical Center and the Miami Beach Convention Center. Another option was a BERT route connecting the Convention Center to Downtown Miami via the MacArthur Causeway. The target market would be the Miami Beach workforce and visitors.

On May 2, 2018, the TPO announced the SMART Demonstration Projects Cycle for Fiscal Year

2019. A local match minimum pledge of 50% of the estimated total project cost is required of all applicants. Only projects that propose a new service or new facilities are eligible. Any new trolley route deployed in connection with a BERT demonstration project would also be eligible for SMART Plan Demonstration Project funds.

There is the potential for City of Miami Beach and Miami-Dade County Department of Transportation and Public Works (Miami-Dade County) to jointly apply to the TPO SMART Plan Demonstration Project program for one or more potential BERT routes serving Miami Beach. The benefit of this program is that this allows BERT implementation in the very near term, perhaps even prior to the end of calendar year 2018. Miami-Dade County used the following framework to develop potential projects for the SMART Demonstration Program:

- 1) Project should be implemented quickly.
- 2) Projects should be as cost efficient as possible.
- 3) Ridership should be as high as possible.
- 4) People who work on Miami Beach are the target market.
- 5) Projects should use as much existing infrastructure as possible.
- 6) Infrastructure should be available to run the service.
- 7) New service only was considered, as required by the funding program.

The application and award dates are:

- Applications submission by May 21, 2018.
- TPO Adoption of recommended BERT Demonstration Projects at the June 21, 2018 Miami-Dade TPO meeting.

ANALYSIS

The TPO SMART Demonstration Project program funds new service for three (3) years and requires a 50/50 match. After three (3) years, should the service be deemed feasible to continue, funding the service would be the responsibility of the Miami-Dade County Department of Transportation and Public Works.

Potential Routes

Three (3) BERT routes have been recommended for potential consideration for submission to the TPO SMART Demonstration Project: Beach Express North, Beach Express Central, and Beach Express South. All 3 of these routes are considered to be new service.

- Beach Express North: serves Golden Glades Intermodal Center, Earlington Heights Metrorail Station, and the Miami Beach Convention Center via the Julia Tuttle Causeway.
- Beach Express Central: serves Civic Center Metrorail Station, Mount Sinai, and the Miami Beach Convention Center via the Julia Tuttle Causeway.
- Beach Express South: serves Downtown Miami and the Miami Beach Convention Center via the MacArthur Causeway.

Annual operating costs and three (3) year operating costs over the life of the demonstration projects are noted below. The Miami-Dade Transit cost estimate table for all 3 BERT services is included in Attachment A along with the route maps and service plans, and is also summarized below.

Annual Operating Costs

Route	Annual Operating Cost			Three Year Operating Cost		
	Total	Miami Beach (50%)	Miami-Dade TPO (50%)	Total	Miami Beach (50%)	Miami-Dade TPO (50%)
Beach Express North	3,440,000	1,720,000	1,720,000	10,320,000	5,160,000	5,160,000
Beach Express Central	2,000,000	1,000,000	1,000,000	6,000,000	3,000,000	3,000,000
Beach Express South	5,280,000	2,640,000	2,640,000	15,840,000	7,920,000	7,920,000

Service Plan

Route	Weekday Service Hours	Peak Service Frequency ¹	Off-Peak Service Frequency	Maximum Weekday Daily Person Capacity CNG	Maximum Weekday Daily Person Capacity Articulateds	Service Area Residents (1/4 mile)	Service Area Jobs (1/4 mile)
Beach Express North	5AM to Midnight	10	20	3,440	8,600	11,544	9,064
Beach Express Central	5AM to Midnight	10	20	3,440	8,600	9,373	14,650
Beach Express South	5AM to Midnight	10	N/A	4,560	11,400	8,166	33,965

¹ Peak hours for all routes are 7 AM to 9 AM and 4 PM to 7 PM.

PROPOSED BUSES

BERT service would use either articulated buses or new Compressed Natural Gas (CNG) buses. The capacity of the articulated buses is 100 people, with seating for 60 passengers and standing room for 40. The capacity of the new Compressed Natural Gas (CNG) buses is 40 passengers. Pictures of the newly arrived CNG buses are included in Attachment D. The BERT buses will be equipped with technology components to make the demonstration service more convenient and reliable, including transit signal priority (to reduce delays at signalized intersections), wi-fi, and real-time next bus arrival and real-time parking availability at the termini and major transfer points.

Miami-Dade County had previously purchased the new CNG buses for replacement of older buses but would use them instead for the BERT demonstration projects, thereby providing the capital match for the grant.

DEDICATED LANES/BUS ON SHOULDERS

Critical to the success of any BERT project for Miami Beach is the ability to operate in a dedicated lane and not have to operate in mixed traffic. Potentially, BERT service could run on the existing causeway shoulders. Miami-Dade Transit has an agreement with the Miami-Dade Expressway Authority (MDX) to allow bus-on-shoulder service along MDX corridors. Miami-Dade Transit already runs buses on shoulders along SR 874 and SR 878. There are plans to start service on shoulders on SR 836.

Adapting the Julia Tuttle Causeway shoulders for BERT service is feasible in the short-term. The Florida Department of Transportation (FDOT) has committed to partnering with all parties to implement any necessary improvements to allow use of the shoulder for the SMART BERT operation on the Julia Tuttle Causeway. Any required improvements will be implemented on an expedited schedule with the coordination of all parties.

The use of the MacArthur Causeway shoulders would be more challenging than the Julia Tuttle Causeway, as the shoulder is not continuous, existing drainage structures are obstructing the shoulder, and extensive infrastructure work would be required to modify the shoulder to be suitable for BERT operation. Further, BERT Express South Service may be difficult during the demonstration project timeframe because an eastbound and westbound lane may be out of

service due to an FDOT project on the MacArthur Causeway. An FDOT bridge rehabilitation project along the MacArthur Causeway will close at least one (1) lane of the causeway each way for approximately one (1) year. This project will focus on the eastern bridge which connects the Mac Arthur Causeway to 5th Street and Alton Road.

OTHER INFRASTRUCTURE

In addition to dedicated lanes, BERT projects typically include the following infrastructure:

- Level boarding which require raised sidewalks to meet the first bus step
- Enhanced bus facilities, particularly at major transfer points
- Signalization improvements to provide automatic green time when a bus approaches a signal

Minimal infrastructure improvements would be in place for the BERT demonstration project.

Major transfer points are envisioned at Mount Sinai and the Miami Beach Convention Center (MBCC)/City Center area. For Mount Sinai, the goal is to use existing stops near or at the existing bus and trolley stops. At MBCC, the approved site plan for 18th Street just west of Convention Center Drive, north of City Hall, includes two (2) bus bays on the north side of 18th Street. This is adjacent to but not within the proposed park. This BERT demonstration project would use these 2 bus bays.

Access to and from Mount Sinai Medical Campus

The access to and from Mt Sinai can be difficult. Congestion in the morning peak causes substantial traffic congestion as drivers wait in the long lines to enter the Mount Sinai complex, both at the northbound left turn from Alton Road into Mount Sinai and the 41st Street and Alton Road lights into Mount Sinai from the east. Buses using the existing access routes may wait a long time to enter Mount Sinai. An alternative may be access from the shoulders, or queue jump technology. Staff will work closely with Miami-Dade Transit to evaluate appropriate options as the details of the access to Mount Sinai are proposed.

Access to the mainland from Mount Sinai can also be difficult. FDOT is working on an enhancement in the vicinity of Alton Road and 43rd Street, proposing to provide an additional lane (for a total of two (2) lanes) on the westbound slip ramp from Mount Sinai to Julia Tuttle Causeway, thus increasing the capacity leaving Miami Beach, particularly leaving from Mount Sinai. Given this project will improve access from Mount Sinai to westbound Julia Tuttle Causeway for the Beach Express North service. The City and the TPO will encourage FDOT to advance this proposed improvement as part of this BERT demonstration project.

WORKFORCE MARKET AREA

Many people commute to Miami Beach to work in the hotel industry and at Mount Sinai. Heat maps showing the commute origins for these trips are depicted in Attachments B and C, respectively. According to a June 2016 survey by South Florida Commuter Services, the majority of the hotel employees who responded to the survey live in Miami Beach, and east of I-95 from the Julia Tuttle Causeway to the north Miami-Dade County line, with additional clusters in the Pembroke Pines and Miami Lakes areas. Based on the survey data by Miami-Dade County, Mount Sinai employees are clustered in Middle Beach, Miami Springs, Miami Shores, North Miami, Golden Glades, and eastern Miramar.

Miami-Dade Transit Bus Ridership Trends

Potential ridership of the BERT routes could be impacted by current Miami-Dade Transit bus ridership trends. Between FY 2016 and FY 2017, Miami-Dade Transit bus ridership on Miami Beach declined 18.56%, based on Miami-Dade Transit Ridership numbers. Miami-Dade Transit routes specifically crossing the causeways declined as well:

- 79th Street Causeway: -13.6%
- Julia Tuttle Causeway: -15.5%
- MacArthur Causeway: -20.17%

Some of the trips on these routes may have been trips on the portions of these routes internal to Miami Beach which may have been diverted to more frequent, convenient and free trolley service. None-the-less, based on national trends, the decline in transit ridership may be attributed to a rise in car sharing programs, low prices for fuel, and high levels of car ownership resulting from a strong economy.

PRIORITIZATION OF POTENTIAL ROUTES

Using the discussion points of this memo, the three new potential Miami Beach BERT demonstration routes were evaluated and ranked, with 5 being “strongly meets the evaluation criteria” and 1 being “not meeting the evaluation criteria well”.

The Beach Express North route ranked highest due to its combination of moderate cost, connection to multiple major employment centers, potential ridership, and ease of implementation. Potentially, Miami Beach Trolley or Miami-Dade Transit connections from the MBCC to the South Beach area could be enhanced.

While the Beach Express Central route is competitive, it does not connect well to the commute origins of people who work on Miami Beach.

The Beach Express South project may not work as east bridge repair work will shut down at least one lane of the MacArthur Causeway in each direction for approximately one year during the three month demonstration period, and extensive work is required to allow buses to run on shoulders.

The table below depicts the scoring and ranking for each of the three potential Miami Beach BERT demonstration projects based on the evaluation criteria.

Criteria	Beach North		Beach Central		Beach South	
Implemented Quickly	Yes	5	Yes	5	Yes	5
Low Cost	\$1.72 M Annually	3	\$1.0 M Annually	5	\$2.64M Annually	1
High Potential New Ridership	Existing routes require multiple transfers between the following commute origins and Miami Beach: Pembroke Pines, Miramar, Golden Glades, Miami Lakes, I-95 Corridor	5	Does not connect well to the commute origins of people who work on Miami Beach	2	Existing high frequency bus service provided between Downtown Miami and South Beach, although not express bus	2

Limited Construction Needed	Julia Tuttle Causeway rumble strip removal	4	Julia Tuttle Causeway rumble strip removal	4	Drainage obstructions and non-continuous shoulders	0
Infrastructure Availability	Julia Tuttle Causeway - all lanes and shoulder available	5	Julia Tuttle Causeway - all lanes and shoulder available	5	MacArthur Causeway – multiple lane closures required for approximately one year for east bridge rehab work	0
New Service	Yes	5	Yes	5	Yes	5
Total Score		27		26		13
RANK		1		2		3

Note: 5 = strongly meets the evaluation criteria; 0 = not meeting the evaluation criteria.

If only the Beach Express North BERT route is selected, staff would recommend further discussions with the County to extend the route south past the Miami Beach Convention Center to provide a more direct connection to the Entertainment District.

AIRPORT SERVICE

Modifying the Beach Express North or Central routes to originate at the Miami International Airport would make the Beach Express North and Central routes ineligible for funding through the SMART Demonstration Program due to existing airport service. The SMART Demonstration Project is for new service only.

Miami-Dade Transit Route 150 (Airport Express) already serves Miami Beach, originating at the Miami Intermodal Center located at Miami International Airport, crossing Julia Tuttle Causeway, proceeding along 41st Street, then heading south on Collins Avenue to South Pointe, as shown in the Attachment E. Miami-Dade Transit is evaluating running Route 150 service along the shoulders of SR 112/Julia Tuttle Causeway as a low or no cost enhancement to the existing route at the same time the BERT service is deployed.

POTENTIAL FUNDING

When considering funding sources for the potential BERT demonstration projects, existing Miami Beach policies needed to be carefully considered. Pursuant to Resolution 2006-26341, the City of Miami Beach will use one-time, non-recurring revenue for capital expenditures or one-time expenditures and not to subsidize recurring personnel, operations and maintenance cost.

Because the potential BERT services is a one-time demonstration project program for a defined three year period of time, it meets the intent of the policy and the use of non-recurring revenue is feasible.

These funds were allocated toward the Miami Beach light rail/modern streetcar project in the past as part of the \$36 million funding package. Resolution 2017-29939 allocated the \$36 million funding package more broadly to transportation projects. The \$36 million is comprised of

the following funding sources:

- Concurrency Mitigation funds: \$5 million
- Resort Tax Funds: \$10 million
- City Center Redevelopment Area Non Tax Increment Funds (RDA): \$21 million

Concurrency Mitigation funds are restricted to one-time/non-recurring revenues limited to use for Transportation capital expenditures that increase Transportation capacity, including transit projects. The proposed Miami Beach BERT demonstration routes are intended to divert vehicle trips from the Causeways, thereby reducing congestion.

Resort Tax funds are limited in use for tourism-eligible activities. Given that workers are the target market for this service, the use of Resort Tax funds is not appropriate. In addition, the proposed route only minimally services the RDA, so use of RDA funds is not recommended.

Therefore, \$5 million is available from these funds for a BERT demonstration project.

NEXT STEPS

If awarded funding through the SMART Demonstration Project, the next steps would include:

- Community outreach on the proposed BERT demonstration service during May and June 2018.
- Interlocal Agreement (ILA) execution with Miami-Dade County, TPO, and/or the Florida Department of Transportation.
- Miami Beach budget amendment approval.

The budget amendment and ILA would be heard at the July 25th City Commission meeting.

CONCLUSION

The adopted 2016 Miami Beach Transportation Master Plan was built on a mode share goal and modal prioritization strategy adopted by Resolution 2015-29083 on July 8, 2015, which places pedestrians first; transit, bicycles, and freight second; and private automobiles third. Projects in the Transportation Master Plan are intended to move Miami Beach towards this mode share vision by increasing pedestrian, bicycle, and transit travel.

The potential new BERT demonstration service also has the potential to shift the use of vehicles to transit, particularly for workers commuting to and from Miami Beach. The environmental benefits of the proposed transit service will reduce regional greenhouse gas emissions, and align with Miami Beach's resiliency program and the goals of the 100 Resilient Cities partnership.

The City's Trolley service may need to be modified to accommodate potential BERT demonstration service. The City's Transportation Department staff will work closely with TPO staff to evaluate changes to the City's Trolley route and service plan once the BERT demonstration service plan is implemented.

RECOMENDATION

It is recommended that the Mayor and City Commission authorize the submittal of a joint application with Miami-Dade County to the Miami-Dade TPO SMART Demonstration Project Program, as directed by the City Commission, for the Beach Express North BERT demonstration project. The proposed funding plan is for Miami Beach to provide 50% of the operating costs and the TPO SMART Demonstration Project program to provide 50% of the operating costs. The buses for the service will be provided by Miami-Dade County.

Attachments:

- A - Detailed BERT Route Maps, Service Plans, and Cost Estimates
- B - Hotel Worker Zip Code Analysis
- C - Mount Sinai Zip Code Analysis
- D - Photographs of Miami-Dade Transit CNG Buses
- E - MDT Route 150 Map