Broward Commuter Rail: Preliminary Financial Analysis

January 18, 2022

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Commuter Rail, Miami Dade & Broward-- Background

Positives:

- FDOT and Broward County signed MOU to collaborate on PD&E study (Jan. 2021)
- Corridor closer to urban cores, ridership expected to be greater than Tri-Rail
- Most municipalities on-board to share costs for stations; business community supportive
- Dade County apparently moving forward with their portion (FTA approved Project Development phase for N.E. Corridor)
- Potential synergies/economies of scale with Tri-Rail if SFRTA operates
- Federal funding possible, if project compares favorably with competing grant proposals at national level

Negatives:

- Not included in original Broward Surtax budget
- Not part of present "Broward County System-Wide Transit Study, Planning & Preliminary Design"
  - 26 miles of Light Rail Transit
  - 7 Bus Rapid Transit Corridors
- Governance structure still undefined
- Higher operating costs due to Brightline seeking to maximize track access fees
- New River Crossing: High Cost

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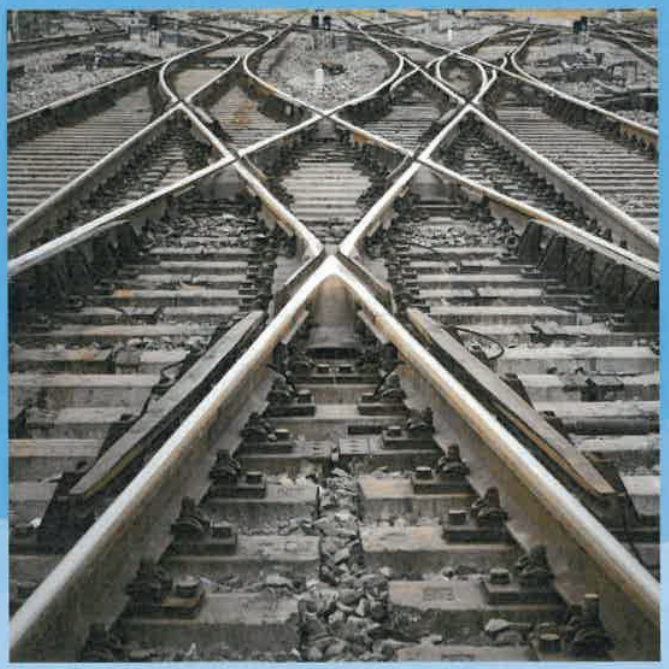
Project Funding & Financing

Sources:

- Federal (competitive grants under FTA New Starts)
- State of Florida
- Local Governments
  - County Government
  - Municipal Governments
    - Special Assessments
    - Tax Increment Financing
    - Joint Development
    - Developer/Impact Fee
- Private Sector
  - Developers (Commercial, Residential)
  - Operators (rail service, parking, others directly interested in business opportunities)



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Property Development Opportunities: Examples from Downtown Miami

- In Sept. 2021, FECI listed its ParkLine Miami property at a price $500 million
  - 90% of units rented
  - Avg. $612,000/unit
  - Residential units above downtown Miami train and multimodal transport hub
- **Blackstone** paid $230 million for the **2** and **3 MiamiCentral** office complex adjacent to ParkLine.
- Miami Dade County's Government Center building is adjacent to Miami Central station & elevated tracks

ParkLine Miami property, located at **100 NW 6 Street**, sits directly above the **MiamiCentral** train station

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Project Funding & Financing

Possible Approaches:

- May exclude New River Crossing (NRC) project from federal FTA New Starts grant application (negative impact to cost effectiveness rating, special "shared benefit," enrichment attributes)…
- … which would necessitate seeking alternative sources of grants and other funding for NRC, once LPA is defined
  - Cost sharing with MDC (PBC in future)
- Pursue joint development opportunities (especially w/ muni's & private developers for stations) to leverage govt. funding and improve cost effectiveness & econ development ratings.
- Confirm County funding sources are adequate to cover gaps in both capital & operating budgets.

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Notes on Cost Estimates used in Model

Capital Cost Estimates: "These numbers can be used for initial financial planning but should not be used for programming as they remain preliminary until the concept design and implementation plan progress further."

- Does not include compensation for required Right of Way/Easements
- Does not include costs of public art and cultural enhancements
- Flood mitigation measures not included in cost estimate of tunnel alternative for New River Crossing (retractable covers for entrances, other infrastructure hardening items)

Operating Cost Estimates: "The O&M cost estimate may be further updated as the operating plan is refined and once the operator of the service is selected."

- Final estimates will depend on agreed cost sharing formula between Broward and Miami Dade

Model and current estimates have not been reviewed nor approved by Broward County's Board of Commissioners

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Preliminary Financial Projections: Operations

Scenario Run Results, Year 5 of Operations (2029 $)			
	Worst Case	Base Case	Best Case
Total Annual Operating Costs	55,981,660	45,527,909	32,200,439
Total Annual Revenue:	11,533,531	13,707,965	13,916,083
Farebox Revenue	7,611,804	9,280,406	9,524,142
Other Revenue	3,921,727	4,427,558	4,391,940
Total Annual Operating Cost Balance	(44,448,129)	(31,819,945)	(18,284,356)
Efficiency:			
Annual Trips	2,027,400	2,534,250	3,041,100
Subsidy (deficit) per Trip (2029 $)	-21.92	-12.56	-6.01
Operating Cost per trip (2019 $)	**18.72**	**12.18**	**7.18**
Cumulative Op Cost Deficit @ 2049 (YOE $)	**(1,126,663,862)**	**(801,430,312)**	**(469,163,943)**

Slightly better than Tri-Rail @ 2019

Among top 1/3 of National Commuter Rail Operations

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A Look at Commuter Rail in the U.S. (2019)

Figure 3: Map of the 31 Commuter Rail Systems in the United States

- **Top 5 according to Operating Cost/Trip:**
  1. Caltrain CA ($7.71)
  2. Denver RTD CO ($8.26)
  3. Frontrunner UT ($8.53)
  4. Sprinter CA ($8.95)
  5. SEPTA PA ($8.98)
- **Florida systems are among bottom 3rd**
  21. Tri-Rail FL ($21.77)

  24. SunRail FL ($30.33)

Preliminary Financial Projections: Capital Costs & Revenue

Capital Expenditures:	Worst	Base	Best
Project excluding New River Crossing (NRC)	763,997,293	565,923,921	509,331,529
New River Crossing CAPEX			
Low-Level Bascule Bridge	369,296,112	273,552,675	246,197,408
Mid-Level Bascule Bridge	683,197,807	506,072,450	455,465,205
High-Level Fixed Bridge	695,507,677	515,190,872	463,671,785
Tunnel	2,803,572,982	2,076,720,728	1,869,048,655
Capital Revenue:	Worst	Base	Best
FTA New Starts Grant (for project excl. NRC)	305,598,917	254,665,764	254,665,764
FDOT Grant (for project excl. NRC)	229,199,188	155,629,078	127,332,882
Other TBD Grant (for New River Crossing):			
Low-Level Bascule Bridge	55,394,417	68,388,169	98,478,963
Mid-Level Bascule Bridge	102,479,671	126,518,112	182,186,082
High-Level Fixed Bridge	104,326,152	128,797,718	185,468,714
Tunnel	420,535,947	519,180,182	747,619,462
Capital Balance:			
Project excluding New River Crossing (NRC)	(229,199,188)	(155,629,078)	(127,332,882)
New River Crossing CAPEX			
Low-Level Bascule Bridge	(313,901,695)	(205,164,507)	(147,718,445)
Mid-Level Bascule Bridge	(580,718,136)	(379,554,337)	(273,279,123)
High-Level Fixed Bridge	(591,181,526)	(386,393,154)	(278,203,071)
Tunnel	(2,383,037,035)	(1,557,540,546)	(1,121,429,193)

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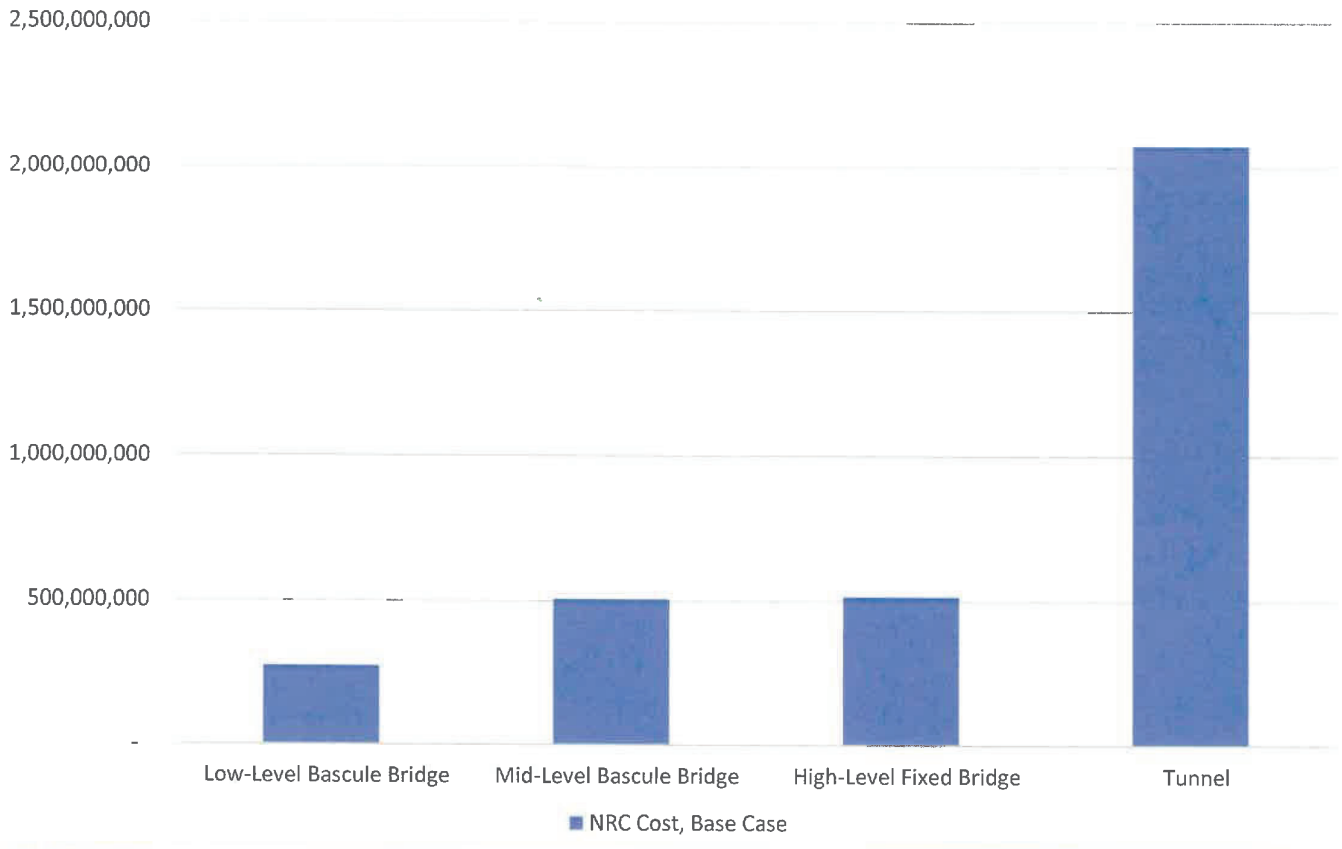
Capital Costs by NRC Alternative, YOE $
(excludes CAPEX of Rest of System)



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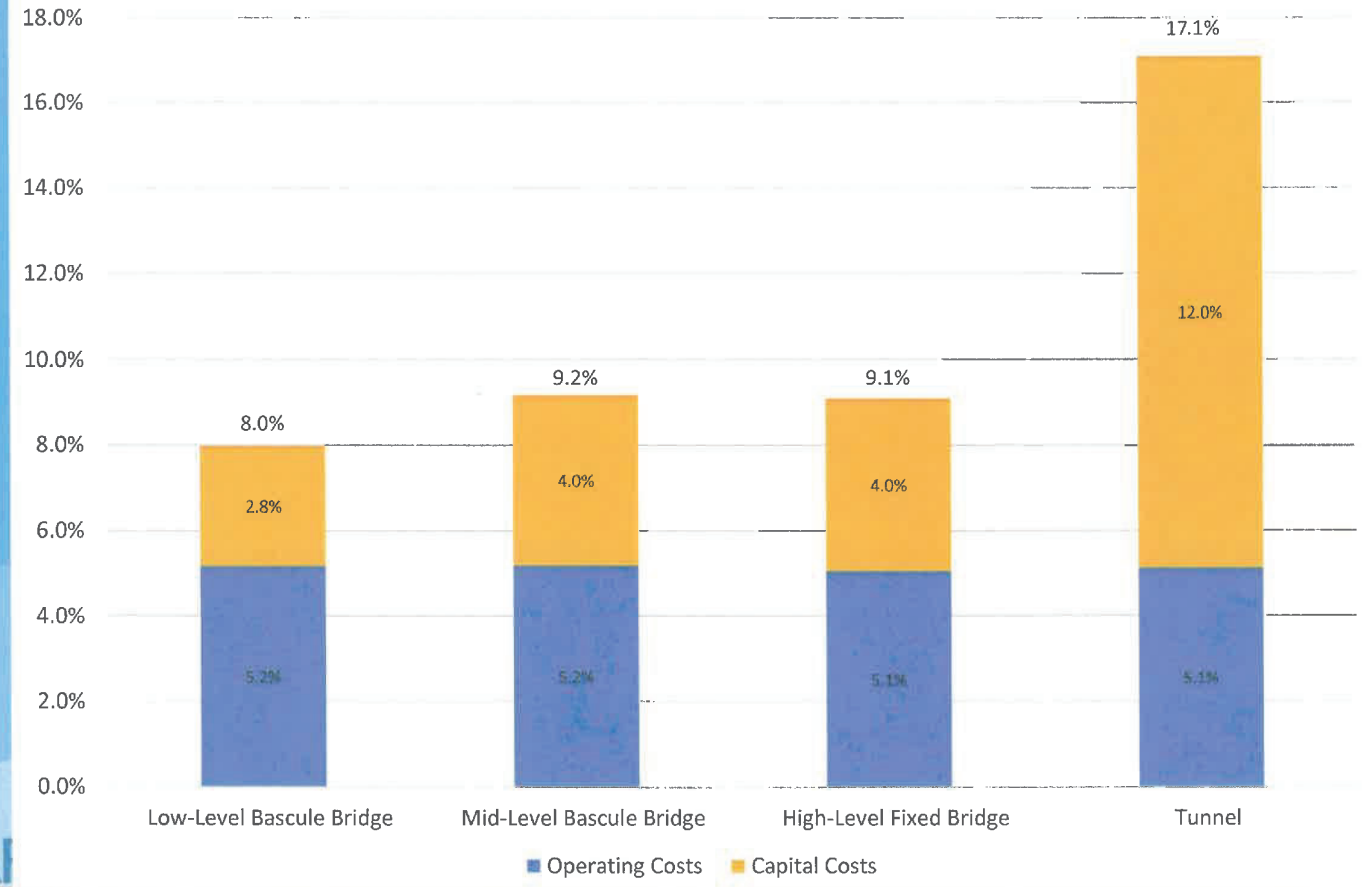
Projected Cumulative Deficits as % of Total Surtax Revenue@ Year 2049: Base Case*



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* These projections have not yet been reviewed or approved by Broward County Board of Commissioners

Analyzing Tunnel Costs

*National Experience**

Project	Year Completed	Cost/Mile ($millions)
No. 7 Subway Extension, NY	2015	1,500
U-Link, Seattle	2016	600
Second Ave. Subway, NY	2018	2,500
East Side Access, NY	Planned 2022	1,800 – 3,000
Purple Line (1&2), Los Angeles	Planned 2025	800
Regional Connector, Los Angeles	Planned 2022	920
Central Subway, San Francisco	Planned 2022	920

Comparison w/ New River Tunnel estimate

Location	Tunnel Cost Range US $ per mile
New York	1.5B – 2.5B
Other parts of U.S. and Australia	600M – 920M
Port of Miami Tunnel	1.0B
FDOT Estimate of New River Crossing Tunnel	505M – 757M (560M base case)

Multiply these cost/mile estimates by 3.25 miles to calculate New River Tunnel cost

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*Source: "Why Tunnels in the US Cost Much More Than Anywhere Else in the World," Paper by Paul Nicholas and Nasri Munfah in Aug. 18, 2020 edition of Tunnel Business Magazine

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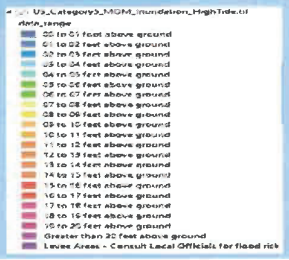
Resiliency Considerations

- Tunnels: more problematic from a resiliency perspective
  - Sea Level Rise, Salt Water Intrusion
  - Hurricanes, storm surges
  - Mitigation possible, but expensive
- Hurricane Sandy flooded NYC's subway system, taking weeks to restore and $ billions in repairs + longer term infrastructure hardening measures
- Bridges can be shut down during severe storms, but normally do not suffer major damages as a result of flooding/storm surge, (unless foundations are unprotected and exposed to strong currents/erosion).



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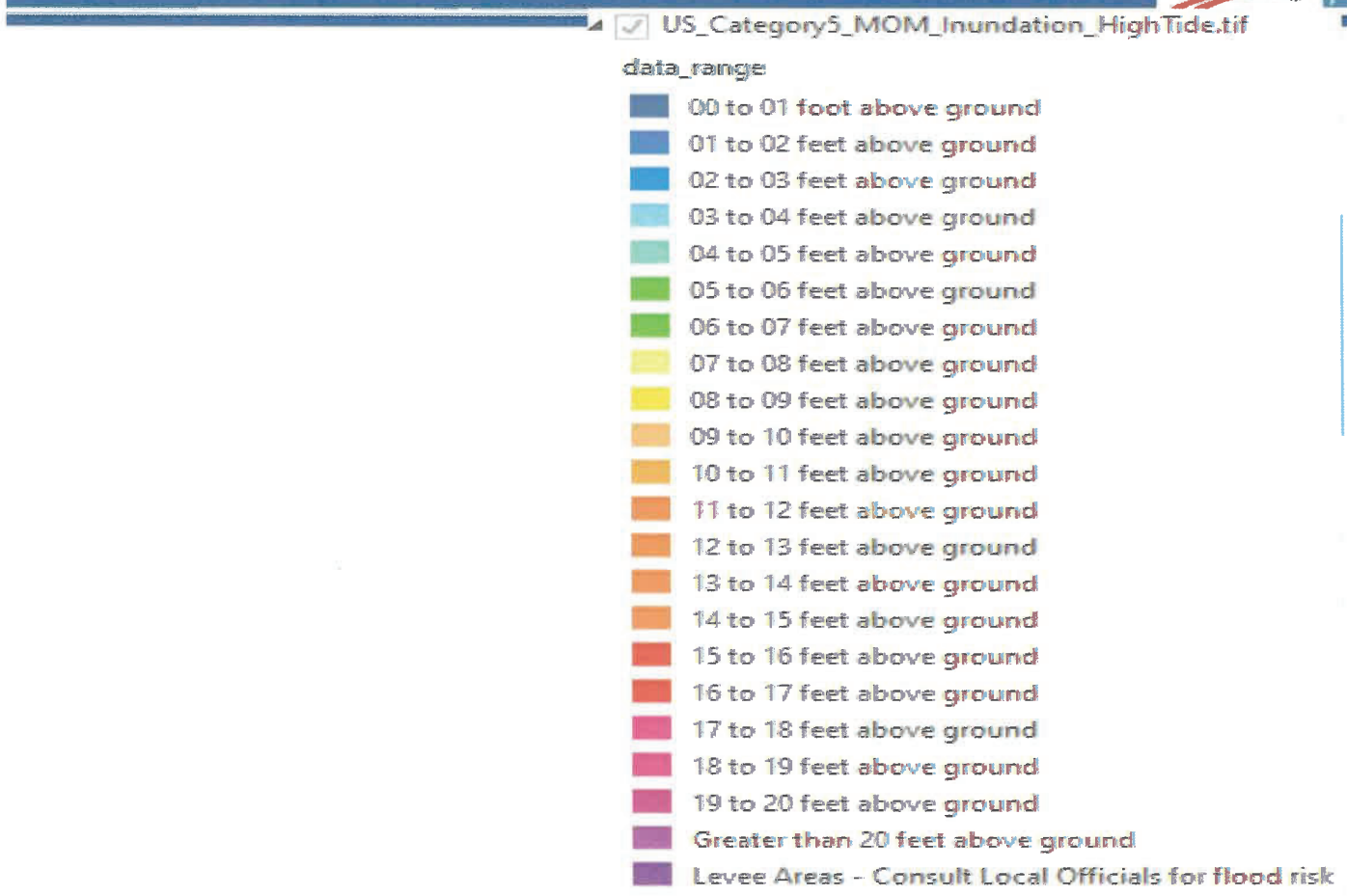
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Levee Areas - Consult Local Officials for flood risk

"Whether it be Boston or San Francisco, they learned not to put sensitive infrastructure under flood levels. For example, in Boston's Big Dig tunnel, the first big flood they had, their air-cooling systems and computer controls were below the water level and got damaged. I put a call in to think about placing any sensitive infrastructure there above flood levels."

-- James Cromar, Deputy Executive Director of Mobility Initiatives, Broward Metropolitan Planning Org.

"We must consider not only the cost of construction, but also the negative externalities imposed on society including the enormous adverse impact on our EXISTING commuters by not addressing Davie and Sunrise boulevards with this proposal... Let's do it in such a way that it has as minimal of an impact on our neighborhoods as possible."

-- Jay Shechtman
Planning and Zoning Board - Member
President - Tarpon River Civic Association

"The only opportunity I see, if we want to modernize and stabilize our train connections in the Atlantic coastal areas, is to go to elevated tracks."

—Dr. Klaus Jacob, geophysicist at Colombia University's Earth Institute, who served on NYC's climate panel from 2008-2019.

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