



**Customer Service and Operations Committee**

**Board Information V-C**

**September 10, 2015**

**Bus Service Recalibration**

Washington Metropolitan Area Transit Authority  
**Board Action/Information Summary**

Action  Information

MEAD Number:  
201591

Resolution:  
 Yes  No

**TITLE:**

Recalibration of Metrobus Regional/Local Services

**PRESENTATION SUMMARY:**

This presentation discusses Metrobus' operational criteria and proposes updates that better reflect the role of Metrobus. It proposes Board considerations that could better align the portfolio of regional bus services with an updated set of definitions for regional and non-regional Metrobus service.

**PURPOSE:**

Discussions about examining local and regional Metrobus service began in earnest in 2010 when the Board began its work on a strategic plan. These discussions resurfaced in December of 2014 when then General Manager/Chief Executive Officer (GM/CEO) Richard Sarles proposed that the Board consider divesting non-regional bus service in order to satisfy a desire to significantly reduce Metro's operating subsidy. In response, the Board requested that this topic be discussed outside of the budget process with additional analysis completed in consultation with jurisdictional partners.

As requested by the Board, staff is returning to allow time for a more expanded conversation about the Metrobus service and business model, including whether Metrobus could operate regional service only. This presentation includes supplementary information and a strategic discussion about the operation of services currently provided by Metrobus.

**DESCRIPTION:**

Updating regional service criteria could push Metrobus towards a more coherent business model. Building upon recent conceptual planning work with input from the jurisdictional planners, staff proposes updating the regional service definitions using measurable criteria to reflect today's service performance. The proposed new regional service criteria are connectivity, productivity, directness, and guaranteed access. The definition and methodology of the proposed criteria are described in detail under the discussion section.

**Key Highlights:**

- Within the Metrobus network, 23 existing non-regional lines would qualify as the proposed regional service, and 21 existing regional lines would move out of the proposed regional service and become non-regional service.
- Regionally, there would be an increase of 10 regional lines in Maryland, a decrease of nine regional lines in Virginia, and one more regional line in the District of Columbia.

Staff explored a scenario for the transfer of non-regional services to the jurisdictions. This scenario evaluated the impacts of focusing Metro's resources on the regional service, while giving jurisdictional operators the chance to operate the non-regional service which would allow them more control over the service in their communities.

Such shifting of responsibility could coincide with expansion of the Metrobus network to include high performing jurisdictional routes that are regionally significant. This scenario identified those jurisdictionally operated routes with attributes most closely resembling Metro's proposed new regional network, and evaluated the feasibility and impacts of incorporating them into the Metrobus regional network.

### **Background and History:**

Metrobus was established in 1973, with the vision for a new regional bus system that would serve its customers with uniform, frequent, and reliable service. In 1999, Metrobus services were classified into "regional" and "non-regional" services. The definitions, which shape Metro's current bus subsidy allocation formula, were developed as part of the 1997 Blue Ribbon Regional Mobility Panel and were designed to improve regional equity in cost sharing and establish a framework for identifying and planning regionally significant bus services.

Currently, regional service is defined as a service that:

- Provides inter-jurisdictional connections with at least one-half mile of service in each jurisdiction, or;
- Meets two of the following three criteria:
  - Serves at least one Regional Activity Center (RAC) as defined by Metropolitan Washington Council of Governments (MWCOG);
  - Travels a considerable distance on arterial streets; or
  - Achieves cost efficiency at 30 passengers per platform hour.

Services not meeting the regional service criteria are defined as non-regional services. The corresponding business model separates the ownership and funding for regional and non-regional services:

- Regional service is owned and planned by Metro and is funded collectively by the District of Columbia, Maryland, and Virginia through a subsidy allocation formula.
- Non-regional service is owned and funded by the sponsoring jurisdiction, which determines service levels and funding

### **Today's Metrobus in Regional Context**

Currently Metrobus operates 106 regional lines and 55 non-regional lines, based on the 1997 definition of regional and non-regional services. Metrobus carries 70% of the bus ridership of the region and covers over 22% of the Compact's geographical area.

Today's Metrobus transports an annual ridership of 138 million and operates 161 bus lines with a fleet of 1,532 buses.

Since 1998, jurisdictional services have grown by 112% (26 million trips in 1998 vs. 55

million trips in 2013); during that same period, Metrobus' regional market share has decreased by 11% while jurisdictional service market share has increased by 9%. Some of this is supply-driven. During that time period, Metro's fleet has increased by 192 buses while the jurisdictions have increased their fleet by 415 buses.

However, there has been some level of individual route-level decision-making over the years that has resulted in some regional services that actually function and perform as non-regional services, and vice versa.

Consider, for example, that among the 106 regional lines:

- 29 regional lines (27%) operate in only one jurisdiction;
- 50 regional lines (47%) no longer meet the cost efficiency criterion; and
- 9 regional lines (8%) do not meet at least two of the criteria.

Meanwhile, some jurisdictions are now operating some routes that are regional by definition. These include: the Union Station-Georgetown Circulator Route, Ride On Bus Route 10 (Twinbrook-Glenmont-White Oak), and ART 41 (Columbia Pike-Ballston-Court House).

### **Discussion:**

The current operating conditions for Metrobus described above present numerous operational and funding challenges. For example, crossing jurisdictional boundaries in Virginia is potentially easier to facilitate due to the smaller size of the jurisdictions, whereas satisfying that criteria is more challenging in Maryland, which is comprised of only two very large jurisdictions. Additionally, there are regional routes that cross jurisdictional lines solely to access a Metrorail station such as District of Columbia routes that cross briefly into Maryland to access the Capitol Heights Metrorail station. Conversely, there are non-regional routes that function regionally. For example, the Metroway buses, which travel on a dedicated right-of-way and connect the jurisdictions of Alexandria and Arlington, are currently classified as non-regional.

### **Proposal**

New transit data technology and applications present opportunities for Metro to re-evaluate and update the regional service criteria. These concepts originated with input from jurisdictional service planners. In the past few months, Metro staff took the concepts a step further and developed measureable criteria using the up-to-date service data and in-house data technology. The proposed new regional service criteria are connectivity, productivity, directness, and guaranteed access.

- *Connectivity* means a regional line connects at least two RACs. The RACs, developed by MWCOG, provided a better alternative measure to connecting at least two jurisdictions, as RACs are the focal points of land use growth and transportation corridor development. Staff developed the connectivity criterion by overlaying bus stops with RAC data in the Geographic Information System (GIS) to capture the number of RACs on individual lines.
- *Productivity* measures ridership productivity in revenue hours. The current platform hour based criterion accounts for hours that a bus travels to and from the

garage. Given that Metro operates over a large area in the Compact, the facilities tend to be further away from the market in comparison to the jurisdictional services. Some regional lines providing long-haul services carry higher ridership but generate fewer passengers per platform hour, simply due to the fact that the buses travel far from the designated facilities. A measure in revenue hours can better reflect the true productivity of a bus service. The new productivity criterion is a composite measure combining weekday daily ridership with ridership per revenue hour.

- *Directness* dictates that a regional service must operate on arterial roads for at least 50% of the service, with linear point to point connections. Modern GIS capabilities allow Metro to identify these routes, which improves upon the old definition of “considerable distance”, which is subject to interpretation.
- *Guaranteed Access* acknowledges the importance of certain lines in maintaining a connective network. These lines include snow routes, and lines which significantly overlap with Metro’s most important bus corridors. These lines may also provide important linkages between other regional services, or be important to minimize transfer times.

Staff applied the criteria equally across the Metrobus network to update the regional service. Afterward, staff applied the same regional service criteria to all routes operated by the jurisdictional service providers and identified 13 jurisdictional routes that function as regionally significant services.

### **Business Considerations**

Building on the proposed new regional service definition, staff explored several possible business operating scenarios for Metrobus.

- Make no changes.
- Modernize regional services using new and more quantitative methods as described in the preceding section. This approach would update the regional and non-regional services in the Metrobus network, but would not change the current business model.
- Begin discussions to transfer some or all non-regional services to jurisdictions. This scenario evaluated the impacts of focusing Metro’s resources on the region’s most significant lines, while giving jurisdictional operators more choices regarding the services in their communities.
- Consider realigning services between jurisdictions and WMATA to best match the types of bus services provided with stated regional and local transit goals. This would entail the expansion of the Metrobus regional network to include high performing jurisdictional routes that are regionally significant. Staff identified those jurisdictionally operated routes with attributes most closely resembling Metro’s proposed new regional network, and evaluated the feasibility and impacts of incorporating them into the Metrobus regional network.

## **Further Opportunities**

Metrobus is due for a regional service update to better reflect its regional roles, yet the business model assessment shows that changes to the operational scale and market size alone would not significantly enhance cost efficiency, nor help Metro catch up with its current under-investment in Metrobus, to keep up with the state-of-good-operations (SOGO).

Today's bus operating environment is unsustainable, both operationally and financially. Growing traffic congestion and longer boarding times due to growth in demand have prolonged the scheduled bus travel times, resulting in less reliable service, longer passenger wait times, the use of more fleet just to keep the same headway, and ultimately higher operations costs.

Staff initiated several planning analyses to look at short-term actions that can speed up buses, improve on-time performance, and better serve our customers, including:

- Locating bus facilities to the areas of demand. Past decisions to relocate facilities from the central market to outer areas have increased Metrobus deadheading hours and operating costs. Between 2007 and 2015, the total deadheading cost went up by \$5M, and by 2025, another \$6M is expected.
- Building bus lanes and implementing off-board fare payment systems. Buses have lost travel speed and service reliability across all providers in the past 15 years. Based on the National Transit Database, while Metrobus lost about one mile per hour in the past decade, the jurisdictional services lost about three miles per hour. Case studies of bus lanes and off-board payment systems along selected Metrobus Priority Corridor Network (PCN) corridors would speed up passenger travel times and reduce operating fleet and operating costs, improving Metrobus' cost efficiency. Putting buses on bus lanes in the selected six PCN corridors in DC, MD, and VA would potentially save the region 12 buses and reduce the annual operating costs by \$7 million.

## **Next Steps**

In the fall, staff will return to the Board to discuss the aforementioned elements of Metrobus operations to further identify ways to increase operations efficiencies.

Subsequently, staff plans to undertake a new regional bus study to evaluate demand and align service at a corridor level, optimize operations between Metro and local providers, and better serve regional bus customers and the region in the next decade. This study would build upon the work completed to date and bring forth for consideration an optimized regional network of Metrobus services alongside regional bus providers, a hierarchy of service classes and roles, emphasize sound business planning and performance metrics from inception, and seek to simplify the existing bus route nomenclature(s).

**FUNDING IMPACT:**

Define current or potential funding impact, including source of reimbursable funds.	
Project Manager:	Shyam Kannan
Project Department/Office:	CHOS/PLAN

**TIMELINE:**

<b>Previous Actions</b>	December 2014 – General Manager Sarles introduced concept of returning local bus service to jurisdictions
<b>Anticipated actions after presentation</b>	September 2015 – Commence further analysis of potential business direction as decided upon by Board and commence regional bus study

**RECOMMENDATION:**

Staff recommends that in determining the business model in the near term, the Board consider replacing the current definition of regional service with the modern criteria for defining regional service – connectivity, productivity, directness and guaranteed access – and using the new criteria to redefine Metrobus regional service.



Washington Metropolitan Area Transit Authority

# Recalibration of Metrobus & Regional Bus Services

Customer Service & Operations Committee

September 10, 2015



# Purpose

Share work-to-date in response to the December 2014 Board budget discussion on Metrobus, specifically:

- Are there cost-savings were Metro to return local services to jurisdictions?
- What are the ways to improve the cost efficiency of Metrobus?





# Answering the Board's Questions

Q: Are there cost-savings if Metro divested local service to the jurisdictions?



Analyze performance of "local" and "regional" Metrobus service

Update and codify what we classify as "regional" bus service

Gather and compare Metrobus data against local operator data

Truly understand ways to improve cost efficiency of bus service



# Two Types of Metrobus Legacy of 1998 Board Action

## Regional Service:

Owned by Metro and funded by the region

Provides inter-jurisdictional connection (at least 1/2 mile in each)

**OR**

### **At least two of the following:**

- Services at least one COG Regional Activity Center (RAC)
- Travels a "considerable distance" on arterial roads
- Achieves cost efficiency

## Non-Regional Service:

Funded by the sponsor jurisdiction, which determines service levels

Any service not meeting the regional service criteria



# Two Types of Metrobus Legacy of 1998 Board Action

## Current Regional and Non-Regional Services (Weekday Service)

	Lines	Rev. Fleet	Annual Ridership	Annual Ops Cost	Annual Subsidy	Cost Per Trip
<b>Regional</b>	106	967	96M	\$336M	\$228M	\$3.50
<b>Non-Regional</b>	55	271	20M	\$90M	\$65M	\$4.50
<b>Metrobus Total</b>	<b>161</b>	<b>1238</b>	<b>116M</b>	<b>\$426M</b>	<b>\$293M</b>	<b>\$3.67</b>

Note: Revenue fleet reflects PM peak pull-outs. Cost estimates are based on the direct cost rate. Subsidy is the difference between direct cost and revenue.



# Are We Executing the Service Model?

Inter-jurisdictional service?

*27% regional lines operate in only one jurisdiction*

OR

At least two of the following?

( $\geq 1$  RAC, "considerable distance" on "arterial roads", cost efficiency)

- 47% regional lines are *below* cost efficiency threshold
- 8% regional lines *don't meet at least two criteria*

**Is this service truly "regional" in nature?**



Regional service only touches Prince George's County



Non-regional service on busway



Regional service doesn't meet any criteria



# A Truly Regional Service Model

## Today's Fiscally Regional:

- Relies on unspecific terms like "considerable distance"
- Does not utilize modern mapping and data collection technology
- Contains many routes that do not fit existing, flexible definitions



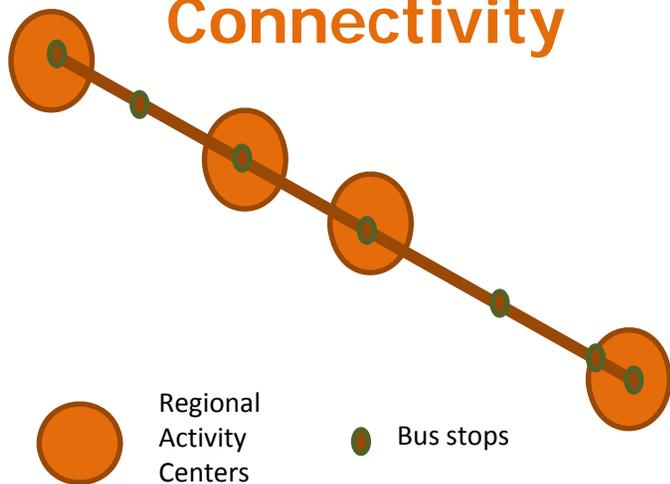
## Proposed Functionally Regional:

- Ensures included lines are truly functionally regional
- More equitably distributes routes by jurisdictions
- Applies most current data and mapping technology to ensure truly robust network

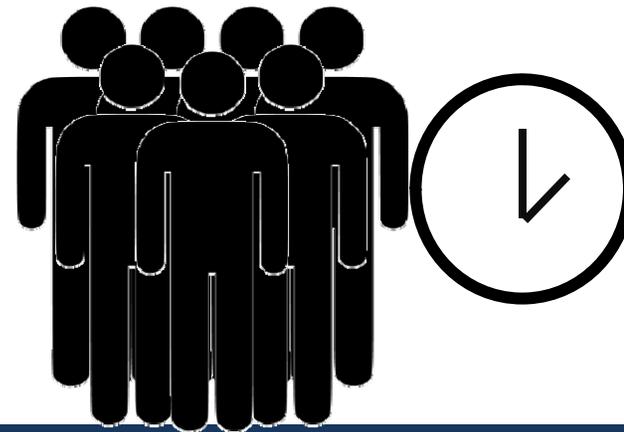


# Modernizing Regional Services

## Connectivity



## Productivity



## Directness

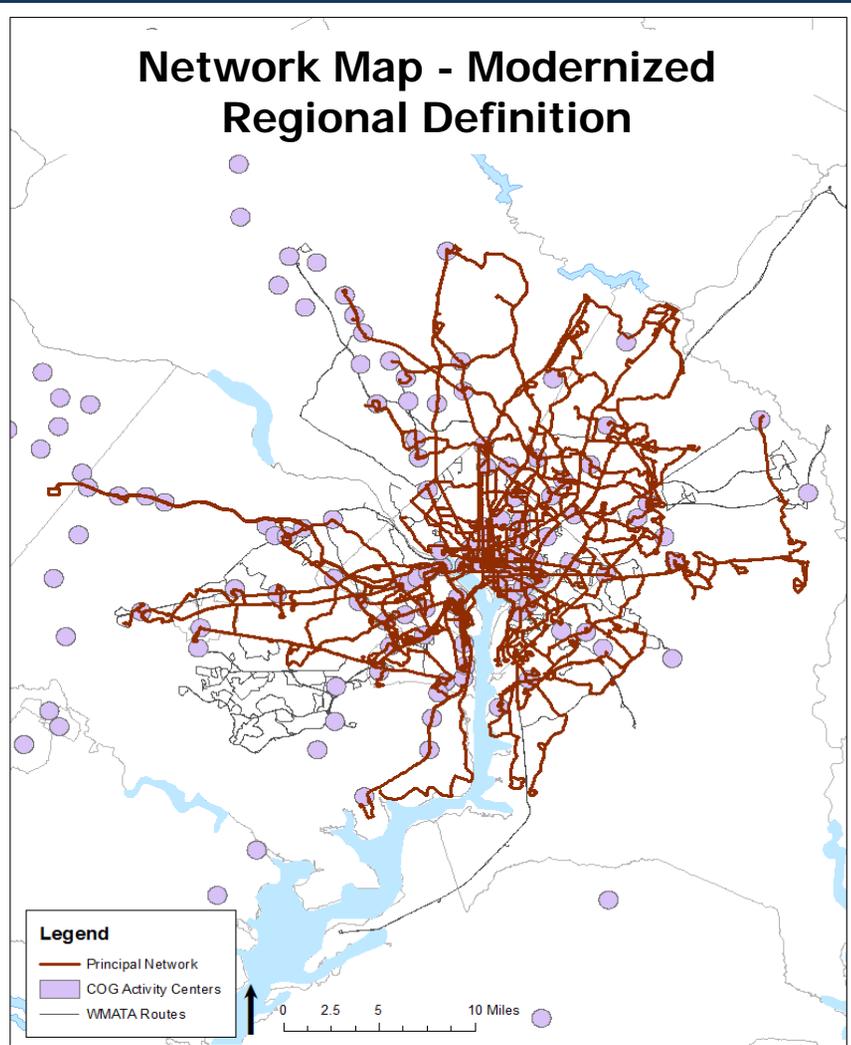


## Guaranteed Access





# Network Impact Modernized "Regional" Criteria



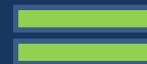
Current Regional Lines: 106



New Regional Lines: 23



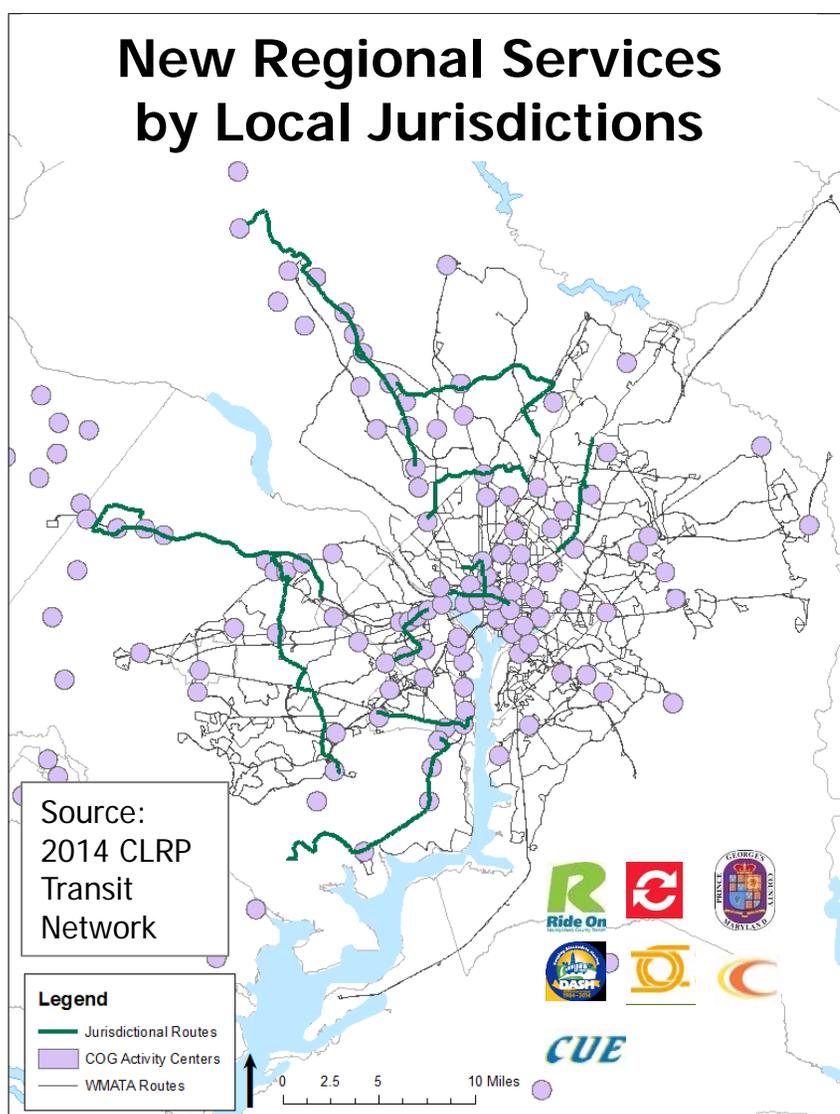
Existing Regional Lines: 21



Updated Regional Lines: 108

# What about Jurisdictions' Services?

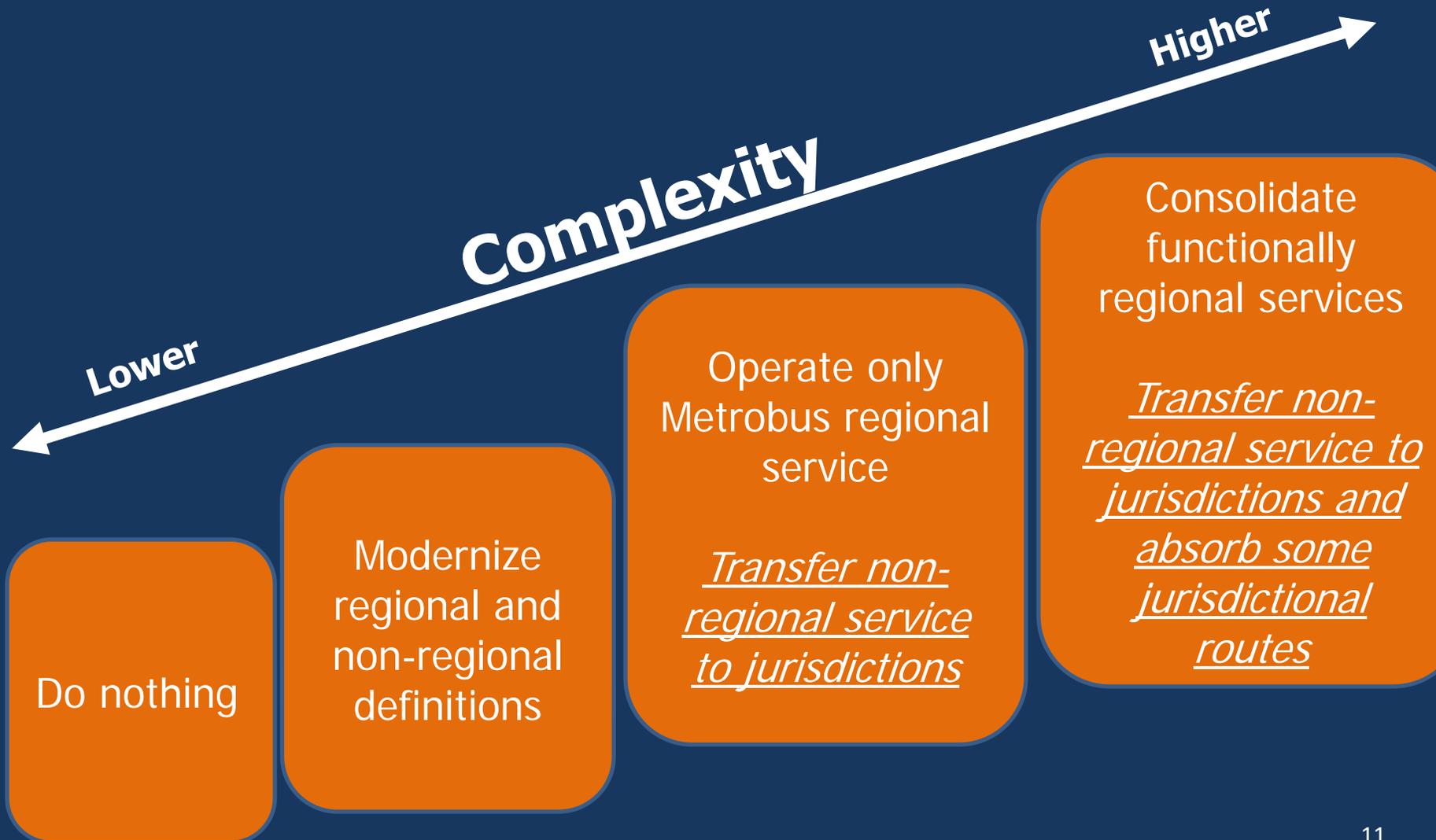
## New Regional Services by Local Jurisdictions



- 13 jurisdictional routes:
  - carry the characteristics of regional service
- OR
- significantly overlap with PCN
- Weekday ridership of 43,000
- Not all jurisdictions interested in exploring this idea further

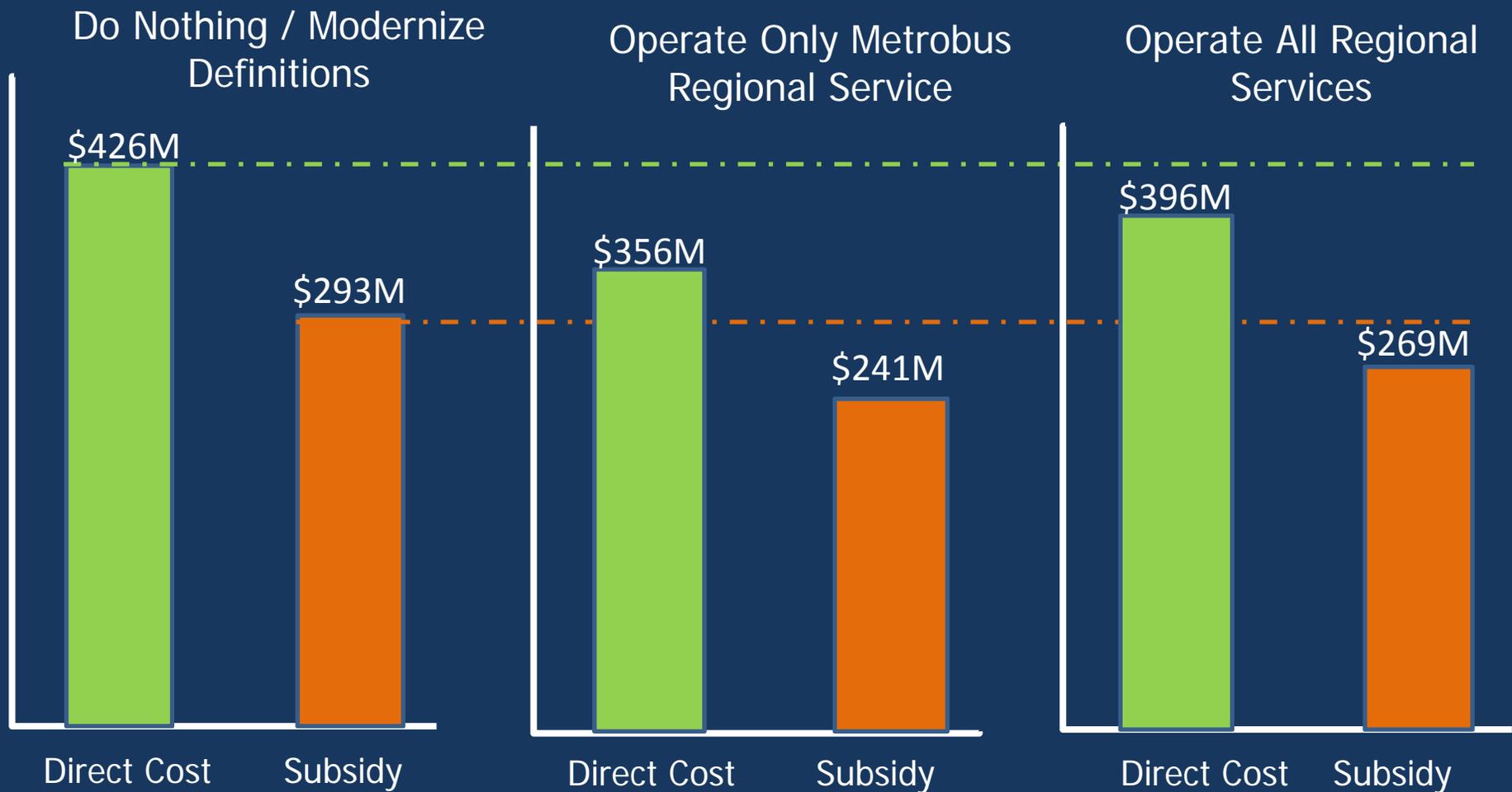


# Business Considerations





# Business Considerations Fiscal Impact to Compact Zone



Note: Weekday service costs only. Transfer options require additional capital investments.<sup>12</sup>



# Business Considerations Findings

Savings to WMATA may or may not mean savings to Jurisdictions

Local operators are not interested in shifting high performing service to WMATA

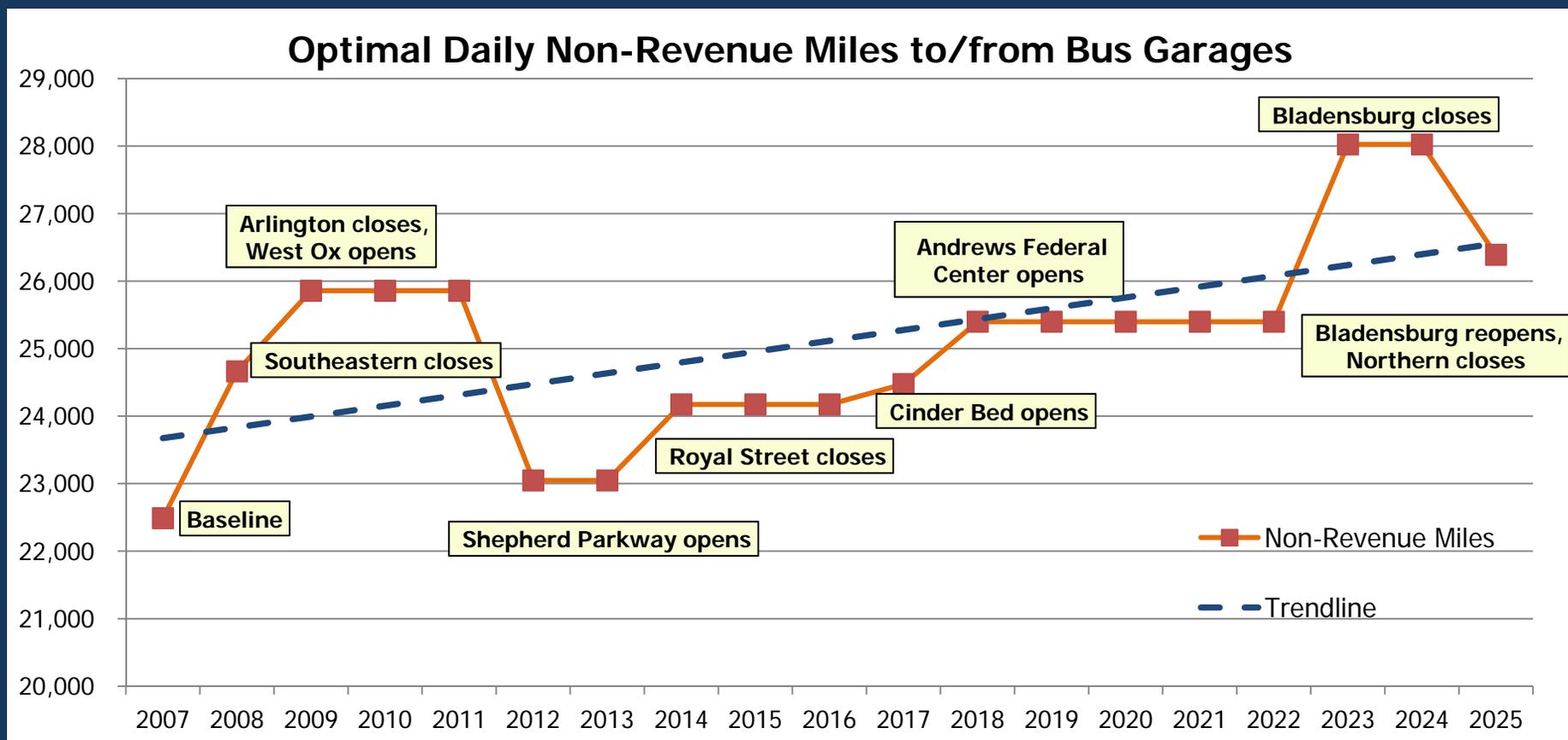


What can we do to enhance the cost efficiency of Metrobus operations?



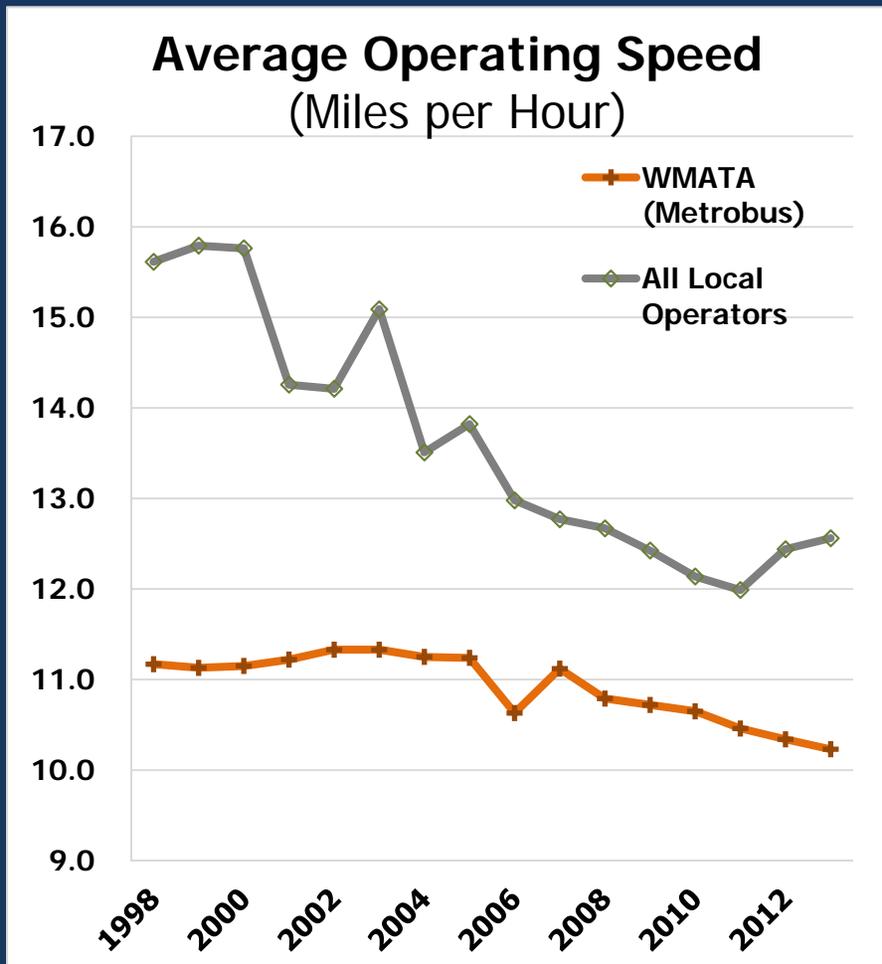
# Cost-Reducing Initiative #1 Control Non-Revenue Growth

- Past decisions to relocate facilities away from central market have cost consequences

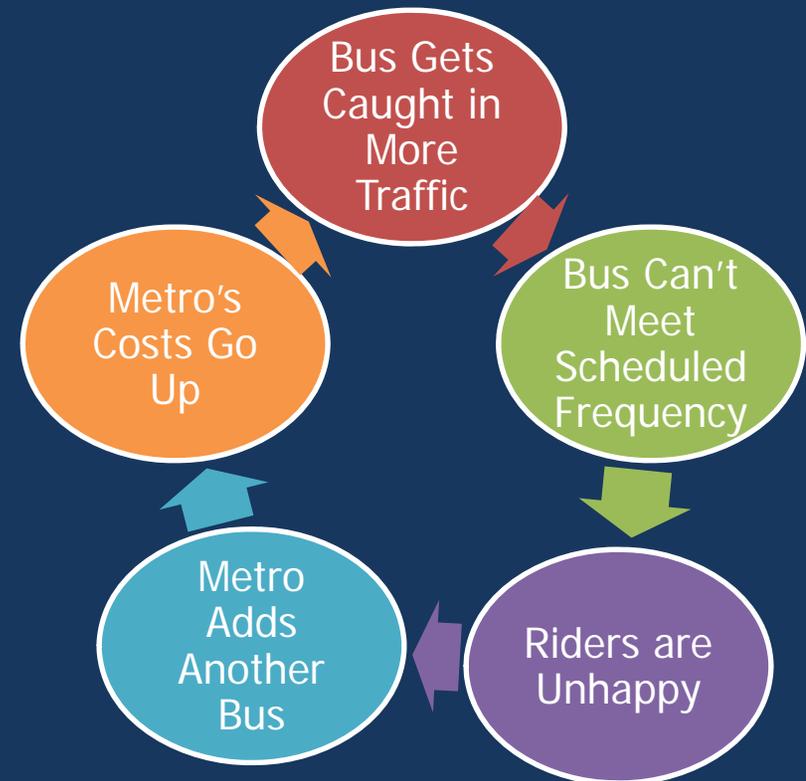




# Cost-Reducing Initiative #2: Break the Cycle of the Slow Bus!



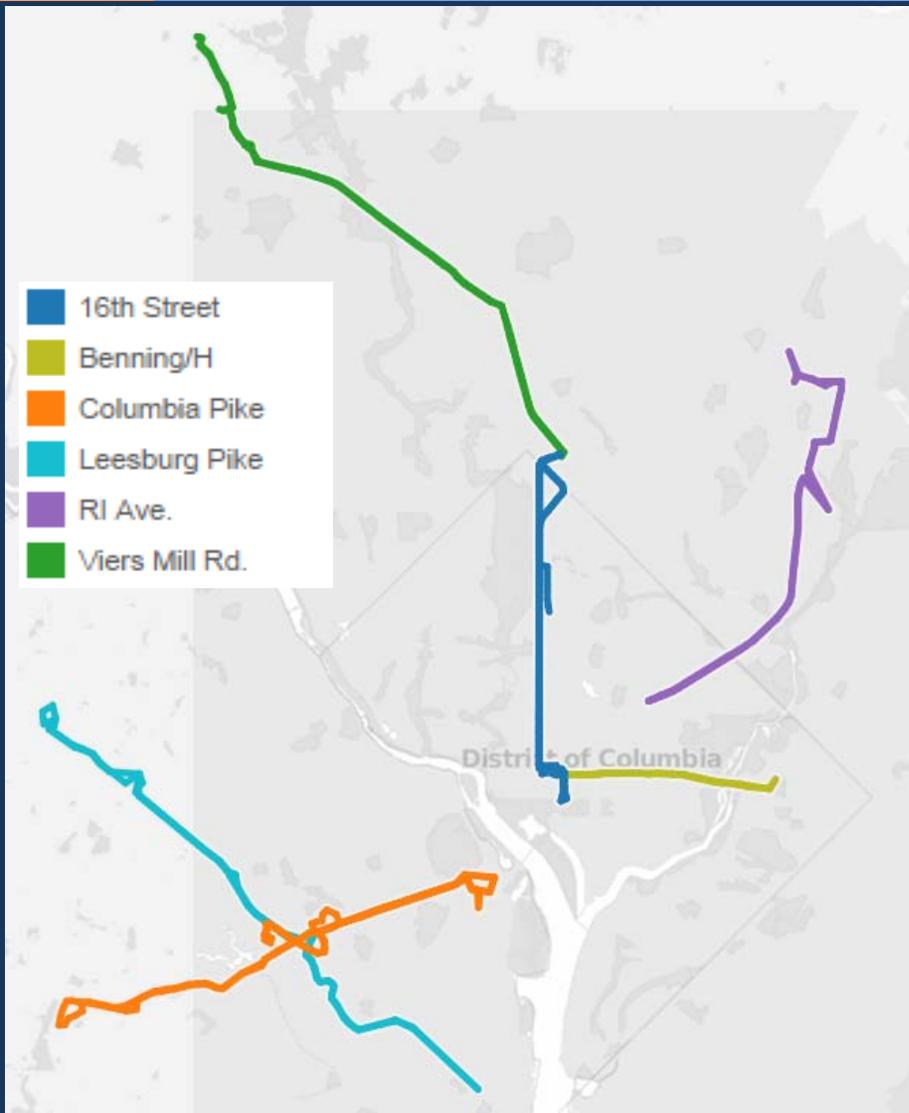
Source: National Transit Database



On DC's 16<sup>th</sup> Street, bus is moving slightly more than half of total trip time!



## Cost-Reducing Initiative #2: Break the Cycle of the Slow Bus!



- Proposed improvements
  - 10-20% gains in run times
  - Protection for the future
- Runningway improvements on **six** corridors
  - Achieve SOGO
  - Saves 12 buses
  - Saves \$7M/year
  - Require capital cost of \$26M

**Payback in 5 years**



# Cost-Reducing Initiative #3: Reduce Dwell Times

- Off-board fare payment increases speeds and reduces operating & capital costs
- Case study estimated annual operating savings: \$2.6M

Case Study Corridor	Buses Saved (Daily)	Operating Savings (Annual)
14th Street	4	\$355,700
16th Street	1	\$174,909
Georgia Ave	13	\$866,040
H St/Benning	8	\$653,138
Wisconsin/ Pennsylvania	7	\$561,059
<b>Total</b>	<b>33</b>	<b>\$2,610,846</b>



New York



Las Vegas



## Next Steps

- Adopt modernized regional service definition
- Explore funding for efficiency-improving Metrobus investments
- Initiate a regional bus study in FY16-FY17

