NVTC WMATA Committee Meeting

Bus Transformation Project and Bus Priority

April 21, 2022
Purpose and Background

Review Bus Transformation Project (BTP)

Progress:

- Designed to transform the bus system to provide fast, frequent, reliable, affordable service that feels unified and advances transit equity

- More than a year of public and stakeholder input developed four strategies and 26 recommendations to improve bus

Bus Priority Updates and Partnership Opportunities
Buses Move the Region

- A major part of the Washington area’s transportation system, connecting residents to destinations
  - Provided by **nine operators**, including Metrobus
  - Since start of the pandemic, Metrobus has carried more riders than Metrorail

- Needs improvement to meet needs of region, especially riders who rely on it most
Bus Transformation Update

Metrorail vs. Metrobus Demographics in Virginia

Persons of Color = Non-white or Hispanic
Low-income = Household income of $30,000 or lower per year

Source: 2016 Metrorail Survey; 2018 Metrobus Survey
Survey Example: Bus Customer Priorities

Respondents were asked to prioritize improvements to local bus service by apportioning “coins” from a hypothetical budget of 20 coins to eight different categories of improvement types based on their preferences.

- More Frequent Service: 23%
- More Reliable and Faster Service: 20%
- More Direct Buses and Fewer Transfers: 16%
- Longer Hours of Operation: 10%
- Affordable Fares: 10%
- Safer, More Secure Buses and Stops: 8%
- Better App for Information or Payment: 7%
- Less Confusing system: 5%

Run more buses!

Frequent service that is available 7 days a week is critical to building a useful transit network that people can rely on for all their needs.

Metro buses come fairly frequently (every 10-15 minutes) which is very convenient because then I can leave work whenever I want and always know a bus will be there soon.

...ridership here would increase exponentially if buses were frequent and preferably in dedicated lanes.
Buses face on-route challenges

Pre-Covid, buses got slower than 10 years ago…

...as a result of multiple changes to the landscape

- Increased congestion
- On-street parking
- Proliferation of bus stops
- Curbside developments
- Elimination of historical bus lanes
- Lack of enforcement for deliveries, taxis, etc. in bus lanes and at stops

Source: National Transit Database, WMATA FY19 budget, BCG Analysis
Bus Transformation Project | Strategies

1. **Frequent and Convenient Bus Service**
   - Provide frequent and convenient bus service that connects communities and promotes housing affordability, regional equity, and economic growth.

2. **Bus Priority on Roadways**
   - Give buses priority on roadways to move people quickly and reliably.

3. **Customer Experience**
   - Create an excellent customer experience to retain and increase ridership.

4. **Task Force to Implement the Strategy**
   - Empower a publicly appointed Task Force to transform bus and lead the implementation of a truly integrated regional system.
## 2. Bus Priority on Roadways

### Progress since the Board’s endorsement in January 2020

<table>
<thead>
<tr>
<th>Commitments from state and local agencies to expedite coordinated implementation of bus priority</th>
<th>DDOT - Bus lanes, TSP, Queue Jumps, and Violation Detection; Montgomery and Prince George's Counties - Queue Jumps and Tactical Bus Lanes; Northern Virginia – TSP, All-door Boarding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enforcement policies that establish bus priority</td>
<td>Project underway to launch a bus-mounted, fully-automated Bus Priority Violation Detection System (VDS) in coordination with jurisdictions</td>
</tr>
<tr>
<td>Capital program at Metro for bus priority projects</td>
<td>✔️ Bus Priority team and programmed CIP</td>
</tr>
<tr>
<td>Regional congestion mitigation efforts</td>
<td>WMATA prepared to support regional efforts</td>
</tr>
</tbody>
</table>

*Note: Board priority recommendations are in **bold***
Bus Transformation Update

Bus Priority Treatments to Improve Speed and Reliability

- Dedicated Bus Lanes
- Automated Violation Detection and Enforcement
- All-Door Boarding
- Floating Bus Stops
- Stop Consolidation

**Speed**
- Traffic Congestion
- Signal Delay
- Stop Delay: Deceleration
- Dwell Time
- Stop Delay: Acceleration
- Free Flow

**Time**
- Transit Signal Priority
- Queue Jumps
Bus Transformation Update

Bus Priority Progress in Region

- Metroway in Alexandria and Arlington, VA
- Bus Lanes in Silver Spring, MD
- A Bus Priority Queue Jump Signal in DC
- Bus Lanes in DC
- Montgomery County’s Flash BRT Service
Active projects include both managing and coordinating programs

1. **Transit Signal Priority (TSP)**
   - **a. Extended green**
     - TSP called
     - Typical phase length: 36s (5s) 19s
   - **b. Truncated red**
     - TSP called
     - Typical phase length: 19s (5s) 36s

Buses request an extended green or truncated red light to reduce wait times

2. **Queue Jumps (QJs)**
   - Give buses a head start with additional travel lane and special signal

3. **Violation Detection System**
   - Sends video of violations to jurisdictions to issue citations and deter future misuse

4. **All-door Boarding Pilot**
   - Reduces dwell time by allowing passengers to board from all doors
New TSP Corridors | Improve Performance and Equity

- Total TSP intersections in the region: **250**
  - DC: 200 intersections
  - Virginia: 50 intersections and more coming online

- Transition to 4G communications completed in 2022

- Ongoing System Maintenance

- New Corridors in NoVA in 2022: **Duke Street**

- Upcoming: Additional intersections on Route 7, Langston Boulevard, and Columbia Pike
All-Door Boarding Pilot *(Coming in 2023)*

Downtown Boston
Weekday Morning Rush Hour

June 2017
Violation Detection System *(Coming to DC in 2023)*

- **Project Goal:** Improve travel time and reliability for bus riders by keeping bus lanes and bus zones clear from unauthorized use.
- **Benefit to Buses:** Can increase bus speeds up to 20-30%
- **Current Status**
  - Developing technology requirements, scope of work, program implementation plan
  - Vendor RFP to be released this spring
  - Targeting early 2023 for initial rollout
Key Takeaways

- Regular regional coordination is the cornerstone of a successful Bus Priority Program
- Incremental benefits can be realized as bus priority treatments are layered on along bus routes and corridors
- Strong analytics and performance monitoring make the case for continued regional investment in Bus Priority

Next Steps

- Redesign Bus Network
- Expand bus priority initiatives in partnership with local DOTs

DC’s 2020 Bus Lanes improved median speeds by 3-16% Slowest speeds improved up to 27%
Bus Transformation Update

Broad Stakeholder Engagement

More than a year of public and stakeholder input including:

- 8,800+ public survey responses
- 23 Executive Steering Committee meetings*
- 16 Technical Team meetings*
- 8 Strategy Advisory Panel meetings*
- 14 WMATA Leadership Team meetings*
- 13 Metrobus operator listening sessions
- 45 External project briefings
- 33 Pop-up events
- 3 Public Open House events
- 4 Focus Groups
- 140 participants in September 2018 Kickoff Summit
- 285 Social media posting
- 312,000 people reached via social media
### 1. Frequent and Convenient Bus Service

#### Progress since the Board’s endorsement in January 2020

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Status</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>Regional standards across bus systems</td>
<td><strong>Metrobus Service Guidelines adopted</strong> December 2020</td>
</tr>
<tr>
<td>B</td>
<td>Standardized bus operations and performance data</td>
<td><strong>Annual Line Performance Report published</strong> December 2020</td>
</tr>
<tr>
<td>C</td>
<td>Bus Network Redesign</td>
<td><strong>Scope developed in partnership with jurisdictions and redesign effort initiated</strong></td>
</tr>
<tr>
<td>D</td>
<td>Revised Metrobus service definitions and funding allocation formula</td>
<td><strong>Included in Network Redesign (Initiative C)</strong></td>
</tr>
<tr>
<td>E</td>
<td>Flexible on-demand services</td>
<td><strong>Study underway</strong></td>
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Building a Better and More Equitable Bus Network

**Purpose:** Transform bus into a fast, frequent, reliable, affordable system that feels unified

**Outcomes:** 26 recommendations + Action Plan

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**New Service Guidelines**
- Adopted Dec 2020
- New service classifications
- New performance metrics

**Frequent Service Network**
- Frequent service all day
- At least 12-20 minute service
- 36 high-ridership routes

**Bus Prioritization**
- Bus lanes and queue jumps
- Traffic signal priority
- Bus lane enforcement

**Bus Network Redesign**
- Analyze demand
- Assess market
- Equity emphasis
- Public engagement
- Prioritize resources
- Redesign network
Service Guidelines | Adopted in December 2020

1. **Bus Rapid Transit**
   - High frequency routes that have dedicated right-of-way or other traffic control measures

2. **Framework Routes**
   - Are the backbone of bus service, serving various purposes for riders

3. **Coverage Routes**
   - Often connect riders to more frequent service

4. **Commuter Routes**
   - Provide peak period only trips during periods when commuters would use the services

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**Service Classifications**
- Group routes by the **purpose** they serve

**Service Tiers**
- Group routes by the **density** in which they operate in

- **A** | densely populated
- **B** | moderate density
- **C** | lower density

- **A**
  - Corridors such as 16th Street in the District

- **B**
  - Areas such as Arlington Blvd. in Fairfax County

- **C**
  - Residential areas such as Bowie or Burke
Bus Network Redesign | Goals and Outcomes

- Increase access to frequent service
- Grow ridership and mode share
- Simplify bus network for existing and future customers
- Leverage Service Guidelines for regional cohesion
- Align with changes in land use and demographics
- Harmonize payment systems and fare structure
- Promote equity, access to opportunity, and an inclusive region
- Coordinate service investments with bus priority infrastructure
### 3. Customer Experience | High-quality information

<table>
<thead>
<tr>
<th>Progress since the Board’s endorsement in January 2020</th>
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</thead>
<tbody>
<tr>
<td><strong>J</strong> Accurate, real-time service information</td>
</tr>
<tr>
<td>December 2020 - Realtime crowding on Bus and Rail</td>
</tr>
<tr>
<td>Future – Additional real time information for Bus customers</td>
</tr>
<tr>
<td><strong>K</strong> Legible maps and customer-friendly route names</td>
</tr>
<tr>
<td>September 2021 - All Day Frequent Bus Service Map</td>
</tr>
<tr>
<td>Future – Digital wayfinding strategy with integrated bus-rail maps</td>
</tr>
<tr>
<td><strong>L</strong> Marketing efforts to enhance visibility of bus and benefits</td>
</tr>
<tr>
<td>Ongoing – on social media</td>
</tr>
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</table>

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Realtime Service Information
Legible, Customer-friendly Maps

Metrobus P12
- All-day 12-minute service or better
- Connects to the Green Line at Suitland Metro Station and to the Blue/Silver Lines at Addison Road Metro
### 3. Customer Experience | Easier Bus Fare Payments

Progress since the Board’s endorsement in January 2020

<table>
<thead>
<tr>
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<th>Free Transfers between bus and rail</th>
<th>Launched in September 2021 and adopted in the FY 2023 budget</th>
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<tbody>
<tr>
<td>N</td>
<td>Reduced fare options for low-income riders</td>
<td>Pilot resuming</td>
</tr>
<tr>
<td>O</td>
<td>Mobile solution to plan trips and pay in one place</td>
<td>Mobile Payment Implemented</td>
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<tr>
<td>P</td>
<td>New regional passes across all providers</td>
<td>Board approved revised combo passes; coordination with regional providers underway</td>
</tr>
<tr>
<td>Q</td>
<td>Incentivize more employers to offer transit benefits</td>
<td>SmartBenefits ad campaign to be launched as ridership returns</td>
</tr>
</tbody>
</table>

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3. Customer Experience | Safer and More Pleasant Rides

Progress since the Board’s endorsement in January 2020

| R | Improved bus stops and shelters | In progress – bus shelters in bus loops will be replaced with modern shelters |
| S | Technology and programs to improve safety | In progress - Replacement of CCTV video systems; procurement of a collision avoidance |
| T | Exceptional customer service from frontline staff | Regular meetings at WMATA to review customer complaints and improve customer service |
| U | Highest standards of comfort and cleanliness | Implemented – Covid-19 daily bus cleaning and sanitation SOPs |

Note: Board priority recommendations are in **bold**
Modernizing Bus Shelters

- Existing shelters: 30+ years old and rusting
- New shelters will include
  - Structural steel
  - Solar panels and Lighting
  - Digital Bus Information Screens
### 3. Customer Experience | Innovation to improve bus

#### Progress since the Board’s endorsement in January 2020

| V | New vehicle technologies to improve bus’ environmental footprint and efficiency | Launched - Zero-Emission Vehicles program  
Adopted – Board goal of Zero-Emission bus fleet by 2045 |
| W | Regional Mobility Innovation Lab to share knowledge and accelerate improvements | Monthly - Regional Fare Coordination Meeting  
Bi-Monthly - Regional Bus Priority Meeting  
Annual - Bus Ridership Workshop |

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# 4. Coordination Improves Implementation

## Progress since the Board’s endorsement in January 2020

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<tr>
<td>X</td>
<td>Task Force to provide long-term leadership for the region’s bus systems</td>
<td>Re-Launched in Winter 2022 as a Quarterly Regional Leadership Meeting for Bus System Providers</td>
</tr>
<tr>
<td>Y</td>
<td>An independently-published annual progress report on BTP Strategy implementation and a bus performance scorecard to track the level of service delivered to customers</td>
<td>BTP Progress Report completed by MetroNow in January 2022</td>
</tr>
<tr>
<td>Z</td>
<td>A platform for rider feedback for incorporating feedback into revisions of the BTP recommendations</td>
<td>Metro Ridership and Recovery Survey completed in summer 2021</td>
</tr>
</tbody>
</table>

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Queue Jumps in the District and Maryland

Queue Jumps can save a bus approximately 12 seconds at each intersection

- Increased the total number of QJs in DC from 8 to 15 in 2021
- 6 more QJs will be constructed in DC in 2022
- DC will design 5 additional QJs in 2022
- WMATA will design 12 QJs in Maryland in 2022
- By the end of 2023, we hope to have 38 QJs in our region