JTA SKYWAY MODERNIZATION PROGRAM
Public Forum

November 15, 2016
Presentation Topics

» Background
  • History/State of the Skyway

» Skyway Modernization Program
  • System Plan
    o *Role of the Skyway? Areas to be served?*
  • Vehicle Operations & Technologies
    o *Type of vehicle? Frequency of service?*

» What’s Next?
  • Ongoing Outreach Activities
  • Framework “Path Forward”
Background
Background

$182 million
• Design, vehicles, equipment, construction

2.5 miles, elevated
• 8 stations, River Crossing
• 10 two-car trains (56 passengers)
• Travel up to 30 m.p.h.
• Service Times:
  o Weekdays 6 a.m. to 9 p.m.
  o Weekends – special events

Operations/Control Center
Background

» History
  • Built in 1980’s and 90’s
  • Change in vehicle technology

» Prior studies
  • 1973 through 2014
    o Mayor’s Task Force
    o Skyway extension studies
    o TIGER Grant applications
  • 2014- 2015 Skyway Technology Assessment
    o Condition assessment
    o Life Cycle Cost Analysis
    o Skyway Advisory Group/Subcommittee
Current State of the Skyway

» Skyway structure is sound
  • May last another 50 years if properly maintained

» Skyway vehicles are obsolete
  • Vehicle parts are not available
  • Results in high operating and maintenance costs

» Skyway vehicles need to be overhauled or replaced
  • Significant risks associated with the cost and ability to complete a vehicle overhaul
  • Possibility of extensions are limited with existing vehicles
What We Heard from Community

» 2015 Online Survey results
  • 1,619 responses
  • 80% keep Skyway and expand system
  • 9% prefer converting to elevated multi-use path
  • Prefer extension to Sports Complex/Shipyards (83%) and Brooklyn (79%) and San Marco (66%)

» Respondent profile
  • 57% ride system (15% 4+ times a week)
  • 11% live Downtown
  • 10% students
  • 63% drive to skyway, 34% walk
Guidance Moving Forward

» Keep
  • Strengthen image and role as a Downtown circulator
  • Infrastructure generally good condition

» Modernize
  • Rehab or replace vehicles
  • Emerging technology

» Expand
  • Consider alternate modes
  • Serve new areas
Skyway Modernization Program
Skyway Modernization Program

» Focus: Keep, Modernize and Expand

» Key Questions to answer:
  • What is needed to keep it running now?
  • What will a future system look like?
  • How will it connect to other modes?
  • What is the best vehicle?
  • How will we pay for it?

» Program includes:
  • System/Operating Plan
  • Capital/Finance Plan
  • Phasing Plan
System Plan Development

How and where do we expand the system?
System Plan Development

» Desired System Features

✓ Frequent
✓ Fast
✓ Flexible*
✓ Reliable
✓ Responsive
✓ Accessible*
✓ Context Sensitive*
✓ Capacity to meet demand

* Optimal system to serve new areas with the ability to travel at-grade (street level) or elevated.
System Plan Development

» Existing Travel Patterns
  • Where do people travel today?

» Future Needs Assessment
  • Where do people need to go in future?
  • Where do we expand the system?

» Downtown Development Plans
  • Downtown Investment Authority
  • City of Jacksonville Planning
System Plan Development

JTA Skyway Modernization Program
System Plan Development

» Peer System Review
  • Miami MetroMover
  • Orlando
  • Other Areas

» Miami - Takeaways
  • Similar issues with vehicles/antiquated systems
  • Success Factors:
    o Intermodal connections
    o Direct connections to buildings
    o Public Private Partnerships
  • Loop system allows higher frequency
  • Balance with frequency, capacity and vehicle
System Plan Development

» Stakeholder Outreach
  • Partner Agencies (TPO, FDOT, City, DIA, Chamber, etc.)
  • Professional Organizations
  • Downtown Stakeholders (Downtown Vision, etc.)

» Initial Agency Feedback
  • System needs broader reach
  • Key areas may not be accessible above grade
  • Use road diets to capture transit lanes
  • Interest in autonomous vehicle technology
  • Concern about at-grade reliability, speed and capacity to handle crush loads for events
Vehicle Technology Options

What is the vehicle of the future?
Vehicle Technology Options

» Universe of Vehicles

» Key Questions:
- What can be done with the existing vehicle?
- What are options to use the existing “Guidebeam” or the monorail?
- Are there options to remove the “Guidebeam”?
- Is there a vehicle that can run on the existing structure and then go down to the street level?
Vehicle Technology Options

Automated People Mover

Monorail

Group Rapid Transit

Monorail
Vehicle Technology Options

Personal Rapid Transit (PRT)

Light Rail Transit

Group Rapid Transit

Cable
Vehicle Technology Options

Driverless Bus

“Ollie”

Navya Arma
Vendor/Manufacturer Meetings

» Spectrum of modes represented
  • Light rail/Streetcar
  • Automated People Mover/Monorail/Cable
  • Personal/Group Rapid Transit
  • Autonomous vehicles

» Limited interest in vehicle overhaul

» Only certain vehicles can realistically operate on elevated structure as-is or with modifications to guideway

» Challenges/limitations for extensions which operate at the street level
At Grade (Street Level) Challenges

» Power
  • Third rail or catenary
  • Battery with potential for charging stations

» Guideway or Transit Lane
  • Dedicated right-of-way
  • Auto, bike and pedestrian crossings
  • Disruption of traffic at intersections
  • Still need a driver with current technology

» Connectivity with elevated sections
  • Grade and infrastructure obstruction for ramp
  • Transfers between two systems
System Expansion Considerations

Maximize use of existing infrastructure

Expand use of area under guideway

Integrate with development
Vehicle Technology Options

- Rehabilitate Existing Vehicles
- Replace vehicle with similar vehicle on Guidebeam
- Replace existing vehicle with a new vehicle – remove the Guidebeam
- New Technology – Autonomous Vehicles
Vehicle Technology Options

» Rehabilitate Existing Vehicles
  • Service life up to 10 - 15 years
  • Minor disruption to operations
  • Assumes upgrade to existing operating system
  • No modifications to infrastructure
  • Lowest cost
  • Allows sufficient time to develop long-term plan including extensions
Vehicle Technology Options

» Replace with same type of vehicle on Guidebeam

• Service life up to 30 years
• Minor disruption to Operations
• Assumes upgrade of existing operating system
• No modifications to infrastructure other than rehab costs
• Medium cost
• Reduces flexibility with longer commitment to current technology
Vehicle Technology Options

» Replace with new vehicle without the Guidebeam
  • Service life up to 30 years
  • Infrastructure modifications/replacement will disrupt operations
  • Extensive modifications for guideway and stations with possible replacement
  • Highest cost
  • Added flexibility with vehicle and extension options
Vehicle Technology Options

» New Technology – Autonomous Vehicles

• Undetermined service life - may be similar to buses
• Change to operating system/infrastructure could disrupt operations
• Significant modifications to guidebeam and stations likely
• Potential as most flexible option for future extensions
• Unproven technology with near term risk but long-term potential
• Allows incorporation of latest technology
<table>
<thead>
<tr>
<th>Description of Option</th>
<th>Service Life</th>
<th>Operations</th>
<th>Infrastructure</th>
<th>Cost</th>
<th>Flexibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rehabilitate existing vehicle</td>
<td>10-15</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td>Replace with similar vehicle on guidebeam</td>
<td>30</td>
<td>L</td>
<td>M</td>
<td>H</td>
<td>L</td>
</tr>
<tr>
<td>Replace with new vehicle without guidebeam</td>
<td>30</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>M</td>
</tr>
<tr>
<td>New Technology - Autonomous</td>
<td>10?</td>
<td>M</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
</tbody>
</table>
What’s Next?
Ongoing Outreach Activities

- “Refresh” - Vehicle Wraps
- Enhance Station Areas
- Website and Social Media Updates
- Online Public Survey
- Community Outreach
  - Agency/Community Events
  - Art Walk
  - Student tours
“Path Forward” Framework

» System/Operating Plan
  • Preliminary options to expand the system
  • Summary of potential technologies

» Capital/Financial Assessment
  • Assessment of existing needs and estimated costs
  • Menu of funding options
  • Menu of project delivery options

» Phasing Plan
  • Vehicle modifications/transition
  • Prioritization of the expansion segments
Public Feedback

» Survey

» Feedback to JTA

• Where should it go?
  o Priorities
  o Street level or elevated

• What characteristics are most important to you
  o Speed
  o Frequency
  o Flexibility
  o Service hours
  o Cost effectiveness
  o Other
Thank you!
Extra Background Slides
Riverside to Sports Complex
JTA Skyway Extension – Five Points to Central
JTA Skyway Extension – Central to Sports Complex
JTA Skyway Extension – North to UF Health and VA
JTA Skyway Extension – South to Commuter Rail
Miami MetroMover

» Loops
  • 3 Routes -- Omni, Brickell, Inner Loop
  • Higher frequency bi-directional Inner Loop

» Vehicles – 21 in Peak
  • Brickell – 6
  • Omni – 5
  • Inner – 5 Deuces

» Intermodal Connections
  • MetroRail Connections
  • Three Bus Transfer Stations
  • Future All Aboard Florida (“Brightline”) Connections
  • Future Commuter Rail – FEC Corridor
Miami MetroMover

» 29 new vehicles replaced in 2008 (12) and 2011 (17)

» Local funds

» Sole source procurement

» FTA allowed transfer of useful life from old vehicles

» Ongoing procurement issues – already cannibalizing vehicles

» Slope nose issue – one-off doors
<table>
<thead>
<tr>
<th>Potential Extension</th>
<th>Markets Served</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Southwest to Brooklyn/Riverside Area</td>
<td>Major employment, Brooklyn Station, Park St</td>
</tr>
<tr>
<td></td>
<td>residential areas; Major Employers</td>
</tr>
<tr>
<td>2. Southwest to Park St/Five Points</td>
<td>Five Points Retail, Restaurants, Residential</td>
</tr>
<tr>
<td>3. South of San Marco Station/ Medical Complex</td>
<td>Medical facilities, Restaurants, Major Employment</td>
</tr>
<tr>
<td>4. East of Riverplace Station &amp; Kings Avenue Station</td>
<td>Southbank employment, Restaurants, The District</td>
</tr>
<tr>
<td>5. South of Kings Ave Garage/FEC Corridor</td>
<td>Connects to future commuter rail stations,</td>
</tr>
<tr>
<td></td>
<td>Jackson Square</td>
</tr>
<tr>
<td>6. East along Bay Street to A. Philip Randolph</td>
<td>Employment, Residential areas, Sports Complex</td>
</tr>
<tr>
<td>7. North to UF Health/Shands</td>
<td>Major Employment, Medical Facilities, Springfield</td>
</tr>
<tr>
<td></td>
<td>community</td>
</tr>
<tr>
<td>8. San Marco Station to Medical Complex/New residential</td>
<td>Access to medical facilities above street level,</td>
</tr>
<tr>
<td></td>
<td>pedestrian</td>
</tr>
</tbody>
</table>
JTA Skyway Extensions

JTA Skyway Modernization Program
Phase 1: Riverside to Sports Complex

- Phase 1A: Brooklyn Station to Central Station
- Phase 1B: Central Station to Laura St Station
- Phase 1C: Laura St Station to Sports Complex
- Phase 1D: Five Points to Brooklyn Station
Skyway Modification Considerations