



## Skyway Subcommittee & Skyway Advisory Group Meeting #1

---

**Date:** September 28, 2015  
**Time:** 3:00-5:30 p.m.  
**Location:** JTA Skyway Operations and Maintenance Facility

### Agenda

- 3:00 – 3:10 Welcome and Introductions (Rumlin)
- 3:10 – 3:20 CEO Comments (Ford)
- 3:20 – 3:30 Work Plan (Thoburn)
- 3:30 – 3:40 Sunshine Law Review (Milian)
- 3:40 – 4:00 Presentation on Skyway Assessment (Thoburn)
- History
  - Condition Assessment
  - Technology Scan
  - Industry Feedback
  - Options
- 4:00 – 4:30 Roundtable and Facilitated Discussion (Thoburn)
- Subcommittee/Skyway Advisory Group Questionnaire
    - What do you need to know to develop an informed opinion on the Skyway future?
    - What is important to you in making this decision? Please rank.
      - Downtown mobility
      - Capital costs and long term operating costs
      - Downtown Economic Development
      - Connectivity with larger transit system
      - Relationship with funding partners
      - City Image
      - Other
- 4:30 – 4:40 Public Comment
- 4:40 – 5:30 Tour of the Skyway Operations and Maintenance Center (Darnall)
- 5:30 Adjourn



# JTA SKYWAY SUBCOMMITTEE AND SKYWAY ADVISORY GROUP

**MEETING #1  
SEPTEMBER 28, 2015**



***Welcome***



# *Agenda*



# Agenda

- Introduction
- CEO Comments
- Sunshine Law
- Work Plan
- Skyway Overview Presentation
- Roundtable Discussion
- Operations & Maintenance Center Tour



# ***CEO Comments***



# *Sunshine Law Review*

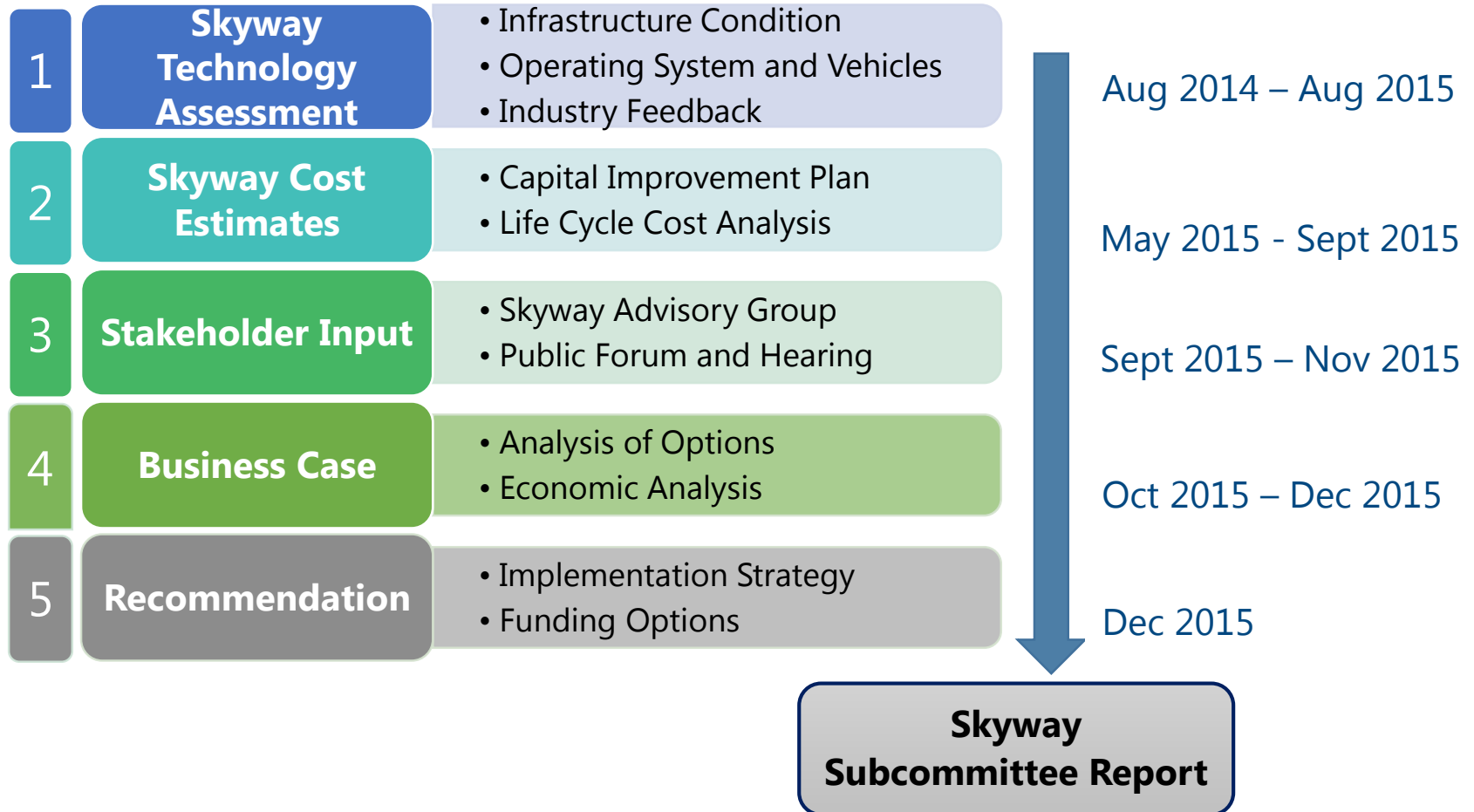


# *Work Plan*





# Skyway Assessment Process



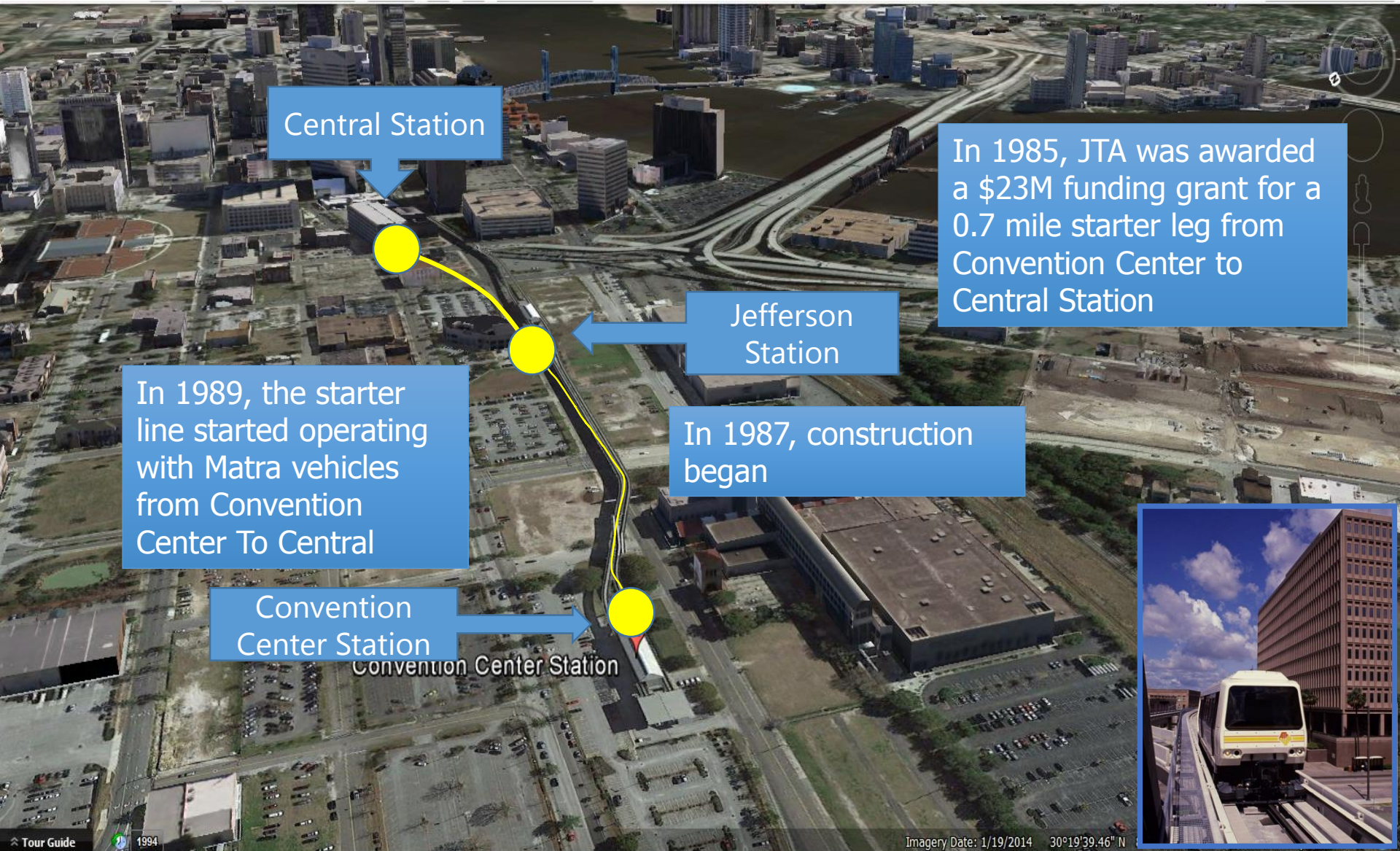
# *Skyway Assessment Overview*



# Skyway History

- Skyway planning originated in the early 1970s by FDOT and the City to address:
  - Downtown traffic congestion
  - Air quality
  - Parking
- In 1977, the project was transferred to JTA for continued development and implementation
- JTA completed a series of technical studies and applied for demonstration project funding
- Skyway is one of the Automated People Movers systems that were built in the country in the 1980s

# Skyway History



Central Station

In 1985, JTA was awarded a \$23M funding grant for a 0.7 mile starter leg from Convention Center to Central Station

Jefferson Station

In 1989, the starter line started operating with Matra vehicles from Convention Center To Central

In 1987, construction began

Convention Center Station

Convention Center Station





# Skyway History

In 1997, the system was replaced by Bombardier UM III monorail technology and was extended from Central Station to Rosa Parks Station adding Hemming Park Station in between

Hemming  
Park Station

Rosa Parks  
Station

Rosa Parks Transit Station





# Skyway History

In 1997, the operations and maintenance building was completed

Operations and Maintenance Facility





# Skyway History

In 2000, Riverplace and Kings Avenue stations opened

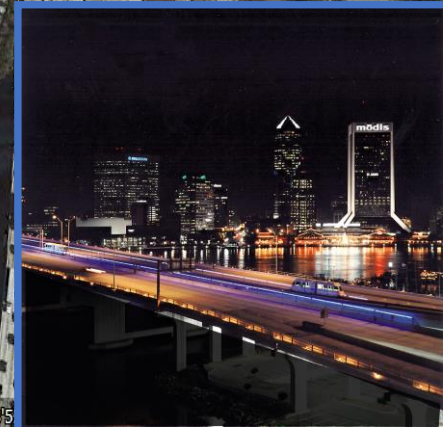
In 1998, the river crossing was completed and the southern segment opened to San Marco

Kings Avenue Station

Kings Ave. Station

Riverplace Station

San Marco Station



# System Features

- \$182 million total investment in design, construction, vehicles and equipment
- The 2.5 mile elevated system serves eight stations throughout Downtown
  - Weekdays from 6 a.m. to 9 p.m. and on weekends only for special events
- The Control Center includes Automatic Train Supervision, Supervisory Control and Data Acquisition
- 25,000 square foot O&M Center





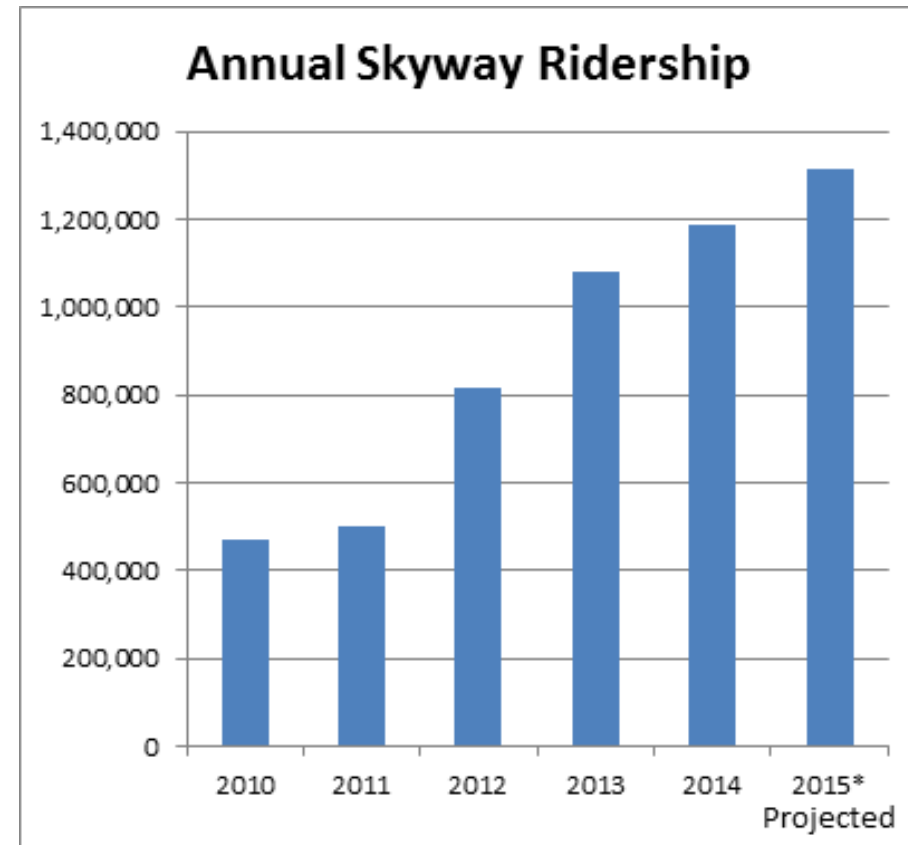
# System Features

- The elevated system provides for high reliability
- Bus routes and parking facilities are connected to the system
- Skyway spans St. Johns River
- 10 two-car trains
  - 48 feet long and can carry a maximum of 56 passengers
- Trains are climate controlled, ADA compliant and can travel at speeds of up to 30 m.p.h.



# Ridership Trends

- Average weekday ridership
  - Jan-July 2014: 4,469
  - Jan-July 2015: 5,010
- Special Events
  - 2005 Super Bowl: 100,000
  - 2014 One Spark: 75,986
  - 2015 One Spark: 82,227
- Projected ridership 2015
  - 1.37 million



# Skyway Video



# Study Purpose and Need

- Major infrastructure investment that warrants careful assessment and evaluation.
- Vehicles beyond mid-life and past due for overhaul.
- Technology out of date.
  - Parts difficult to find.
  - Proprietary equipment limits vendor market.
- Assists with responding to calls for expansion or shutdown.



# Skyway Assessment Elements

- Assess Existing Conditions
  - Infrastructure
  - Operating System
  - Vehicles
- Scan of Technology Options
- Industry Feedback on Skyway Options
- Draft Technical Reports
- Life Cycle Cost Analysis (In Progress)
- Final Technical Reports and Committee Report with Recommendation (with Advisory Group Input)



# Skyway Condition

## Assessment — Infrastructure

- Overall satisfactory conditions but has areas that need attention.
  - Drainage system in need of a redesign
  - Elevators need rehabilitation
  - San Marco, Riverplace and Kings Avenue stations escalators need replacing
  - Station lighting needs upgrading
- 15-year estimated state of good repair infrastructure needs - \$24M



# Skyway Condition

## Assessment — Operating System

- Automated Train Supervision recently upgraded
- Most of the operating system has obsolescence issues.
  - SCADA – Power supply and distribution
  - Remote Feed Boxes – Train Communication Cable
  - Automated Passenger Counter System
  - Fare Collection System
  - Guideway Intrusion Detection System
- 15-year estimated state of good repair operating system needs - \$15-19M.



# Skyway Condition

## Assessment — Vehicles

- Vehicles no longer produced by Bombardier.
- Four out of 10 vehicles out of service.
- Vehicle propulsion issues.
  - Long repair lead time
  - Drive controller circuit boards availability
- Estimated state of good repair cost is \$18M for overhaul and \$35M for new vehicles.





# Technology Review

- Review available technology to determine if any could replace existing Skyway system and vehicles or be integrated into existing infrastructure.
- Personal Rapid Transit (PRT), Group Rapid Transit (GRT), Automated People Movers (APM), Monorail, Light Rail Transit (LRT), Streetcar and Cable Cars.
- All involve significant cost and do not represent cost feasible alternatives to Skyway but Streetcar and Bus Rapid Transit (BRT) could be considered for extensions/replacement of the Skyway system.



# Industry Feedback

- Request for Industry Feedback (RFIF) was sent to 18 selected firms to gauge the industry's interest for the following three options:
  - Overhaul
  - Replacement with new in-kind APM vehicles
  - Replacement with new vehicles



# Industry Feedback

- Industry did not respond favorably to overhaul option.
- No one offered rebuilding existing vehicles (Like-kind replacement).
- Modifying infrastructure to accommodate new vehicle is cost prohibitive.
- Modifying new vehicle to run on Skyway infrastructure is viable option.
- PRT option proposed as system replacement option but technology not proven.



# Key Findings and Considerations

- Skyway structure is sound and can last another 50 years if properly maintained.
- Vehicles are obsolete resulting in high O&M costs and concerns about long-term reliability.
- Skyway vehicles need to be overhauled or replaced.
  - Significant risks associated with the cost and ability to complete a vehicle overhaul.



# Options for Consideration

- Overhaul Vehicles
  - Keep existing vehicles; rehab operating system and infrastructure
- New Vehicles
  - Modify new vehicle to operate on existing infrastructure and operating system; rehab operating system and infrastructure
- Decommission
  - Run system without major improvements until vehicles can no longer operate safely or reliably.
  - Tear down infrastructure and replace with another system
    - Streetcar, BRT, Trolley or Personal Rapid Transit
- Decommission and Repurpose Infrastructure
  - Same as above and use stations and guideway for elevated bike and pedestrian walkway



# Options

Overhaul

New Vehicles

Decommission

Repurpose

Service Replacement

BRT

Trolley

Streetcar

PRT



# Overhaul Option

## Advantages

- Maintains/utilizes existing infrastructure
- Adds 15 years to life of vehicles
- No FTA payback
- No/minor learning curve for staff
- Can avoid major passenger service interruption

## Disadvantages

- High risk for cost escalation
- Industry does not see favorably
- Uncertainty about propulsion system
- Unique and obsolete vehicle
- Constrained for expansion
- Does not fully cover remaining useful life of infrastructure
- Higher O&M costs
- Limited procurement competition



# New Vehicle Option

## Advantages

- Extended life (25 to 40 years)
- Lower risk of cost escalation
- New technology
- Maintains/utilizes existing infrastructure
- Lower O&M costs
- More capacity
- Able to extend
- Can avoid major passenger service interruption
- Aesthetics

## Disadvantages

- Higher capital cost relative to overhaul
- Unique vehicle
- Limited procurement competition (but more than existing vehicles)





# Decommission Option

## Advantages

- Lower long-term operating and capital costs

## Disadvantages

- Payback to FTA, FDOT and City for remaining useful life
- Demolition cost (Estimated \$20-25M)
- Impact on future funding from FTA
  - First Coast Flyer BRT East and Southwest corridors
  - Affects CNG Bus funding
- Impact on Downtown and Image
  - Brooklyn redevelopment, Healthy Town, Shipyards
- Inconsistent with JRTC Plans
- Need to replace service lost
  - Replacement options less reliable
  - Bus only option is \$3.4M operating and \$6.4M for 11 buses



# Repurpose Option

## Advantages

- Relatively lower long-term operating and capital costs
- Reuse of infrastructure

## Disadvantages

- See decommissioning disadvantages, except demolition costs
- Need to maintain infrastructure including stations (elevators) to maintain ADA accessibility
- Would require significant guideway modification to make pedestrian walkway
  - Guideway beam removal or modification
  - Fencing for fall protection
- Public safety concerns



# Payback Obligations

## Payback Obligations

	FTA	FDOT	CoJ
Current	\$33.5M	\$12.1M	\$6.0M
5 Years	\$24.8M	\$9.0M	\$4.3M
10 Years	\$16.7M	\$6.0M	\$2.9M
15 Years	\$10.6M	\$3.8M	\$1.9M
20 Years	\$4.8M	\$1.7M	\$0.85M



# Initial Overview of Options

	Option 1 – Overhaul	Option 2 – New Vehicles	Option 3 – Decommission	Option 4 – Repurpose
Vehicles	\$18 million	\$35 million	\$6.4 million	\$6.4 million
Operating Systems	\$19 million (over 15 years)	\$15 million (over 15 years)	\$6.9 million (over 5 years)	\$6.9 million (over 5 years)
Infrastructure	\$24 million (over 15 years)	\$24 million (over 15 years)	\$9.2 million (over 5 years)	\$9.2 million (over 5 years)
Demolition/Retrofit Cost	N/A	N/A	\$20-25 million	\$13.1-15.7 million
Contingency (15%)	\$9.2 million	\$12.3 million	\$5.4-6.2 million	\$4.4-4.8 million
Payback Obligations (FTA)	N/A	N/A	\$24.8 million	\$24.8 million
Total	\$70.2 million	\$85.1 million	\$72.7-78.5 million	\$64.8-67.8 million
Long term vision/extension	System not expandable	Expandable	N/A	N/A
O&M Cost	\$6.3-\$8 million (2016-2025)	\$6.3-\$7.5 million (2016-2025) (Reduction of \$0.5M/yr from 2020)	\$3.4 million (Bus Replacement)	\$3.4 million (Buses) \$1.0-2.0 million (Elevated bike/ped)
Life	20 years	25-40 years	5 Years	5 Years
Service Replacement	Not applicable	Not applicable	BRT, Trolley, Streetcar or PRT	BRT, Trolley, Streetcar or PRT
Advantages	<ul style="list-style-type: none"> <li>Maintains/Utilizes existing infrastructure</li> <li>Adds 15 years to life of vehicles</li> <li>No FTA payback</li> <li>No/minor learning curve for staff</li> <li>Can avoid major passenger service interruption</li> </ul>	<ul style="list-style-type: none"> <li>Extended life (25 to 40 years)</li> <li>Lower risk of cost escalation</li> <li>New technology</li> <li>Maintains/Utilizes existing infrastructure</li> <li>Lower O&amp;M costs</li> <li>More capacity</li> <li>Able to extend</li> <li>Can avoid major passenger service interruption</li> <li>Aesthetics</li> </ul>	<ul style="list-style-type: none"> <li>Lower long-term operating and capital costs</li> </ul>	<ul style="list-style-type: none"> <li>Lower long-term operating and capital costs</li> <li>Reuse of infrastructure</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>High risk for cost escalation</li> <li>Industry does not see favorably</li> <li>Uncertainty about propulsion system</li> <li>Unique and obsolete vehicle</li> <li>Constrained for expansion</li> <li>Does not fully cover remaining useful life of infrastructure</li> <li>Higher O&amp;M costs</li> <li>Limited procurement competition</li> </ul>	<ul style="list-style-type: none"> <li>Higher capital cost relative to overhaul</li> <li>Unique vehicle</li> <li>Limited procurement competition (but more than existing vehicles)</li> </ul>	<ul style="list-style-type: none"> <li>Payback to FTA, FDOT and City for remaining useful life</li> <li>Demolition cost (Estimated \$20-25M)</li> <li>Impact on future funding from FTA                             <ul style="list-style-type: none"> <li>First Coast Flyer BRT East and Southwest Corridors</li> <li>This affects CNG Bus funding</li> </ul> </li> <li>Impact on Downtown and Image                             <ul style="list-style-type: none"> <li>Brooklyn redevelopment, Healthy Town, Shipyards</li> </ul> </li> <li>Inconsistent with JRTC Plans</li> <li>Need to replace service lost                             <ul style="list-style-type: none"> <li>Replacement options less reliable than Skyway</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>See decommissioning disadvantages, except demolition costs</li> <li>Need to maintain infrastructure including stations (elevators) to maintain ADA accessibility</li> <li>Would require significant guideway modification to make pedestrian walkway                             <ul style="list-style-type: none"> <li>Guideway beam removal or modification</li> <li>Fencing for fall protection</li> </ul> </li> <li>Public safety</li> </ul>

\*\*Estimates based on best available data and will be thoroughly reviewed and refined prior to final recommendations



# *Questions*



# *Roundtable Discussion*



***What do you need to know  
to develop an opinion on the  
Skyway's future?***



# *What is important to you in making this decision?*

*Please rank the following. (One is highest)*

- Downtown mobility*
- Downtown economic development*
- Connectivity with larger transit system*
- Capital costs and long term operating costs*
- Relationship with funding partners*
- City Image*
- Other?*





# *Skyway Tour*

