



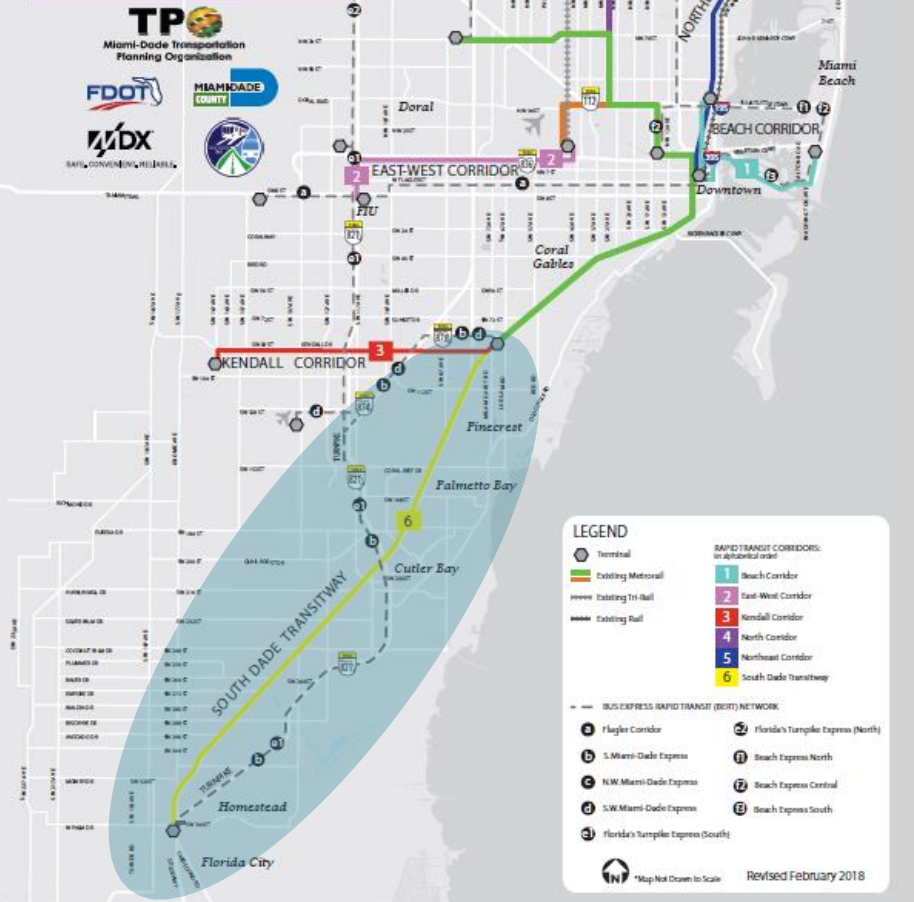
Department of Transportation and Public Works (DTPW)

SOUTH CORRIDOR RAPID TRANSIT PROJECT LPA SELECTION

PREPARED FOR: MIAMI-DADE
TRANSPORTATION PLANNING ORGANIZATION (TPO) BOARD

July 19, 2018

Strategic Miami Area Rapid Transit (SMART) Plan



Six Corridors:

- Beach Corridor
- East-West Corridor
- Kendall Corridor
- North Corridor
- Northeast Corridor
- **South Corridor**

Basic Facts

Length of Corridor

- 20 Miles exclusive transit right-of-way, parallel to US-1

Population

- 89,040 (1/2-mile buffer)
- 326,000 (2-mile buffer)
- Density (population/square mile) = 4,450 based on 1/2-mile buffer
 - Source: American Community Survey 2015

Employment

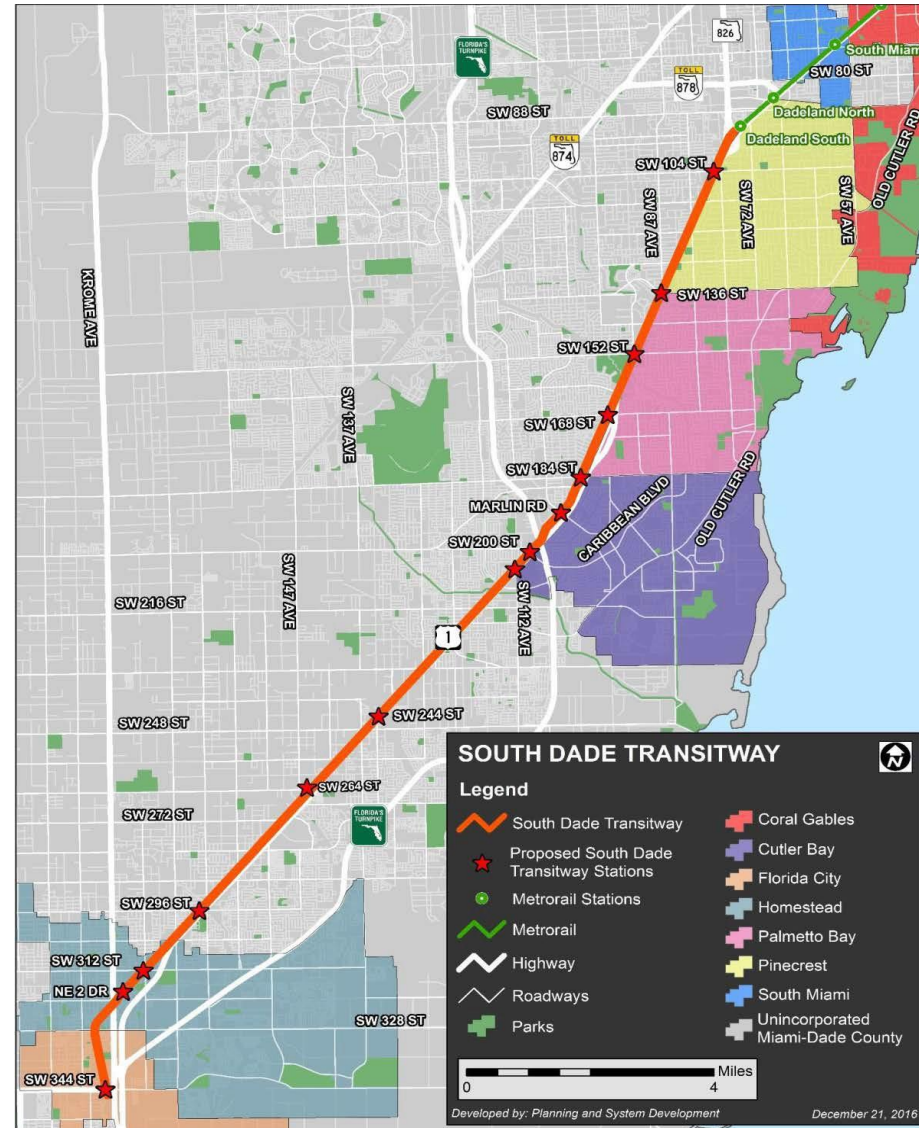
- 55,229 (1/2-mile radius)
- 87,000 (2-mile radius)
- Density (employment/square mile) = 2,760 based on 1/2-mile buffer
 - Source: LEHD Origin-Destination Employment Statistics 2015

Daily Traffic on US-1 (AADT)

- 28,000 to 95,000 vehicles
 - Source: FDOT (2016) at South Terminus of Palmetto Expressway

Transitway Usage Today

- About 13,500 boarding's per day
 - 1,980 Boarding's on RT34 (34A)
 - 730 Boarding's RT39 (34B)
 - Source: Miami-Dade DTPW (April, 2018)



Study Objectives: Evaluate Transit Alternatives



Bus Rapid Transit (BRT)



Heavy Rail Transit (HRT)



Light Rail Transit (LRT)

Eliminated due to equivalent cost to Metrorail at-grade (does not provide one-seat ride)



Connected and Autonomous Vehicle (CAV)

Accommodated as future consideration

What is BRT

- high-quality bus-based transit system
- dedicated lanes
- transit signal preemption
- fast
- comfortable
- cost-effective
- high capacity
- iconic stations
- off-board fare collection
- frequent operations



What is HRT

- existing Miami Metrorail at ground level
- electrically powered
- high capacity
- high speed
- multi-car trains on fixed rails
- exclusive right-of-way
- sophisticated signaling
- high platform loading



BRT/HRT Element Comparison



Element	BRT	HRT Metrorail (at-grade)
Flexibility	✓	✗
Shorter Headways	✓	✓
Travel Time	✓	✓
Crossing Gatearms	✓	✓
Express Routes	✓	✗
Level Boarding	✓	✓
Off-board Fare Collection	✓	✓
Rail One-Seat Ride	✗	✓

Why BUS RAPID TRANSIT ?

- Same or better travel times than Rail (with crossing gates)
- Right sized solution for projected ridership
- Greater Flexibility than Rail (vehicles can go off corridor)
- Federal & State Funding Opportunity
- Helps Corridor Increase Ridership towards future rail
- Implements elements needed for rail
- Iconic Stations that encourage Economic Development and Transit Oriented Development (TOD)
- Affordable (20% of the capital cost of Rail and 25% of the O&M)
- Begin Operation in 3 to 4 Years
- Minimal impact during construction

Meetings:

- Agency Kick-Off Meeting held on May 5th, 2017
- Public Kick-Off Meeting held on May 31st, 2017
- Corridor Workshops – 3 meetings (North, Central and South)
- Meetings with stakeholders and community groups (11 meetings)
- Project Advisory Group (PAG) – 4 meetings
- One-on-One Meetings (28 meetings)
- Presentations to each Municipality – (10 meetings)
- TPO Committee & CITT Presentations– (6 meetings)
- Alternatives Workshops – 3 meetings (North, Central and South)
- Project email, website, and social media



City Resolutions of Support:

- City of Pinecrest
- City of Homestead
- City of Florida City

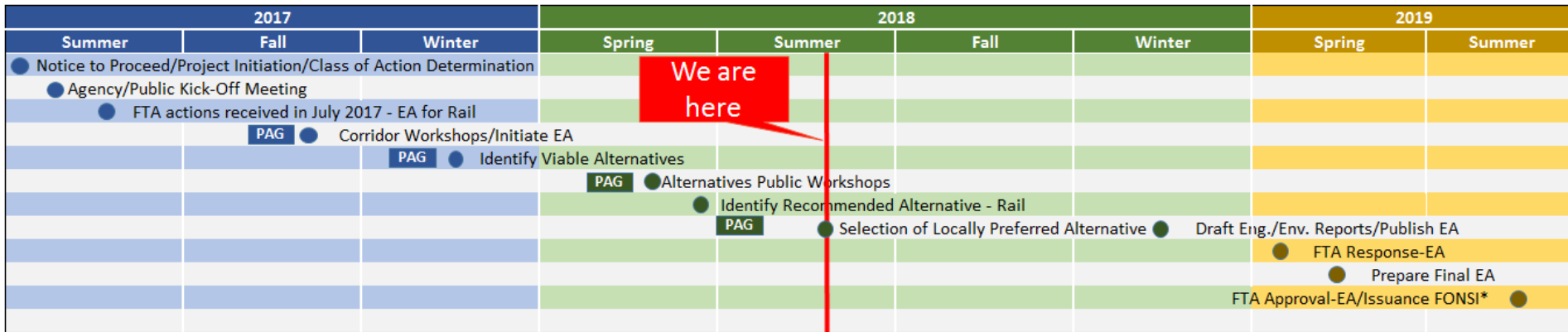
Others:

- Latin Builders Association (LBA)

NEPA Study Schedule: Rail vs. Bus Rapid Transit

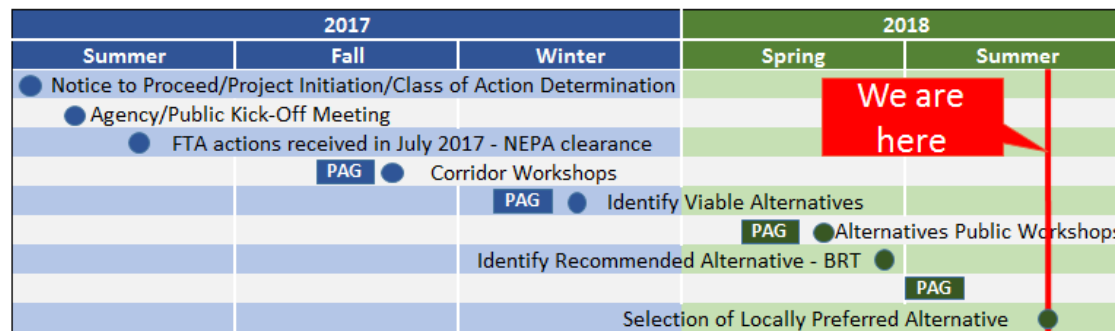


Typical Schedule Rail¹



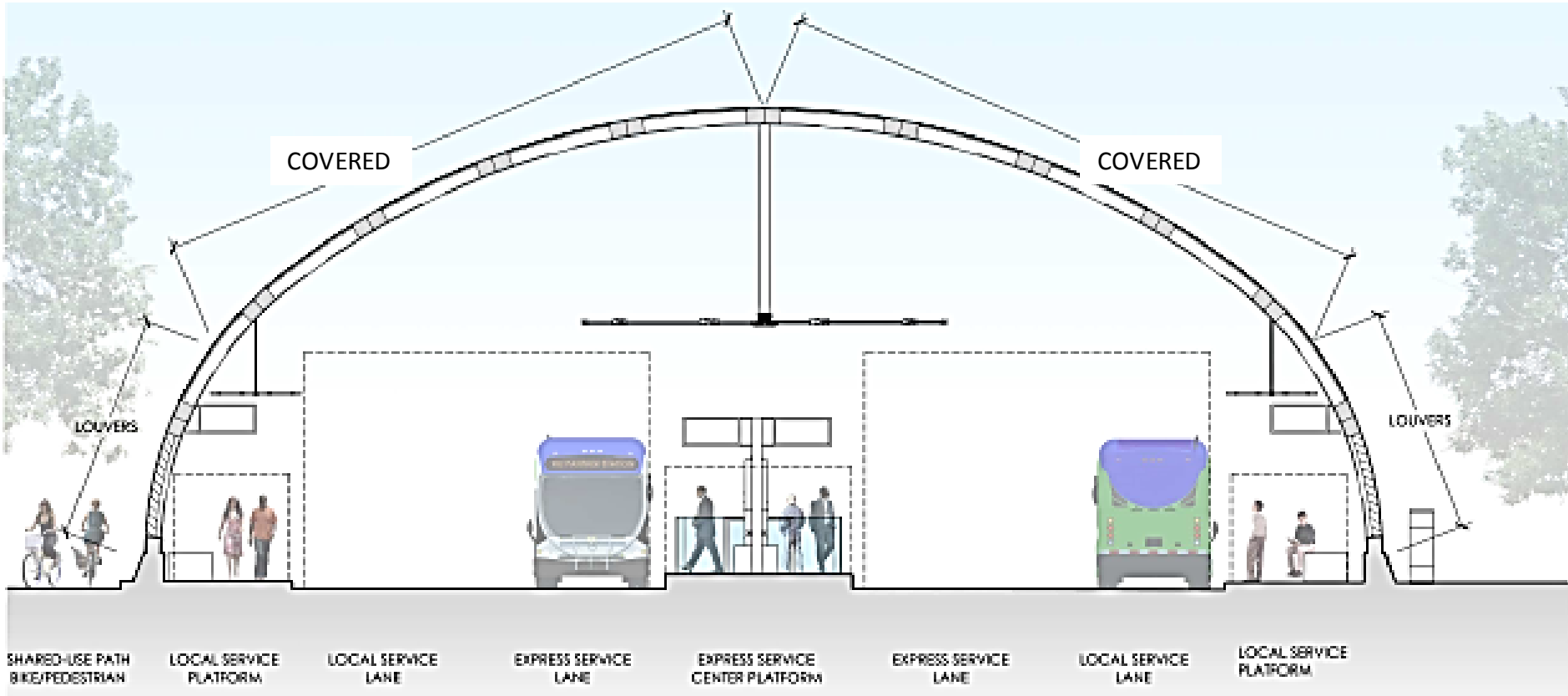
¹DTPW has received EA Class of Action determination for Rail (Begin HRT service in approximately 8 to 10 years)

Typical Schedule BRT²

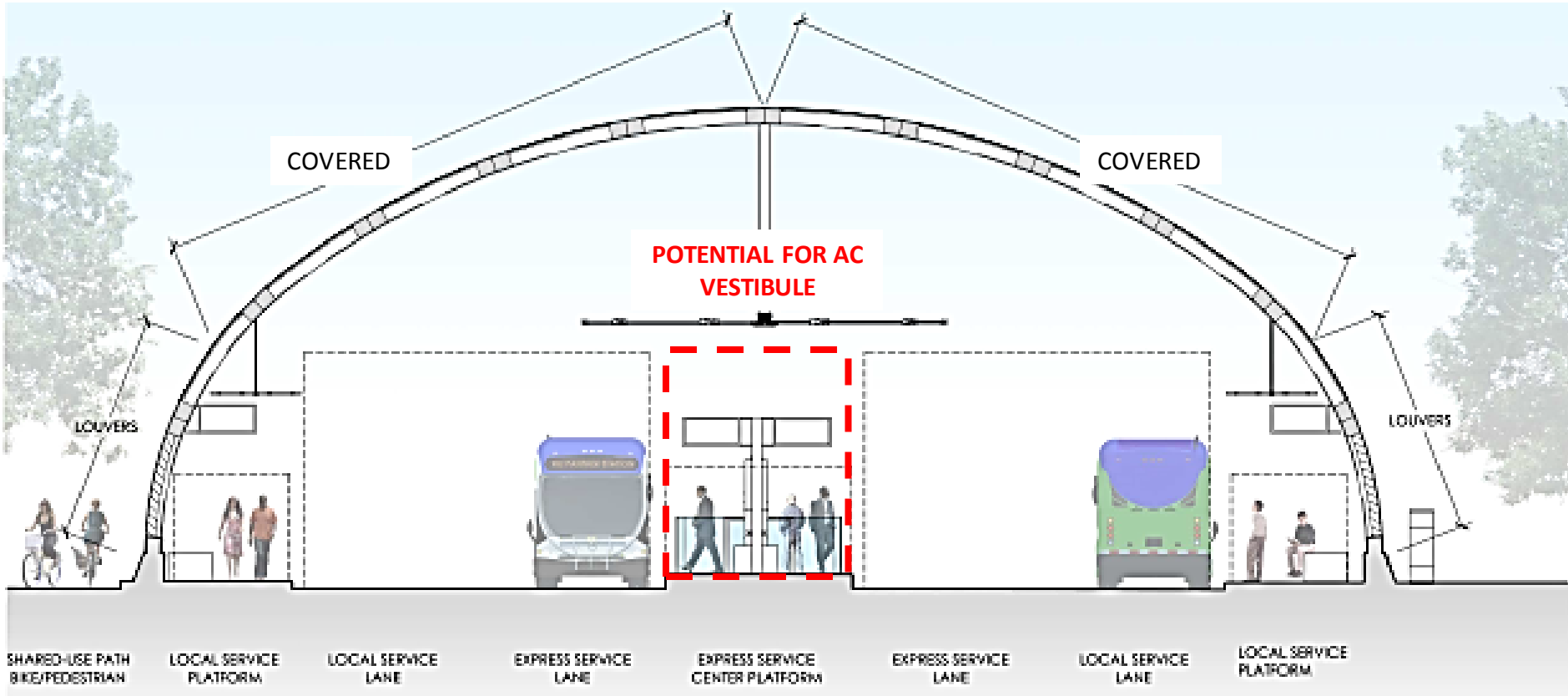


²DTPW has received NEPA clearance from FTA for BRT (Begin BRT service in approximately 3 to 4 years)

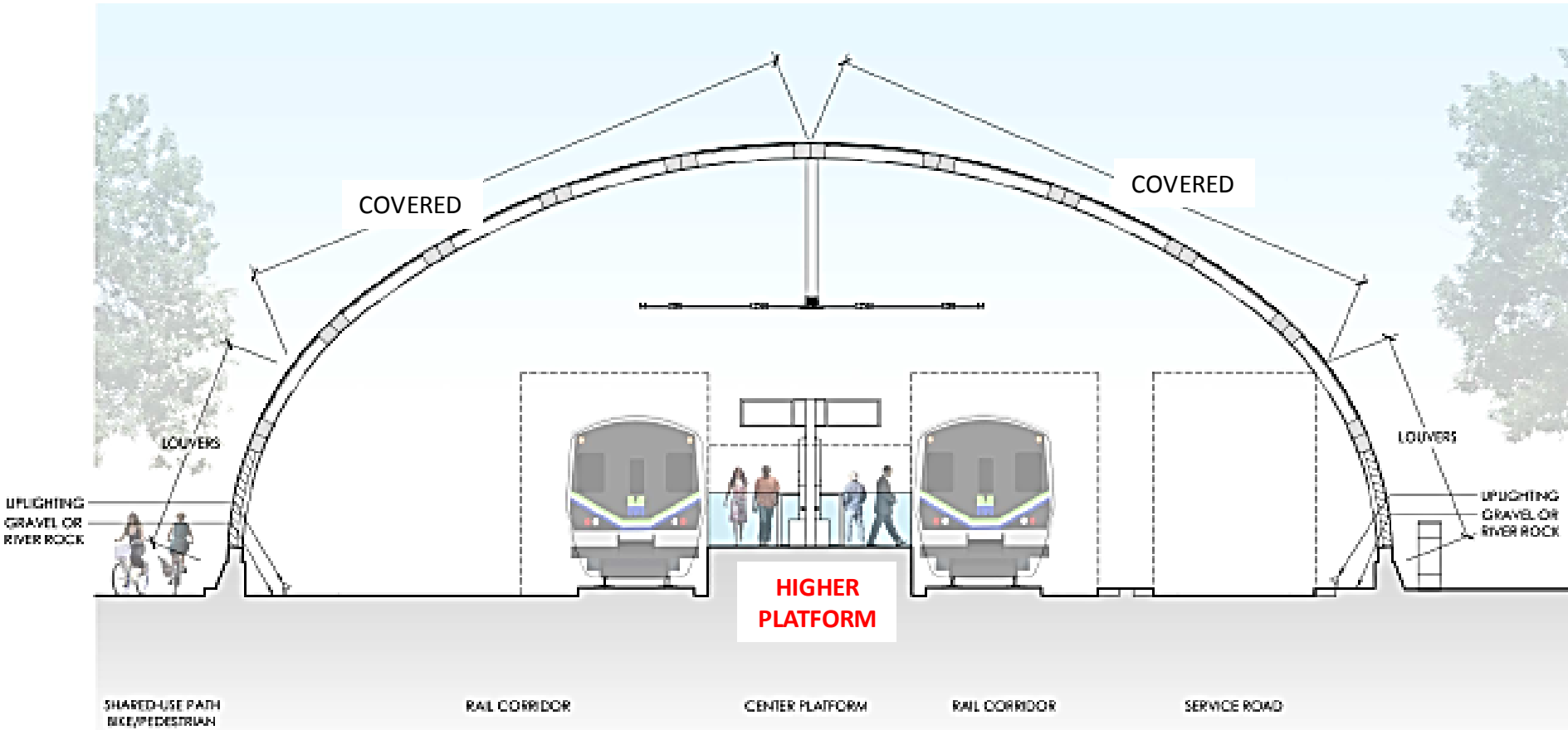
Typical Alternatives - BRT



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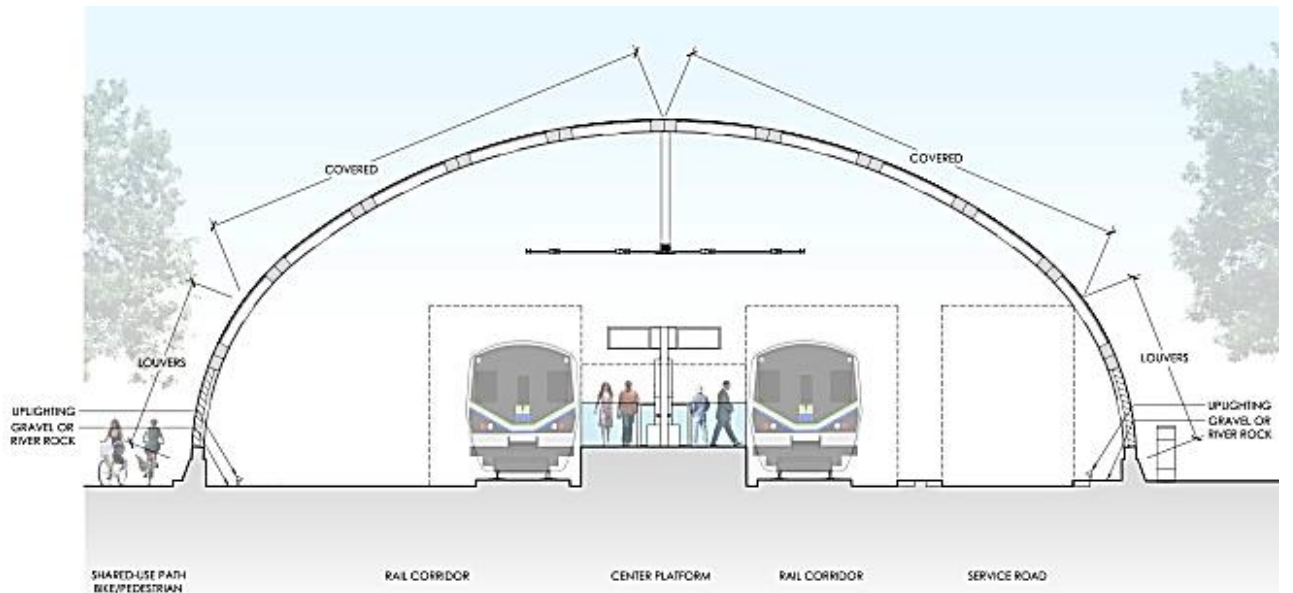
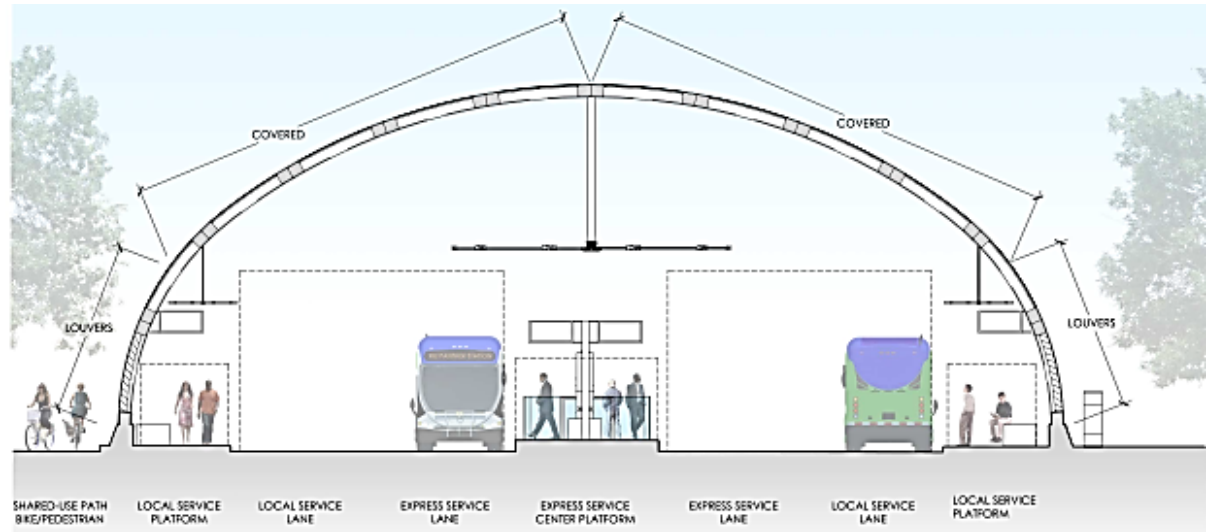


Typical Alternatives - HRT

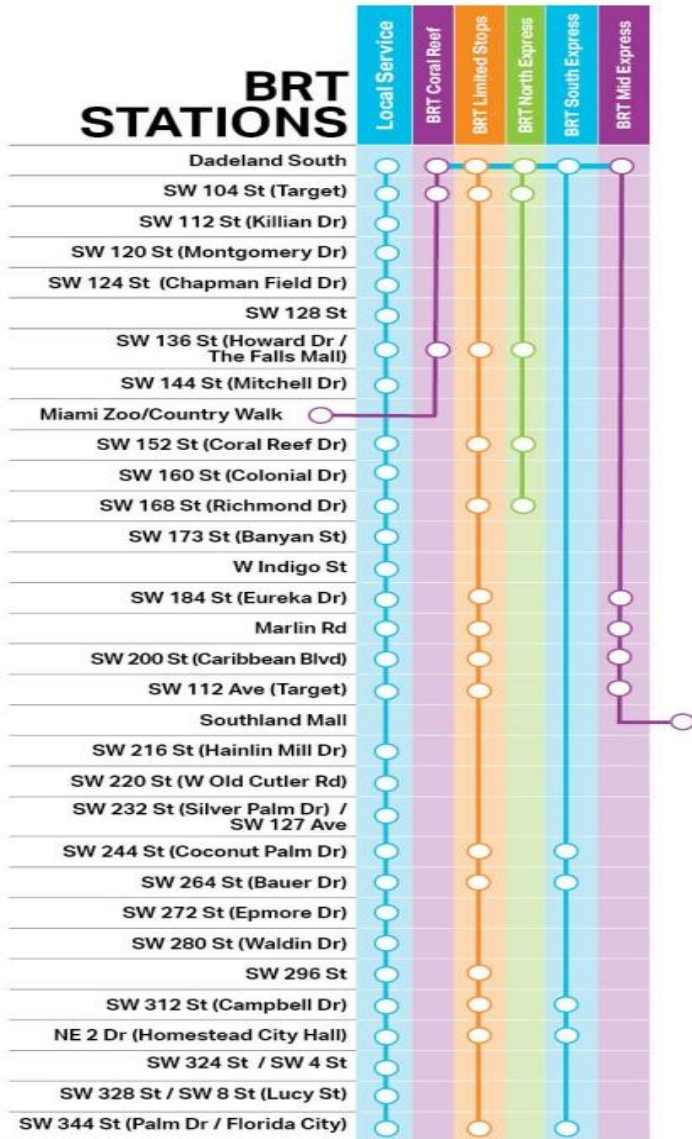


Typical Alternatives

When converting to rail, stations would be lengthened and platform will be raised



Proposed Operation Plans



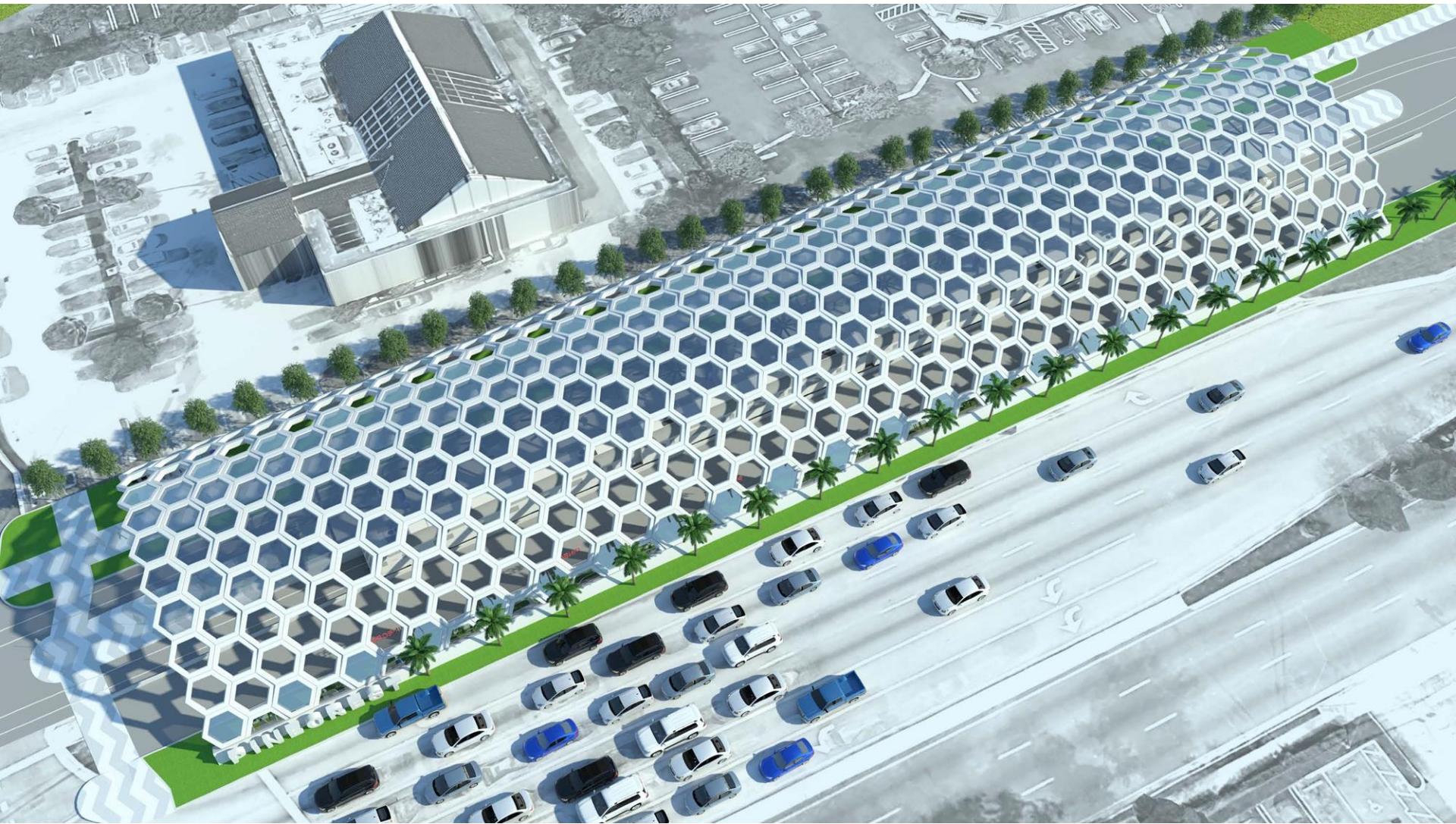
Preliminary Station Renderings (BRT)



Preliminary Station Renderings (BRT)



Preliminary Station Renderings (HRT)



Preliminary Station Renderings (BRT)



- ❖ Glass Vestibule potential for A/C
- ❖ Electric Buses can be used to service the corridor

Preliminary Station Renderings (HRT)



SMART Plan Cost/Funding Available



Mode	Capital Cost (\$2017 Million)	Yearly O&M (Million)*	O&M Pro Forma Impact Through 2057**	New Transit Ridership by 2040
Bus Rapid Transit	\$243	\$15	\$865M	10,000 to 11,000
High Rail Transit (at-grade)	\$1,332	\$67	\$4.2B	16,000 to 18,000

* O&M costs do not include circulator/feeder buses that would be required for HRT to serve all original stations

** Net of Fare Box Revenue

- Both BRT and rail at-grade need close coordination with FDOT to manage crossing gate closures.
- An initial traffic impact analysis has revealed that these impacts can be successfully managed through a combination of adaptive traffic signal technology and traffic signal timing revisions.
- Off-peak direction buses can use the Turnpike to return to Florida City faster to pick-up peak direction passengers, as they do today for Route 34.

Successful BRT Projects

BRT Line	Length (miles)	Year Opened	Daily Ridership
1 st /2 nd Avenue Select Bus Service - New York, NY	9	2010	45,000
Fordham Road Select Bus Service - Bronx, NY	9	2010	35,000
Orange Line - Los Angeles, CA	18	2005	30,000
Silver Line - Boston, MA	6.4	2010	26,000
East Busway - Pittsburgh, PA	9.1	1983	25,000
Vermont Avenue - Los Angeles, CA	12.5	2004	22,000
SDX line - Las Vegas, NV	9	2010	14,000
Health Line - Cleveland, OH	9.4	2008	14,000
Silver Line - Los Angeles, CA	26.7	2009	14,000
Emerald Express - Eugene, OR	4	2007	11,000
Metrovía – Guayaquil, Ecuador	28.2	2006	430,000

BRT Examples



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Federal Capital Investment Grant (CIG) Process



SMALL STARTS (BRT)

- BRT **\$250 Million**
- NEPA Complete
- Locally Preferred Alternative July 2018, Submit Small Starts Application to FTA Sept 2018
- FTA recommendation Feb 2019* if viable, Congressional appropriation Fall 2019
- Construction Grant Agreement 2020, Start Design Build 2020
- Construction 18 to 24 months
- Begin BRT Revenue Service 2022

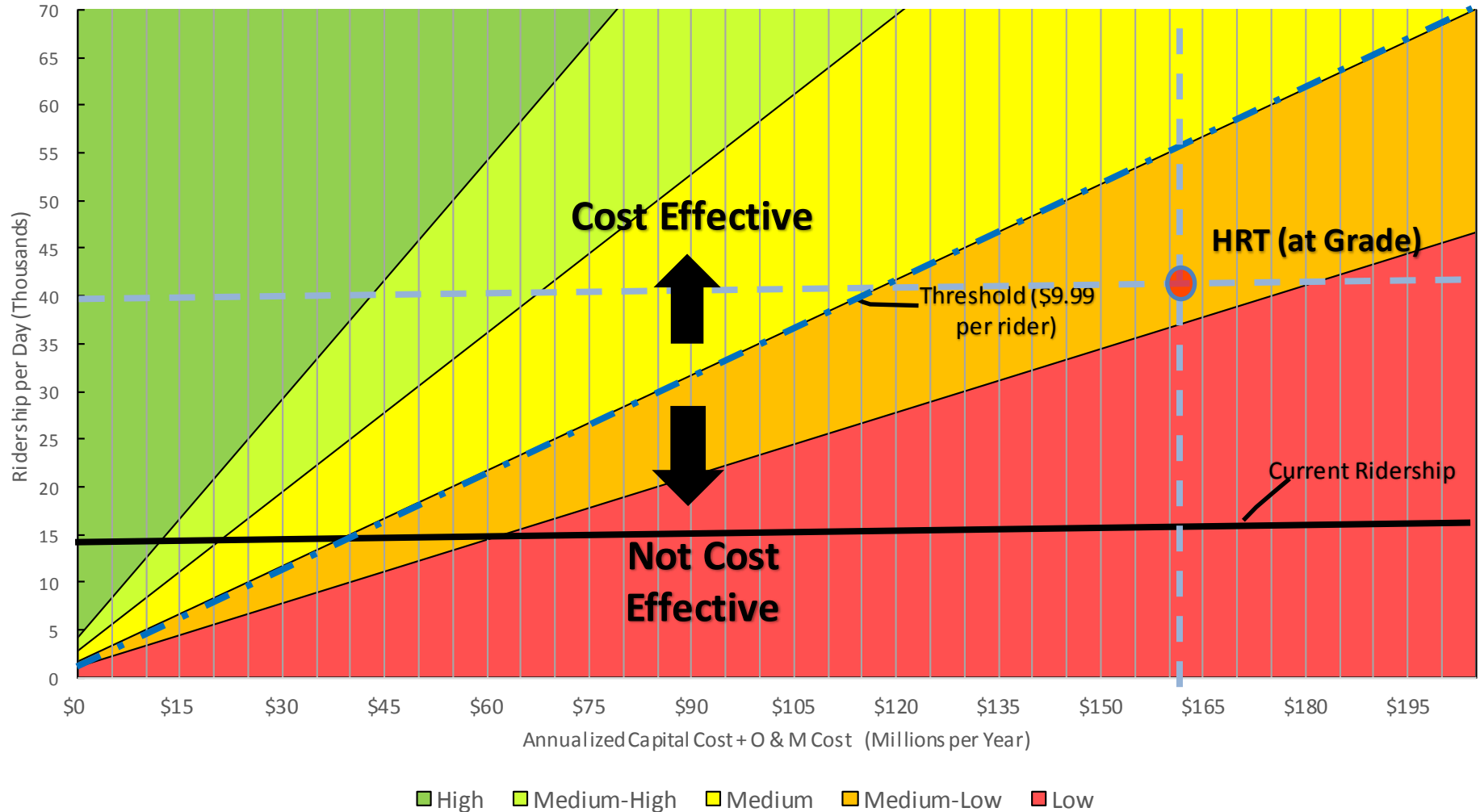
NEW STARTS (HRT)

- Metrorail at-grade **\$1.3 Billion**
- NEPA Environmental Assessment 1-2 years for additional studies
- Locally Preferred Alternative July 2018
- Submit New Starts Application to FTA Sept 2019
- FTA review and New Starts Project Development process
- FTA Request to enter Engineering 2021
- FTA Final Design Phase 2021-2023
- FTA recommendation if viable Feb 2023*
- Congressional appropriation if viable Fall 2023
- Full Funding Grant Agreement 2024
- Start Design Build 2024
- Construction 36 to 48 months
- Rail system testing 6 to 12 months
- Begin Rail Revenue Service 2028

*FTA only provides recommendations every February as part of presidential budget

Preliminary Benefit Cost Analysis

FTA Cost Effectiveness



- Demonstration of FTA Cost effectiveness analysis

BRT and HRT use of Conceptual Financial Plan Funds



Rapid Transit Corridor Conceptual Financial Plan funding available for
Capital, Financing, O&M and Replacement over 40 years

\$8.457 billion

Project Capital Costs	BRT		HRT	
Capital Costs 2017\$	243,000,000		1,332,000,000	
Funding Assumptions YOES	283,000,000	100%	1,556,000,000	100%
1. FTA Grant	100,000,000	35%	778,000,000	50%
2. FDOT	92,000,000	33%	389,000,000	25%
3. PTP Funds	92,000,000	33%	389,000,000	25%
	BRT		HRT	
Annual Operating and Maintenance Cost \$2017	15,000,000		67,000,000	
Operating and Maintenance Costs, through 2057 in YOES	1,051,000,000		4,502,000,000	

BRT and HRT use of Conceptual Financial Plan Funds



	BRT	HRT
Replacement Costs	58,000,000	1,263,000,000
Plan Fund Usage	92,000,000	739,000,000
Capital Cost including financing		
	BRT	HRT
Fund usage through 2057	1,201,000,000	6,504,000,000
Farebox Revenues	(186,000,000)	(274,000,000)
Fund Utilization net of Farebox	1,015,000,000	6,230,000,000
Percentage Utilization of Funds	12.0%	73.7%
Remaining for SMART Plan	7,442,000,000	2,227,000,000

Approved versus actual

- 14 current FFGAs with a total of \$12,347.27 M recommended
- \$6,300.34 M appropriated thru FY17

Approved with \$0 (FY 2018)

- 2 projects, the Peninsula Corridor (requesting \$647M) and Maryland Purple Line (requesting \$900M)

In Pipeline:

- New Starts – 14
- Core Capacity – 5
- Small Starts – 32

Federal funding available: **\$2.3 billion per year**

- **Small Starts program is geared toward faster delivery**
- **Project Cost under \$300 million, lower federal funding support**
- **Opportunity to apply for federal funding in the coming Fiscal Year 2019/2020**
- **Project delivery/start of operations as early as 3 to 4 years**
- **BRT implements stations and gate arms that are needed for future rail**
- **Recommendation:**

Selection of Bus Rapid Transit as the Locally Preferred Alternative (LPA)