JTA SKYWAY MODERNIZATION PROGRAM

JTA Board of Directors

December 8, 2016
Today’s Objective

Framework for Path Forward

» Desired Downtown circulator system

» Preferred vehicle technology

» Initial steps for project development
Expectations

» Board Review
  • Feedback on today’s presentation
  • Review of Draft Technical Memorandums and Summary Report
  • Additional information as requested
    ○ January Public Forum

» January Board Resolution
  • Concurrence on Path Forward
Where are we in the process?

1. Technology Assessment
2. Policy Development/Skyway Advisory Group
3. Skyway Modernization Program
4. Project Development
5. Design and Construction
Program Guidance

» Keep
• Strengthen image and role as a Downtown circulator
• Maximize use of existing infrastructure

» Modernize
• Rehab or replace vehicles
• Consider emerging technology

» Expand
• Consider alternate modes
• Serve new areas
• Provide flexibility
System Plan Development

Understanding Downtown Mobility Needs
System Plan Development

» System Plan Input
  • Peer systems/research
  • Partner agency feedback
  • Downtown stakeholders
  • Community outreach

» Understanding Downtown Mobility
  • Where do people need to go?
  • Where is development occurring?
  • Where do we expand the system?
  • Desired system attributes?
System Plan Input

» Peer System Review
  • Miami MetroMover
  • Orlando (Lymmo, Disney)
  • Other areas (WV, Charlotte)

» Miami - Takeaways
  • Loop system allows higher frequency
  • Intermodal connections
  • Direct connections to buildings
  • Public Private Partnerships
Stakeholder Outreach
System Plan Input

» Initial Agency Feedback
  • Needs broader reach
  • Key areas may not be accessible
  • Use road diets to capture transit lanes
  • Interest in autonomous vehicle technology
  • Concern about at-grade reliability, speed and capacity
System Plan Input

» Professional Societies

» Public Forum
  • Open House format
  • Multiple comment stations
  • Approximately 50 people in attendance
  • Positive feedback, focus on extensions “where people want to go”

» Skyway Advisory Group/Subcommittee
Online Survey

1,085 Survey Responses
Within 50 days

462
43.0%
612
57.0%

Extensions Priority

Sports Complex – 37.0%
Five Points – 23.0%
Brooklyn – 17.0%

Five Points – 20.5%
Brooklyn – 19.4%
Riverside Arts Market – 18.4%

San Marco – 21.2%
Riverside Arts Market – 20.0%
Brooklyn 17.3%
System Plan Development

» Desired System Attributes

✓ Accessible
✓ Capacity
✓ Context Sensitive
✓ Fast
✓ Flexible
✓ Frequent
✓ Reliable
✓ Responsive
Desired System
Ultimate Urban Circulator
» Utilizes investment in Skyway
» Connects employment, residential, retail and entertainment
» High frequency service
» Capacity to handle peak event loads
» Operate elevated or at street level
» On demand and point to point capacity
Existing Skyway
Existing Skyway

- Downtown
- Springfield
- East Jacksonville
- Sports Complex
- Mixon Town
- LaVilla
- Riverside/Avondale
- Brooklyn
- Southbank
- San Marco
- St. Nicholas
- Jacksonville Sports Complex
- Springfield
- Downtown
- Mixon Town
- LaVilla
- Riverside/Avondale
- Brooklyn
- Southbank
- San Marco
- St. Nicholas
Skyway System Expansion
Ultimate Urban Circulator

- Frequent & Flexible
- Economic Driver
- Emerging Trends
- Phased Implementation
Vehicle Technology Options

What is the vehicle of the future?
Technology Considerations

» What is the best vehicle to achieve desired system?

» What should be done with the existing vehicle?

» What are options to use the existing “Guidebeam” or remove it?

» Is there a vehicle that can run on the existing structure and then go down to the street level?
Guidebeam Considerations

*Illustrative - Not to scale
Infrastructure Considerations

Maximize use of existing infrastructure (Bay St – looking west)

Integrate with development (i.e. Miami)

Expand use of area under guideway (i.e. Miami)
Street Level Considerations

» System Power Supply
  • Third rail or overhead catenary
  • Charging stations

» Guideway or Transit Lane
  • Dedicated right-of-way
  • Conflicts at crossings (pedestrian, auto, bike)

» Connectivity with elevated sections
  • Infrastructure for ramp
  • Transfers between two systems
Vendor Meetings
Vendor Input

» Representative Modes
  • Automated People Mover/Monorail/Cable
  • Personal/Group Rapid Transit
  • Autonomous vehicles

» Limited interest in vehicle overhaul

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

» Challenges for extensions at street level
Vehicle Replacement Options

1. Replace with similar vehicle on guidebeam

2. Replace with a new vehicle – remove the guidebeam

3. New Technology – Autonomous Vehicles
Option 1 – Same type of vehicle

» **Service Life:** Up to 20-30 years

» **Operations:** Minor disruption

» **Infrastructure:** No modifications to infrastructure other than rehab

» **Cost:** Medium-High

» **Other:**
  - Limited operational flexibility
  - High vehicle cost
  - Higher cost and limits to extension
Option 2 – New vehicle

- **Service Life:** Up to 20-30 years
- **Operations:** Modifications/replacement will disrupt operations
- **Infrastructure:** Extensive modifications with possible replacement
- **Cost:** Highest
- **Other:**
  - Some flexibility with vehicle & extension options
Option 3 – Autonomous Vehicles

» **Service Life:** TBD/shorter than APM

» **Operations:** Conversion would disrupt operations

» **Infrastructure:** Significant modifications

» **Cost:** Variable

» **Other:**
  - *Most flexible option for future extensions*
  - *Unproven technology with near term risk but long-term potential*
  - *Potential for lower cost extensions, vehicles & O&M*
Technology Evaluation Criteria

» Frequency
» Transition Impacts
» Operational Flexibility
» Proven Technology
» Operates At-Grade
» Operates Elevated
» Capacity
» Speed

» Cost
  • Vehicle
  • Infrastructure (exist)
  • Infrastructure (new)
  • O&M

» Maintainability
» Reliability
Preferred Vehicle Technology

» Autonomous Vehicle (AV)

» Flexible
  • Operates at-grade or elevated
  • Operational flexibility
    o *High frequency and high capacity*
    o *Potential for on demand*
    o *Point to point service*

» Technology beyond conceptual and rapidly developing

» Unique opportunity for deployment of AV technology
Considerations for AV Option

» Infrastructure
  • Guidebeam removal
  • Crash worthiness
  • Station modifications

» Technology
  • Development of operating system
  • Vehicle controls
  • Charging stations

» Other Considerations
  • Buy America compliance
  • Useful life of existing vehicles
Funding
Funding

» Rehabilitation of existing Skyway
  • Limited to existing funding sources

» New vehicles
  • New sources such as State Transit Grants

» System Expansion
  • Federal New Starts Grants
  • State Transit Grants
  • Local user fees and/or general taxes
  • Applicable to early and future phases
Path Forward - Next Steps
Next Steps

» State of Good Repair

» Community Outreach

» Development of Preferred Technology
  • Vehicle selection
  • Development of operating system
  • Infrastructure assessment
  • AV pilot project

» Project Development
Project Development

» System Expansion Actions

• Phase 1A: Brooklyn Extension
  o Prepare package – TIGER Grant, other, etc.
• Phase 1: Five Points to Sports Complex
  o PD&E Study
• Bay Street Corridor Development Plan
• Corridor preservation
• Rosa Parks Repurpose Plan
• Operational enhancements
Phase 1: Five Points to Sports Complex
Phase 1: Five Points to Central Station
Phase 1: Central to Sports Complex
Bay Street

- On-Street Parking
- Sidewalk
- Sidewalk
- Reversible Traffic Lanes
Bay Street Concept

- Reversible Traffic Lanes
- Sidewalk
- Multi-Use Path
- Dedicated Transit Corridor
Bay Street Concept

Looking East Along Bay Street

- Reversible Traffic Lanes
- Dedicated Transit Corridor
- Sidewalk
- Multi-Use Path
- Future Development / Riverwalk
Think “Bigger”

We, as a city and as a region, need to be thinking bigger about our transportation network. We cannot be afraid to fail as we chase a bolder vision. It's time for us to practice "the art of the possible."

Nathaniel P. Ford Sr.
Jacksonville Transportation Authority, Chief Executive Officer
River Crossing

* Conceptual Rendering
Ultimate Urban Circulator (U²C)
U²C: Ultimate Urban Circulator

Thank you!