NVTC
NORTHERN VIRGINIA TRANSPORTATION COMMISSION

2020 REPORT ON THE

Performance & Condition

of the Washington Metropolitan Area Transit Authority

Submitted to
the Governor and
General Assembly
December 2020

NORTHERN VIRGINIA TRANSPORTATION COMMISSION

December 15, 2020

Chair
Hon. Katie Cristol

Vice Chair
Hon. Canek Aguirre

Secretary-Treasurer
Hon. Jeffrey C. McKay

City of Alexandria
Hon. Canek Aguirre
Hon. Elizabeth B. Bennett-Parker

Arlington County
Hon. Katie Cristol
Hon. Matt de Ferranti
Hon. Libby Garvey

Fairfax County
Hon. Walter L. Alcorn
Hon. John Foust
Hon. Jeffrey C. McKay
Hon. Dalia A. Palchik
Hon. James R. Walkinshaw

City of Fairfax
Hon. David Meyer

City of Falls Church
Hon. David F. Snyder

Loudoun County
Hon. Matthew Letourneau
Hon. Michael R. Turner

Commonwealth of Virginia
Hon. Paul C. Smedberg

Virginia General Assembly

Senate
Hon. John J. Bell
Hon. Adam Ebbin

House of Delegates
Hon. Eileen Filler-Corn
Hon. Paul Krizek
Hon. David Reid
Hon. Richard "Rip" Sullivan, Jr.

Executive Director
Katherine A. Mattice

On behalf of the Northern Virginia Transportation Commission (NVTC), I am pleased to submit the *2020 Report on the Performance and Condition of the Washington Metropolitan Area Transit Authority (WMATA)*. This is the third annual report fulfilling NVTC's responsibilities as established in § 33.2-3403 of the Code of Virginia, which directs NVTC to report on the performance and condition of WMATA and provide recommended strategies to reduce the growth in operating costs and improve efficiencies.

This year's report identifies several new NVTC recommendations to improve efficiency and reduce costs; recommendations that are even more important as WMATA and the region recover from the impacts of the COVID-19 pandemic. NVTC recommends that WMATA:

1) Communicate and encourage a safe return to transit
2) Adapt rail service to meet changing demands
3) Leverage regional expertise to improve Northern Virginia's bus network
4) Continue focus on ongoing initiatives to reduce the growth in operating costs and improve operational efficiencies

The report includes details on the expenditures of the WMATA Capital Fund, which provided $154 million in Virginia dedicated capital funding to WMATA in FY 2020 toward its $1.7 billion capital budget to support system safety and state of good repair improvements. In addition, the report includes available data on the safety, reliability, ridership and financial performance of Metrorail and Metrobus.

The COVID-19 pandemic has temporarily upended many of the gains WMATA had made in recent years, and greatly challenged its near-term financial picture. However, NVTC and its jurisdictions are committed to rebuilding Metrorail and Metrobus ridership and continues to press WMATA to encourage riders to return to the system.

Sincerely,

Katie Cristol

Katie Cristol
NVTC Chair

2300 Wilson Boulevard, Suite 230 · Arlington, VA 22201
Tel (703) 524-3322 · Fax (703) 524-1756
www.novatransit.org · Twitter @novatransit · www.facebook.com/novatransit

Table of Contents

Executive Summary

In its 2020 Report on the Performance and Condition of the Washington Metropolitan Area Transit Authority (WMATA), the Northern Virginia Transportation Commission (NVTC) continues to press WMATA to encourage riders to return to the system, align service to demand and work closely with our Northern Virginia transit operators to improve the efficiency of the bus transit network, all through the lens of the COVID-19 pandemic and the systemic challenges that will linger in the years ahead. The report also presents the last annual set of performance and condition data prior to the stay at home orders issued in the region and travel changes stemming from the COVID-19 pandemic.

NVTC's Strategies for WMATA to Reduce Costs and Become More Efficient

The General Assembly requires NVTC to recommend potential strategies to WMATA to reduce the growth in operating costs and to improve the efficiency of operations. NVTC's 2020 Annual Report on WMATA includes recommended strategies for WMATA to become more financially sustainable and a more effective transit system and mobility provider by rebuilding ridership. Prior to the COVID-19 pandemic, WMATA made significant progress in implementing several of NVTC's past recommendations and had seen promising signs that improvements in system reliability were rebuilding customer confidence and that rail and bus ridership were not just stable but increasing.

This year's report consolidates and restructures NVTC's recommendations around key priorities to improve efficiency and reduce costs, making these recommendations even more important as WMATA and the region recover from the impacts of the COVID-19 pandemic.

NVTC's 2020 recommendations to WMATA:

- **Communicate and encourage a safe return to transit** by highlighting and promoting enhanced safety efforts during the COVID-19 pandemic and developing a long-term, post-pandemic marketing and communications strategy to rebuild ridership.
- **Adapt rail service to meet changing demands** during the COVID-19 pandemic and the region's subsequent recovery period while maintaining an equitable, baseline level of service across all Metrorail lines.
- **Leverage regional expertise to improve Northern Virginia's bus network** by working with local and state partners to improve the efficiency of the bus network, support implementation of bus priority projects, improve bus speeds and optimize transit networks.
- **Continue focus on ongoing initiatives to reduce the growth in operating costs and improve operational efficiencies** using NVTC's previously recommended strategies in past annual reports on the performance and condition of WMATA.

WMATA's FY 2020 Dedicated Capital Funding Investments

In FY 2020 WMATA invested $1.7 billion in capital projects, $154 million of which comes from Virginia's portion of WMATA's dedicated capital funding. Most of the capital budget was invested in state of good repair projects that keep the system safe and reliable such as:

Implemented Work-Efficiencies to Advance Capital Projects
WMATA leveraged low ridership due to the COVID-19 pandemic by combining the Summer 2020 Platform Improvement Project with a separate project of the Metropolitan Washington Airports Authority (MWAA) to connect Phase 2 of the Silver Line to the existing rail network.

Accepted the Final 7000-Series Rail Car
WMATA conditionally accepted its 748th and final 7000-Series rail car in the fourth quarter of FY 2020. The 7000-Series railcars have replaced legacy 1000, 4000 and 5000-Series rail cars, and WMATA has issued a Request for Proposals for 8000-Series Railcars.

Launched a New Mobile Payment App
Mobile fare payments are now accepted anywhere SmarTrip is used including Metrorail stations, Metrobus, Metro-owned parking garages and on all local bus systems with SmarTrip, including DASH, ART, Fairfax Connector, CUE, Loudoun County Transit and OmniRide.

West Falls Church Platform **Before** Improvements

West Falls Church Platform **After** Improvements

Completed Phase 2 of the Platform Improvement Project
WMATA completed Phase 2 of the Platform Improvement Project at East Falls Church, West Falls Church, Dunn Loring and Vienna Metrorail Stations.

With 24-hour access to the project sites, workers completed additional work beyond platform reconstruction. This work included platform shoring, installation of platform floor tiles, skylight installation, concrete crack repairs, CCTV camera installation, electrical conduit wiring, fire alarm wiring and fire standpipe installation at all stations.

As of September 2020, all four stations were rebuilt and reopened to the public with features such as slip resistant tiles, new platform shelters with charging stations, additional passenger information display screens and additional LED lighting.

Preface

The Northern Virginia Transportation Commission (NVTC)[1] is charged with the funding and stewardship of the Washington Metropolitan Area Transit Authority (WMATA) on behalf of the jurisdictions of Arlington County, City of Alexandria, City of Falls Church, Fairfax County, City of Fairfax and Loudoun County. Founded in 1964, in part to represent the interests of the Commonwealth during the creation of Metrorail, NVTC continues to serve as Virginia's voice on the WMATA Board of Directors[2] through its appointments to the panel. NVTC also manages more than $159 million in state assistance to WMATA on behalf of its jurisdictions. Finally, NVTC ensures that all its jurisdictions' voices are represented on the WMATA Board, conducts Northern Virginia's regional transit response program, coordinates regional transit fare collection efforts and engages in regional transportation planning, data analysis, and reporting, which provides direct benefits to WMATA and the related Northern Virginia transit network.

This report fulfills the requirements of Section § 33.2-3402 of the Code of Virginia, pursuant to Chapter 854 of the 2018 Virginia Acts of Assembly, specifying that NVTC report annually on the performance and condition of WMATA, for both Metrorail and Metrobus. Per statute, the report addresses six elements:

- Potential strategies to reduce the growth in such costs and to improve the efficiency of WMATA operations
- Use of the dedicated capital funds authorized by the legislation to improve the safety and condition of the rapid heavy rail mass transportation system
- The safety and reliability of the rapid heavy rail mass transportation system and bus network
- The financial performance of WMATA related to the operations of the rapid heavy rail mass transportation system, including farebox recovery, service per rider and cost per service hour
- The financial performance of WMATA related to the operations of the bus mass transportation system, including farebox recovery, service per rider and cost per service hour
- Ridership of the rapid heavy rail mass transportation system and the bus mass transportation system

Introduction

On March 11, 2020 the World Health Organization declared the COVID-19 virus a universal pandemic, setting in motion a series of actions at all levels of government that have impacted transit systems and riders in a way not experienced in generations.[3] The executive actions imposed in the Commonwealth of Virginia, the State of Maryland and the District of Columbia – such as stay-at-home orders, mandatory business closures, social distancing requirements and office closures – resulted in a precipitous drop-off in both transit demand and ridership. Ridership for Northern Virginia's two rail systems – WMATA and Virginia Railway Express (VRE) – declined as much as 95% within weeks of the first orders. Metrobus and the six local transit providers across Northern Virginia, which complement the heavy rail systems, also saw significant drops in ridership.[4]

With the sudden and significant loss of fare revenue, the additional and unplanned expenses to ensure the safety and cleanliness of transit and the abrupt loss of revenue to local jurisdictions that support transit in Northern Virginia, transit systems face significant financial shortfalls that will likely last for years.

Thanks to Congress' passage of the Coronavirus Aid, Relief and Economic Security (CARES) Act in March 2020, Northern Virginia jurisdictions that fund WMATA, VRE and local transit systems were able to receive short-term financial relief. However, WMATA, the largest recipient of CARES Act funding, projects those funds will be depleted by January 2021 even as WMATA continues to implement enhanced safety measures to respond to the COVID-19 pandemic.[5] If Congress provides no additional federal funding, WMATA anticipates potential layoffs, Metrorail and Metrobus service cuts and additional cost saving measures.[6]

In addition, on March 17, 2020 the Commonwealth Transportation Board (CTB) provided emergency funding to maintain critical local transit service in Northern Virginia and across the Commonwealth.[7] The Commonwealth continues to adapt to the challenging budget implications created by the public health emergency. The General Assembly passed an amendment to the 2020 – 2022 Budget that would allow CTB the flexibility to use transit capital and special funds for operating purposes, minimizing the impacts of the COVID-19 pandemic on local transit operators.[8]

The impact of the COVID-19 pandemic will be felt in the transit industry for several years to come. NVTC will continue to work with WMATA, as well as local transit operators and VRE, to safely get riders back on transit.[9]

How has WMATA responded to the COVID-19 pandemic?

Pandemic Flu Plan

On January 29, 2020 WMATA activated its Pandemic Task Force, an agency-wide team of senior-level officials from key departments.[10] The task force initiated WMATA's pre-existing Pandemic Flu Plan. The plan has four phases. The initial phase focuses on monitoring and preparedness, and Phase 2 ensures WMATA's readiness to respond quickly in the event of an outbreak in the region. WMATA moved to Phase 3 of its Pandemic Flu Plan on March 13 and implemented emergency service changes and made other adjustments to protect employees and customers. WMATA implemented the following measures to protect the health and safety of the public and frontline employees[11]:

- Daily cleaning and disinfecting of trains, buses and stations with mopping, wiping down high-touch surfaces or using electrostatic foggers
- Regular deep cleaning of stations
- Required all employees and customers to wear face masks
- Installed plexiglass barriers where appropriate
- Reconfigured office spaces to allow for proper physical distancing and implemented telework when possible
- Ensured handwashing facilities and/or hand sanitizer is available to employees
- Created a system for employees to report exposure to the COVID-19 virus
- Immediate disinfection of a train, bus or station once Metro receives a report of bodily fluids or an ill customer on the system
- Rear-door boarding and waived fares to provide a buffer between customers and Metrobus Operators. WMATA anticipates returning to front-door boarding and fare collection on Metrobus in February 2021
- Prior to the pandemic buses were equipped with Bus Operator safety shields to provide a physical barrier separating the Operator's compartment from customers

Phase 4 of the Pandemic Flu Plan is WMATA's return to normal operations after the situation is under control.

Recovery Plan

In May, WMATA released details of its COVID-19 recovery plan, which outlines a flexible blueprint for ramping up service.[12] The phases of the plan coincide with the relaxing of stay-at-home policies, return to workplaces and the widespread availability of testing, treatment and a vaccine, among other scenarios.[13]

- Stabilization Phase (May – August 2020): The stabilization service plan was implemented in May and adjusted in June to improve Metrobus route efficiency and reduce crowding. During this phase, Metrorail and Metrobus service represented 35% of normal peak service while implementing enhanced cleaning protocols for the COVID-19 pandemic.
- Managed Re-Entry Phase (Implemented August 2020): The managed re-entry phase was implemented in August as local governments begin to lift some COVID-19 pandemic restrictions. During this phase, Metrorail returned to regular opening times, closing at 11 p.m. each night with near-normal peak and off-peak service. WMATA restored Metrobus service to nearly 73% of pre-pandemic levels on weekdays, 87% on Saturdays and 86% on Sundays. WMATA currently anticipates being in the managed re-entry phase of the recovery plan for the remainder of 2020. In order to address expected budget gaps, following a public input period, the WMATA Board is anticipated to make additional adjustments to rail and bus service that will take effect in February 2021.

- Recovery Phase (Expected 2021): The recovery phase is the return of pre-pandemic service levels when social distancing and other supplemental safety measures is no longer necessary. The U.S. Centers for Disease Control and Prevention (CDC) guidance suggests that this phase is likely to occur in 2021.

Impact of the COVID-19 pandemic on WMATA's Capital Improvement Plan

Regional stay-at-home policies and federal guidance confirmed that construction activities were considered "essential services" during the COVID-19 pandemic. This designation allowed WMATA to leverage periods of low ridership to advance projects within its capital improvement program. In doing so, WMATA was able to combine the schedules of its two biggest capital priorities in Virginia: rebuilding Metrorail station platforms and connecting Silver Line Phase 2 to the existing rail network.

WMATA worked with its contractors to revise construction safety protocols to incorporate the CDC guidance for hand and tool washing, social distancing and wearing face coverings at project sites. The 2020 Platform Improvement Project to reconstruct platforms at four Orange Line stations combined schedules with a separate project of the Metropolitan Washington Airports Authority (MWAA) to connect Phases 1 and 2 of the Silver Line which necessitated the additional closure of the five existing Silver Line stations.[14] Due to work proceeding faster than the original schedule, WMATA returned Silver Line service and reopened six Fairfax County Metrorail stations weeks earlier than originally planned. In August 2020, WMATA also began reconstructing the platform at Ronald Regan Washington National Airport Station, which was previously scheduled to begin in fall 2022 or spring 2023.[15]

What does the COVID-19 pandemic mean for the 2020 report?

Initial impacts of the COVID-19 pandemic on WMATA's condition and performance are included in this report. However, it is important to provide context and inform readers that this and future reports will show the impacts of the COVID-19 pandemic. Below is an overview of the impact of the COVID-19 pandemic on different sections of the 2020 report:

Strategies to Reduce the Growth in Costs and Improve Operational Efficiencies (Chapter 1)

The General Assembly requires NVTC to recommend potential strategies to WMATA to reduce the growth in operating costs and improve operational efficiency. In the 2018 and 2019 NVTC reports to the General Assembly, the Commission made several policy and program recommendations that will help WMATA improve efficiency, increase ridership and increase revenue. The previous recommendations still stand and will help WMATA meet these goals.

The public health emergency has drastically impacted ridership and forced WMATA to either delay a number of policy initiatives or defer these initiatives to a future year when the policy would be more appropriate for the circumstances (i.e. post-pandemic). In addition, changes to travel behavior due to the rise in teleworking further necessitate NVTC's recommendations to rebuild Metrorail and Metrobus ridership. NVTC will continue to pursue the implementation of past recommendations through continued engagement with WMATA. However, the current magnitude of the financial crisis brought about by the COVID-19 pandemic is immense and requires solutions beyond these policy recommendations, namely additional federal aid.

Use of Dedicated Capital Funds (Chapter 2)

The COVID-19 pandemic impacted WMATA's capital improvement program. Due to a significant drop in ridership due to stay at home orders and overall reduced demand due to the pandemic, WMATA has been able to accelerate several aspects of the FY 2020 capital program. For example, the 2020 platform improvement work on the Orange Line was accelerated and some stations were re-opened several weeks sooner than planned; the work necessary to integrate Phase 2 of the Silver Line into the existing system was accelerated and reconstruction of the platforms at Reagan Washington National Airport station was started two years earlier than planned.

Safety, Reliability, Financial and Ridership Performance Data (Chapters 3 – 5)

A large portion if this report is dedicated to tracking the key safety, reliability, financial and ridership metrics shown in chapters three to five. Data included in the report (Table 1) come from the National Transit Database (NTD) and WMATA Metro Performance Reports (MPR). Some data points have a lag of 12 to 18 months, meaning that most of the data (except for reliability metrics) provided in the 2020 report will not reflect the impact of the COVID-19 pandemic.

Table 1: Data Sources and Years Presented in this Report

Report Category	Latest Year for which Data is Publicly Available	Data Source
Safety	Calendar Year 2019	NTD
Reliability	Fiscal Year 2020	MPR
Financial Performance	Fiscal Year 2019	NTD
Ridership	Fiscal Year 2019	NTD

In order to address this situation, each data chapter includes qualitative and quantitative data from sources not typically cited. This approach allows readers of this report to understand the impact that the pandemic has had on WMATA. Data in future reports will include the effects of COVID-19 pandemic.

---

[1] The Northern Virginia Transportation Commission (NVTC) was established to manage and control the functions, affairs and property of the Northern Virginia Transportation District, which was created by the 1964 Acts of Assembly of the Commonwealth of Virginia, Chapter 630, and the Transportation District Act. The purpose of the Act is to facilitate "planning and developing a transportation system for Northern Virginia and for the safety, comfort and convenience of its citizens and for the economical utilization of public funds" The duties and powers of the Commission are set in Sections §§ 33.2-1900 through 33.2-1934 of the Virginia Code.

[2] The WMATA Board of Directors, established through an interstate Compact between Virginia, Maryland and the District of Columbia, determines agency policy and provides oversight for funding, operations and the expansion of transit facilities.

[3] World Health Organization. "World Health Organization's General Director's Opening Remarks on COVID-19." Pg. 1. March 11, 2020. <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>

[4] WMATA. "COVID-19 Recovery Planning Update." Pg. 3. May 14, 2020. <https://www.wmata.com/about/board/meetings/board-pdfs/upload/3A-COVID-19-Recovery-Final.pdf>

[5] U.S. Department of Transportation. "Fiscal Year 2020 CARES Act Supplemental Public Transportation Apportionments and Allocations." Pg. 1. Accessed July 8, 2020. <https://www.transit.dot.gov/cares-act-apportionments>
[6] WMATA. "FY 2021 Budget Update and FY 2022 Budget Outlook." Pg. 3 September 10, 2020. <https://www.wmata.com/about/board/meetings/board-pdfs/upload/20200916-BOARD-3A-FY21-PH-Auth-and-Bus-Fare.pdf>.
[7] Commonwealth Transportation Board. Pg. 1. March 17, 2020. <http://www.drpt.virginia.gov/media/3071/ctb-resolution-transit-support-for-covid-19-response-and-impacts-march-2020-v3.pdf>
[8] 2020 Acts of the General Assembly. "2020 – 2022 Budget." pg. 165. October 16, 2020. <https://budget.lis.virginia.gov/get/amendmentpdf/4260/>
[9] NVTC has received a DRPT grant to support a "back to transit" marketing campaign that will focus on how to safely and confidently return riders to transit; this effort is anticipated to begin in early 2021 or as soon as practicable.
[10] WMATA. "Approval of Dedicated Bond Resolution and Issuance." Pg. 197. April 23, 2020. <https://www.wmata.com/about_metro/board_of_directors/board_docs/TransmittalDocs/041720_Board_Full_Pkg_wo_Debt_Policy_2020-04-27.pdf>
[11] WMATA. "Enhanced Cleaning Protocols for COVID-19." Pg. 1. Accessed September 10, 2020. <https://www.wmata.com/service/covid19/covid19-cleaning.cfm>.
[12] WMATA. "Metro's gradual recovery plan promotes safety first, while ramping up regional mobility." Pg. 1. May 11, 2020. <https://www.wmata.com/about/news/covid-19-gradual-recovery-plan.cfm>
[13] Ibid
[14] WMATA. "Silver Line service will return August 16, along with reopening of six stations in Fairfax County." Pg. 1. June 24, 2020. <https://www.wmata.com/about/news/Silver-Line-reopening.cfm>
[15] WMATA. "Platform reconstruction at Reagan National Airport Station to begin August 7." Pg. 1. July 23, 2020. <https://wmata.com/service/rail/PlatformProject/Platform-reconstruction-at-Reagan-National-Airport-Station-to-begin-August-7.cfm>

1. Strategies to Reduce the Growth in Costs and Improve Operational Efficiencies

§ 33.2-1526 of the Code of Virginia, pursuant to Chapter 854 of the 2018 Virginia Acts of Assembly, requires WMATA to constrain the growth of its operating subsidy. For Virginia, the cities of Alexandria, Falls Church and Fairfax, as well as the counties of Arlington, Fairfax and Loudoun (with the start of Silver Line Metrorail Phase 2) are ultimately responsible for paying WMATA's capital and operating obligations. These jurisdictions have a vested interest in ensuring that WMATA reduces the growth in operating costs so that its annual operating subsidies increase in line with legislative requirements.[16]

The COVID-19 pandemic threatens to undermine transit agencies across the county, including WMATA. Prior to the pandemic, WMATA reported promising ridership statistics, highlighting a boost in customer confidence for WMATA's reliability and on-time performance. The pandemic has caused dramatic declines in WMATA's ridership and revenue, which have created significant budget gaps. The strategies presented in this chapter will not single-handedly address WMATA's challenges during and after the pandemic, but they should be viewed as mid- to long-term solutions that can aid in WMATA's pandemic recovery.

In previous annual reports on the performance and condition of WMATA, NVTC identified strategies to reduce WMATA's growth in costs and improve operational efficiencies. This chapter consolidates and restructures NVTC recommendations from previous reports into the following four categories:

- Rebuild Metrorail & Metrobus Ridership
- Improve the Operational Efficiency of Metrorail and Metrobus
- Increase Non-Fare Revenues
- Control Cost Escalation and Enhance Efficiency of the Workforce and Contracted Services

Each category includes 1) **Recommended Strategies** that the Commission believes are actionable by WMATA (i.e. study or implement) and 2) documentation of **Ongoing Efforts at WMATA** that support previous NVTC recommendations that are constantly recurring and do not have a fixed point of completion.

These recommendations include a mix of short and long-term operating strategies to improve efficiency. Some strategies can be implemented by the WMATA Board of Directors or the WMATA General Manager/CEO and many strategies can be implemented during the annual budget process where WMATA considers fiscal constraints, public hearing requirements and equity concerns. It is important to note that other recommendations may be outside of WMATA's purview and would require structural or legislative changes from other legislative bodies or agencies.

WMATA has made progress toward stabilizing its operating costs and improving efficiency in ways that reflect NVTC strategies. However, without changes to WMATA's operating model, operating cost increases are predicted to outpace revenue growth according to WMATA's 2019 adopted strategic plan.[17]

Strategy 1: Rebuild Metrorail & Metrobus Ridership

Over the past decade, overall WMATA ridership has declined and farebox recovery has decreased, so rebuilding Metrorail and Metrobus ridership is critical to improving the efficiency of the system and to controlling subsidy growth by increasing farebox revenue.

The following recommendations are intended to attract new riders or optimize revenues from existing riders. For many of these recommendations, WMATA has efforts underway in some form, but from the perspective of the Commission these efforts are not yet complete.

Recommendations by NVTC

Recommended Strategies to Rebuild Metrorail & Metrobus Ridership	
Communicate and encourage a safe return to transit	• Continue to highlight and promote enhanced safety efforts during the pandemic • Develop a long-term, post-pandemic marketing and communications strategy to rebuild ridership
Improve weekend rail service	• Examine additional solutions to better balance maintenance activities and the impacts of service disruptions on weekend ridership • Develop customer-focused service standards and operating procedures for planned weekend service disruptions in order to minimize disruptions to service
Optimize parking facilities	• Assess and consider reducing parking rates at additional, underutilized WMATA-owned Metrorail parking facilities • Work with local jurisdictions to use parking policy to encourage riders to park at underutilized stations to optimize revenue from parking facilities and the fare box
Develop, expand and enhance fare pass and other parking pass products to promote more frequent rail and bus ridership and increase customer satisfaction	• Perform a study to identify fare pass products that address unmet market demand (ex. family passes) and make purchasing them easier to understand through improved marketing • Develop a subscription-based parking pass for transit riders to increase revenues at Metrorail stations with parking facilities
Develop the next generation of fare collection technology and support strategic fare collection initiatives	• Promote usage and expansion of mobile fare payment, which WMATA introduced in September 2020[18] • Coordinate fare collection modernization efforts and other initiatives such as all-door boarding or off-vehicle fare collection with NVTC's implementation of the priorities and actions outlined in the Northern Virginia Fare Collection Strategic Plan

Communicate and encourage a safe return to transit

WMATA has taken critical measures to safeguard riders and employees during the pandemic through free mask distribution, contactless fare payment with the new mobile app and aiming to provide enough service for social distancing. However, concerns surrounding the safety of the system remain as potential riders may still be unaware of WMATA's efforts to enhance safety. To

respond to those concerns, WMATA developed a communications strategy that began in the fall of 2020 to reassure customers that returning to transit is safe.[19] NVTC is committed to supporting WMATA, as well as VRE and local transit operators in Northern Virginia, with efforts to get riders back on transit. Leveraging a DRPT grant, NVTC will launch a complementary "back to transit" marketing campaign in early 2021 to encourage the public to safely and confidently return to transit.

WMATA expects a gradual recovery and even indicated a potential scenario in which ridership could remain low after the introduction of a vaccine due to low acceptance and fear among the public.[20] Because the long-term impacts of the COVID-19 pandemic on riders' perception of transit are unknown, WMATA must identify strategic and innovative methods to attract and retain riders after the COVID-19 pandemic subsides. While NVTC supports WMATA's ongoing efforts to allay riders' concerns and attract ridership during the pandemic, NVTC also encourages WMATA to develop a long-term, post-pandemic marketing and communications strategy to rebuild both ridership and confidence in transit.

Improve weekend rail service

NVTC proposes that WMATA examine additional solutions to better balance maintenance activities and the impacts of service disruptions on weekend ridership. Preventative maintenance and capital project work during operating hours on Metrorail are often accompanied by service disruptions, increased wait times for trains or additional transfers, all of which have a negative impact on service and weekend ridership.[21] Capital improvement projects and rehabilitation work are critical to bringing the system to and maintaining a state of good repair. NVTC encourages WMATA to consider developing customer-focused service standards and operating procedures for planned weekend service disruptions in order to minimize impacts on riders. These could be similar to the guidelines WMATA established as part of its Platform Improvement Project, which included strategies to communicate disruptions to customers, retain riders during major shutdowns and ways to execute work more efficiently.[22] [23]

Optimize parking facilities

WMATA manages nearly 60,000 parking spaces at 44 Metrorail stations throughout the region and, prior to the COVID-19 pandemic, had both underutilized parking facilities and facilities that are at or over capacity during the weekday. NVTC proposes that WMATA assess and consider reducing parking rates at additional, underutilized WMATA-owned Metrorail parking facilities.[24] Parking utilization directly correlates to ridership at Metrorail stations and generates revenue from both the parking fees and rider fares.[25] WMATA successfully piloted and ultimately made permanent a lower parking rate of $3 at the West Falls Church and Landover Metrorail Stations.[26] The pilot encouraged existing transit riders to ride the system more frequently and resulted in an overall increase in ridership and net revenue.[27] NVTC supports WMATA's efforts to work with local jurisdictions to use parking policy to encourage riders to park at underutilized stations to optimize revenue from parking facilities and the fare box.

Develop, expand and enhance fare pass and other parking pass products to promote more frequent rail and bus ridership and increase customer satisfaction

WMATA operates in an increasingly competitive market and one way to make WMATA more competitive is to offer fare pass products that make it easier and more affordable to use the system.[28] WMATA currently offers a suite of fare pass products which range from one-day to monthly unlimited passes. Analysis of SmarTrip card data shows three primary groups of riders: core customers, day trippers and visitors; but only 10% of these primary riders have fare passes, creating an opportunity for WMATA to benefit by increasing fare pass utilization among these groups.[29] Riders have responded positively to fare pass products and making them easier to afford and understand will increase ridership and generate more revenue in the long-run.[30]

NVTC proposes that WMATA perform a study to identify fare pass products that address unmet market demand and make purchasing them easier to understand. A comprehensive fare pass study could identify more markets (ex. monthly parkers, teleworkers, those on flexible work schedules and/or families with children) for WMATA's fare pass products to attract riders and ensure the agency captures the most revenue from its fare pass program. The recent introduction of a mobile payment app also offers the opportunity to increase the adoption of pass products by providing a convenient platform to buy, manage and market passes.

NVTC also proposes that WMATA develop a subscription-based parking pass for transit riders. This would expand customers' options for how they pay for parking, as well as encourage more trips from suburban stations because users could receive a small discount by pre-paying for parking for the month. WMATA currently offers a subscription-based transit pass to ride Metrobus and Metrorail at a discounted rate. With a subscription-based parking pass, a transit user could purchase this pass product for unlimited use of Metrorail parking facilities as a transit rider within a fixed period of time.[31] As part of its COVID-19 Recovery Plan, WMATA proposed the concept of a more flexible pass for riders who also have some level of teleworking.[32]

Ongoing Efforts at WMATA that Support Previous NVTC Recommendations

WMATA has made rebuilding Metrorail and Metrobus ridership a key component of its annual budget process and its strategic plan. There are numerous ongoing efforts that document WMATA's efforts to implement NVTC recommendations to rebuild ridership.

Ongoing Efforts at WMATA to Rebuild Metrorail & Metrobus Ridership	
Pursue capital investments that increase the reliability of the system	• WMATA has scaled up its level of capital investment and reduced its state of good repair backlog from $7.1 billion to $5 billion.[33] The largest decreases were in vehicles and track and structures where substantial investments were made, including the delivery of 7000-series railcars, which improved railcar reliability, doubling the distance trains travel between delays in FY2019 from FY2018.[34] • For FY2020, 90% of Metrorail customers were on time, compared to 88% in FY2019. • WMATA shutdown four Orange Line Metrorail stations to perform platform reconstruction during the summer of 2020. • WMATA completed acquisition of its final 748th 7000-series railcar in February 2020. [35] In Q3 FY 2020 WMATA initiated

Ongoing Efforts at WMATA to Rebuild Metrorail & Metrobus Ridership	
	evaluation of final proposals for its 8000-series next generation railcar due for award in FY 2021.
Pursue partnerships with the business community and other partners to provide easier access to transit for employees and visitors	• The WMATA Board approved an extension of the Fairfax County Free Student Bus Program Pilot, where Fairfax County reimburses WMATA for eligible rides taken by students on Metrobus.[36] • WMATA also entered a fare buy down agreement for students in Montgomery County.[37]
Implement efforts on bus and rail to decrease fare evasion	• WMATA secured emergency fare gates at Metrorail stations to decrease fare evasion.[38] • WMATA is installing electronic gate sensors and other technology to better track and record fare evasion. [39] • The WMATA Board approved a low-income fare pilot program with the District of Columbia, where the District will reimburse WMATA for rides taken by low-income riders who are enrolled in the pilot program. [40]

Pursue capital investments that increase the reliability of the system

Continuing state of good repair investments is critical to maintain system reliability, maintaining current riders and attracting new riders. WMATA's research found that at least 30% of ridership losses in 2013 to 2016 were due to declining customer on-time performance and the state of good repair backlog at the time.[41] Since then, WMATA implemented an intensive rebuilding effort to rehabilitate its aging infrastructure, which resulted in a $2.1 billion reduction of its state of good repair backlog.[42] Dedicated funding from Virginia, Maryland and Washington, D.C. allows WMATA to make even more investments in its capital improvement program to correct years of underinvestment, further reduce the state of good repair backlog and increase reliability.

The most visible expenditure of FY 2020 capital funds was the second phase of the Platform Improvement Project. In May 2020, WMATA closed four stations on the Orange Line for full platform reconstruction and station improvements. WMATA also closed the Silver Line during the Summer of 2020 to expedite the Silver Line Phase 2 tie in and simplify rail operations to improve construction efficiency and safety during the pandemic. Including the reconstruction of Metrorail stations in Virginia, WMATA invested over $480 million in capital funding on platforms and structures in FY 2020. [43]

WMATA spent over $1.7 billion on capital projects in FY 2020, a significant increase in capital spending and more than double the $714 million investment made five years prior in FY 2015.[44] The largest capital investments in FY 2020 were upgrading station and passenger facilities and completing the purchase of 7000-series railcars.[45] The delivery of 7000-series railcars dramatically improved railcar reliability, increasing the distance trains traveled without delays by 44% from FY 2019 to FY 2020.[46] 7000-series railcars accounted for 65% of all Metrorail car service in FY 2020. [47] WMATA is already seeing positive returns as it ramps up its capital investment and reduces its state of good repair backlog. For instance, more than 88% of Metrorail customers were on time during FY 2019, and Metrorail rider offloads declined by nearly 13% from FY 2019 – FY 2020.[48] In Q3 FY 2020, WMATA initiated a Request for Proposals for future 8000-series railcars. The contract award is anticipated to be finalized Q3 of FY 2021.[49] NVTC supports WMATA's continued investment in

its capital program to increase the reliability, safety and performance of the system and rebuild ridership.

Implement efforts on bus and rail to decrease fare evasion

WMATA estimates that, pre-pandemic, fare evasion on bus and rail costs the agency approximately $40 million on an annual basis. [50] In addition to foregone fare revenue, this results in lower ridership counts which skews ridership metrics and reduces potential federal formula funding. Each state or local jurisdiction, not WMATA, makes the applicable laws surrounding fare evasion. WMATA has taken several steps to better measure fare evasion and is working to install electronic gate sensors and other technology to provide better data on occurrences. WMATA finalized the design of new faregates designated to be introduced in Q1 of FY 2021.[51] The WMATA Board also approved a low-income fare pass pilot with the District of Columbia, which would administer the program and reimburse WMATA for trips taken by eligible riders[52]. The program, which would be funded and managed by the District, aims to lower the cost of transit for residents who are recipients of social assistance. The results of the pilot will be studied for impacts on ridership and fare evasion.[53] Implementation of the pilot is currently on hold due to the pandemic.[54] During the pandemic, WMATA has made Metrobus fare free in order to enhance the safety of bus operators.

Strategy 2: Improve the Operational Efficiency of Metrorail and Metrobus

While rebuilding ridership improves farebox recovery and contributes to improving efficiency, there are several areas where WMATA can deliver its service more efficiently. Some of these efforts are within WMATA's control, while many efforts – especially with Metrobus – require extensive coordination and support from local and state agencies. Improving operational efficiency yields costs savings for the agency and can also benefits customers. Since labor costs are approximately 70% of total operating costs, these recommendations focus on strategies that impact the non-labor portion of the operating budget (approximately 30%) and yield the most productivity and capacity out of existing service.[55]

Recommendations by NVTC

Recommended Strategies to Improve the Operational Efficiency of Metrorail and Metrobus	
Adapt rail service to match demand during the pandemic and subsequent recovery period	• Monitor rail ridership to adapt rail service to match demand while maintaining an equitable, baseline level of service across all Metrorail lines. • As ridership rebuilds, run additional eight-car trains to meet demand during peak service to maximize capacity of the current Metrorail system, promote social distancing during the pandemic and achieve cost-effective operating efficiencies.
Leverage the expertise of local and regional partners to improve the efficiency of the bus network	• Work with local and state partners to improve the efficiency of the bus network, support implementation of bus priority projects, improve bus speeds and optimize transit networks • Engage NVTC, our jurisdictions, and transit operators before advancing or implementing Bus Transformation Project recommendations that will enhance bus service.

Adapt rail service to match demand during the pandemic and subsequent recovery period

During the COVID-19 pandemic, WMATA elected to run more eight-car train sets to assist riders in social distancing.[56] Installation of traction power upgrades to enable all eight-car operations continued in FY 2020 with additional work planned in FY 2021. NVTC recommends that WMATA monitor rail ridership and adapt rail service to match demand while maintaining an equitable, baseline level of service across all Metrorail lines. Post-pandemic, NVTC proposes that WMATA run all eight-car trains in a phased approach on lines with the most demand during peak hours to achieve operating efficiencies and grow ridership in a cost-effective manner.

Leverage the expertise of local and regional partners to improve the efficiency of the bus network

NVTC encourages WMATA to leverage the expertise of local and regional partners to improve the efficiency of the bus network, advance bus priority projects, improve bus speeds and optimize transit networks. The Bus Transformation Project is a multi-stakeholder effort led by WMATA staff that provides a set of strategies and recommendations to transform the region's bus network to provide frequent and convenient bus service, give buses priority on roadways, create excellent customer service and establish ongoing stewardship to transform the bus network regionally while enabling local action.[57] NVTC endorsed the Bus Transformation Project's vision, goals and strategy

and encouraged WMATA to include local jurisdictions and transit providers in the incorporation of the recommendations into policy and regional coordination activities and in the implementation of the action plan.[58]

Ongoing Efforts at WMATA that Support NVTC's Previous Recommendations

WMATA has several ongoing programs and efforts that can yield efficiencies for both Metrobus and Metrorail. WMATA is actively pursuing capital investments that increase the reliability and efficiency of the system. NVTC also encourages WMATA to engage with state and local jurisdictions to implement and explore pilot programs and other efforts that can increase the speed and reliability of Metrobus operations.

Ongoing Efforts at WMATA to Improve the Operational Efficiency of Metrorail and Metrobus	
Pursue capital investments that increase the reliability and efficiency of the system	• WMATA is rebuilding and expanding bus garages and maintenance facilities to address state of good repair needs, improve bus efficiency and plan for future ridership growth. In FY 2020, WMATA took steps to acquire property to advance the reconstruction of the Bladensburg Bus Garage. The new facility will accommodate articulated buses for high-ridership routes, store and repair new buses and improve operational efficiency.[59] • WMATA invested $114.4 million in rail traction power upgrades in FY 2020 and completed installation of equipment at Van Dorn and King street. WMATA will move to phase 2 of traction power upgrades in FY 2021. [60]
Engage with jurisdictions to implement and explore pilot programs and other efforts to increase the reliability and speed of Metrobus operations	• WMATA and DDOT piloted both permanent and temporary floating bus stops. Floating bus stops have raised platforms that allow bus stops to pick up passengers without pulling out of travel lanes. These facilities help increase bus speeds and decrease conflicts with bicycles.[61]

Strategy 3: Increase Non-Fare Revenues

Non-fare revenues are those revenues derived by WMATA from sources other than fares, such as parking, joint development, advertising and other sources. Strategies to generate non-fare revenue leverage existing assets to help mitigate the challenges of having reduced ridership revenue. However, the pandemic has dramatically reduced both fare revenue and reduced traditional non-fare revenue collections as shown in WMATA's FY 2021 budget. While this immediate revenue shortfall is outside of WMATA's control, strong non-fare revenue policies take time to yield results and will help with the post-pandemic recovery.

NVTC supports WMATA's ongoing efforts to increase non-fare revenues since it provides WMATA with additional resources to maintain service, diversify funding sources and control cost growth.

Ongoing Efforts at WMATA that Support Previous NVTC Recommendations

Ongoing Efforts at WMATA to Increase Non-Fare Revenues	
Leverage value for assets WMATA owns by maximizing advertising revenues and optimizing parking revenues	• WMATA estimates $20 million in parking revenue in FY 2021. However, parking revenues have declined due to the pandemic.[62] • WMATA generated $25.9 million in advertising sales in FY 2020 and, prior to the COVID-19 pandemic, WMATA expected to generate $33 million in FY 2021.[63] • WMATA executed an agreement to lock in 25% more advertising revenue for the next 10 years. [64]
Explore nontraditional revenue streams to optimize the value of Metrorail facilities	• In Q4 of FY 2020 WMATA negotiated the sale of surplus properties for $8.76 million in revenue. [65]
Pursue joint development opportunities on underutilized assets	• WMATA issued solicitations for joint development projects at New Carrollton and Hyattsville Metrorail stations and the Jackson Graham Headquarters building in Washington, D.C.[66] • WMATA initiated negotiations for a joint development ground lease for three million square feet of mixed-use development at West Falls Church.[67] • The WMATA Board approved a joint development agreement with a master developer at Huntington Station, which allow plans for the site to be considered in Fairfax County's Comprehensive Planning process and coordinated with the Richmond Highway Bus Rapid Transit project.[68] • Operating revenue from joint development projects is expected to increase by 3% in FY 2021 to generate $11.4 million.[69]
Pursue a real estate and sustainability strategy for WMATA facilities that generates operating efficiencies	• WMATA selected a developer to ground lease its existing headquarters as part of WMATA's strategy to move office staff to three new buildings in Virginia, Washington, D.C., and Maryland and decrease the number of office buildings from 10 to seven saving an estimated $130 million over the next 20 years.[70] • WMATA signed a solar lease agreement for parking facilities at four stations that will provide annual lease revenue of up to $50 million over 25 years. [71]

Leverage value for assets WMATA owns by maximizing advertising revenues and optimizing parking revenues

With 91 rail stations and nearly 60,000 parking spaces, WMATA has a large physical footprint across the region. WMATA is actively leveraging the value of these facilities by increasing advertising revenues. WMATA's advertising revenues were once the lowest among its peer transit agencies. In 2015, WMATA piloted digital advertising in Metrorail stations and subsequently implemented and expanded the program to generate revenue. In the FY 2021 budget, WMATA expects a 21% increase in advertising sales that will result in $33.3 million in revenue.[72] WMATA finalized a new 10-year contract valued at $336 million which includes funding for new digital screens and advertising technology investments.[73]

In FY 2019, the WMATA Board approved a number of new parking policies to take advantage of opportunities for additional revenue.[7475] WMATA continues to advance its parking program, but parking revenues have declined significantly in the FY 2021 budget due to the pandemic and subsequent declines in rail ridership. [76]

Pursue joint development opportunities on underutilized assets

NVTC sees continued opportunities for WMATA to pursue joint development projects on underutilized property to increase non-fare revenues. Joint development is a type of public-private partnership in which real estate developers co-locate private real estate near transit. WMATA has an active joint development program, completing more than 30 projects since 1975 to generate revenue for the system.[77] Increased development near Metrorail stations generates ridership and revenue for the system and has enabled WMATA to attract high-quality development near Metrorail stations. WMATA updated its joint development guidelines in FY 2019 to give the agency more flexibility to administer the program, and during FY 2020 the authority began joint development projects solicitations at its New Carrollton and Huntington Metrorail stations.[78] WMATA is also in final negotiations for a ground lease at West Falls Church Metrorail station that would bring 3 million square feet of mixed use development adjacent to the station.[79] All WMATA joint development projects are expected to generate $11.4 million in operating revenue in FY 2021.[80]

Pursue a real estate and sustainability strategy for WMATA facilities that generates operating efficiencies

WMATA is pursuing other real estate investment strategies to generate revenue and improve efficiencies. In FY 2020, the WMATA Board approved a joint development agreement as part of an initiative to redevelop its downtown D.C. headquarters under a long-term ground lease.[81] WMATA will relocate staff from its current headquarters to three offices in Virginia, Maryland and Washington, D.C., which will decrease the number of buildings it owns from 10 to seven. WMATA will complete design and planning for its satellite offices in FY 2021. Strategically locating its facilities can help reduce operating costs in the long-term and is part of an overall office consolidation strategy approved by the WMATA Board in July 2018 to save the agency $130 million over 20 years in capital and operating expenses.

WMATA is also making progress in its sustainability efforts, which yields both efficiencies and opportunities for additional revenue. WMATA implemented a station lighting improvement program which upgrades platform lighting and reduces energy use by 60% and saves $25,000 on an annual basis per station. [82] WMATA signed a 12-megawatt solar lease agreement in June 2020, which is anticipated to provide enough power for about 1,200 single family homes for one year.[83] This agreement will improve the parking facilities at four Metrorail stations in the District of Columbia and Prince George's County and provide annual lease revenue to WMATA.[84]

Strategy 4: Control Cost Escalation and Enhance Efficiency of the Workforce and Contracted Services

Implementing cost and work efficiencies is only part of the solution to controlling cost escalation in WMATA's operating subsidy growth. The "Keeping Metro Safe, Reliable and Affordable" strategic plan identified labor costs as nearly 70% of WMATA's total operating expenditures.[85] NVTC adopted its *Principles for WMATA Reform* in 2017 and supports WMATA's efforts to implement cost-saving strategies.[86] As most employees at WMATA are covered by multi-year collective bargaining agreements, there are opportunities to control cost escalation in these negotiations. While most of these strategies are outside of WMATA's direct control, many of these strategies recommend that WMATA seek certain actions or conditions of external parties.

Ongoing Efforts at WMATA that Support Previous NVTC Recommendations

Ongoing Efforts at WMATA to Control Cost Escalation and Enhance Efficiency of the Workforce and Contracted Services	
Adequately fund WMATA's Office of the Inspector General	• WMATA increased funding for the OIG by 6.3% and added four staff positions within the department for FY 2021.[87] • OIG issued 8 performance audits/evaluations identifying $70.6 million that could be used more efficiently in FY 2020.[88]
Improve productivity through strengthened management of employee absenteeism, overtime and worker's compensation	• The Chief Operating Officer's Office assists operational departments in meeting manpower requirements through oversight of absenteeism policy and provide long-term absence management support.[89]
Incentivize the workforce and contractors to deliver innovative solutions	• With its shift towards a planned maintenance program, WMATA has better coordinated its rail outages to boost the efficiency of work crews and reduce the overall impact to the customer. • WMATA agreed to a new four-year collective bargaining agreement with the largest union, Amalgamated Transit Union 689. This agreement includes, for the first time in WMATA's history, the first performance-based pay increase.[90]
Use the 3% cap on annual growth in operating subsidies as a tool during labor negotiations and annual budget development	• WMATA should continue to examine spending during the annual budget development process to adhere to the 3% cap on annual growth in operating subsidies • WMATA agreed to a new four-year collective bargaining agreement with ATU Local 689. The agreement covers a broad range of issues and enables WMATA to operate within its legally required 3% subsidy growth cap.[91] • For the first time, this agreement provides WMATA with the ability to fill train operator and station manager vacancies by direct, external hire. Previously these positions had to be recruited from WMATA bus operators.[92]

Ongoing Efforts at WMATA to Control Cost Escalation and Enhance Efficiency of the Workforce and Contracted Services	
Seek amendments to the federal Wolf Act to require arbitrators in WMATA contract mediations to consider these fiscal restrictions in all cases	• WMATA included reforming the Wolf Act in its strategic plan.[93]
Identify and evaluate options to address unfunded OPEB liabilities	• In the latest four-year collective bargaining agreement with ATU Local 689, WMATA will set up a trust funded by 1% of active members gross payroll for the purpose of funding post-retirement health care benefits for active members of the plan hired on or after January 2, 2010.[94]

Incentivize the workforce and contractors to deliver innovative solutions

As WMATA has shifted from a reactive to a preventative maintenance program, it has replaced around-the-clock single tracking and unscheduled line-segment shutdowns with a better coordinated and scheduled maintenance cycle. The preventative maintenance program targets specific issues and maximizes the limited amount of non-operational track time available to perform these activities. For example, WMATA increased the size of its overnight crews and deployed them in more places throughout the system to improve work efficiency as they fix parts of the system in the poorest condition. The Platform Improvement Project is another example of how WMATA is working to optimize work efficiencies. The project is scheduled to be completed over a three-year period to reconstruct 20 outdoor Metrorail stations to address structural deficiencies and improve passenger safety. Closing stations to provide around-the-clock access for workers will reduce the overall project duration by 94%, whereas only making repairs when the system is closed would take up to 30 years to complete.[95]

Use the 3% cap on annual growth in operating subsidies as a management tool during labor negotiations and annual budget development

NVTC recently formed a working group to review the impact of Virginia's 3% cap on the growth in operating assistance payments to WMATA. The working group's report found that while the cap has only been in place for two budget cycles, it appears to be a useful tool for WMATA to use in managing the growth in Virginia's operating subsidies. When negotiating through collective bargaining, NVTC encourages WMATA to include the 3% cap on annual operating subsidies in management's negotiating position and to seek greater authority for WMATA to make operational decisions that improve the systems cost effectiveness.

In December 2019, WMATA reached a negotiated agreement on a new four-year collective bargaining agreement with its largest union, ATU local 689. The legislatively imposed 3% cap was a key fiscal limitation cited by WMATA in the negotiations.[96] This agreement includes, for the first time in WMATA's history, the first performance-based pay increase. In years where WMATA's ridership improves by 2% or more over the previous year, there are provisions in the contract for an additional 1% wage increase. [97] [98] The collective bargaining agreement also provided WMATA the ability to fill train operator and station manager vacancies by direct external hire. The agreement allows for 30% of train operator and station manager vacancies (and 100% of new train operator and station manager vacancies in the first year of Silver Line Phase 2 service) to be filled

by direct, external hire. Under all previous labor contracts throughout WMATA's history, station managers and train operators could only be hired from the existing pool of bus operators.

Identify and evaluate options to address unfunded OPEB liabilities

WMATA will need to address its $900 million unfunded pension liability and $2.1 billion unfunded Other Post-Employment Benefits (OPEB) liability, which includes non-pension costs for retiree medical and prescription drug coverage and life insurance.[99] In the latest four-year collective bargaining agreement with ATU Local 689, WMATA will set up a trust funded by 1% of active members gross payroll for the purpose of funding post-retirement health care benefits for active members of the plan hired on or after January 1, 2010.[100]

---

[16] Commonwealth of Virginia. "Use of the Commonwealth Mass Transit Fund." 2018. <law.lis.virginia.gov/vacode/title33.2/chapter15/section33.2-1526.1/>
[17] WMATA. "Keeping Metro Safe, Reliable and Affordable." Pg. 14. January 2019. <www.wmata.com/initiatives/strategic-plans/upload/KMSRA-Strategic-Plan-Jan-2019.pdf>
[18] WMATA. "SmartTrip now available on iPhone and Apple Watch." September 1, 2020. <https://www.wmata.com/about/news/SmarTrip-now-available-on-iPhone-and-Apple-Watch.cfm>
[19] WMATA. "FY 2021 Budget Update and FY 2022 Outlook." Pg. 16. September 10, 2020. <https://www.wmata.com/about/board/meetings/board-pdfs/upload/3B-Action-Item-FY21-and-FY22-Budgets-v6-2.pdf>
[20] Ibid.
[21] WMATA. "FY2020 Approved Budget." Pg.3. July 1, 2019. <www.wmata.com/about/records/public_docs/upload/FY2020-Budget-Book-061219-FINAL-from-WEB-updated-20190828.pdf>
[22] WMATA. "Major Outage Guidelines to Minimize Customer Impacts." Pg. 30. December 13, 2018. <www.wmata.com/about/board/meetings/board-pdfs/upload/4A-FY2020-Station-Platforms-Project.pdf>
[23] Ibid.
[24] WMATA controls the following parking facilities in Virginia: East Falls Church, West Falls Church, Dunn-Loring, Vienna, Van Dorn, Huntington, Franconia-Springfield. Fairfax County controls the parking facilities at Wiehle-Reston Station. Fairfax and Loudoun Counties will control the parking facilities in their respective jurisdictions that are part of the Silver Line Phase 2 project.
[25] WMATA. "FY2020 Approved Budget." Pg.10. July 1, 2019. <www.wmata.com/about/records/public_docs/upload/FY2020-Budget-Book-061219-FINAL-from-WEB-updated-20190828.pdf>
[26] WMATA. "Acceptance of Public Hearing Staff Report and Approval of Changes to Parking Programs." December 13, 2018. < www.wmata.com/about/board/meetings/board-pdfs/upload/11B-FIN-Parking-Programs-FINALIZED.pdf>
[27] Ibid.
[28] WMATA. "FY2020 Budget Work Session." Pg. 8-46. November 15, 2018. <www.wmata.com/about/board/meetings/board-pdfs/upload/3A-FY2020-Budget-Work-Session-w-Memo-Rev.pdf>
[29] Ibid.
[30] WMATA. "FY2020 Approved Budget." Pg. 10. July 1, 2019.
[31] Per WMATA's Parking Policy: a transit rider is a person who uses a WMATA fare product to pay fare on Metrorail within a two-hour (2) period between the origination of the transit trip and exiting the Park & Ride by paying parking rates with the same fare product.
[32] WMATA. "COVID 19 Recovery Plan." May 14, 2020. <https://www.wmata.com/about/board/meetings/board-pdfs/upload/3A-COVID-19-Recovery-Final.pdf>
[33] WMATA. "Quarterly Capital Plan Execution Update." Pg. 2. May 23, 2019. <www.wmata.com/about/board/meetings/board-pdfs/upload/3A-Quarterly-Capital-Update.pdf>
[34] WMATA. "Q4 FY2019 Metro Performance Report." Pg. 6. September 2019.
[35] WMATA. "Capital Improvement Program Update." Pg. 12. September 12, 2019 <https://www.wmata.com/about/board/meetings/board-pdfs/upload/3A-Capital-Improvement-Program-Update.pdf>

[36] WMATA. Fairfax County Student Bus Pass Program Pilot Extension. Pg. 2. July 23, 2020. < https://www.wmata.com/about/board/meetings/board-pdfs/upload/20200723-BOARD-12B-Fairfax-Student-Bus-Pass-FINALIZED.pdf>
[37] WMATA. Montgomery County Kids Ride Free Program. July 23, 2020. < https://www.wmata.com/about/board/meetings/board-pdfs/upload/20200723-BOARD-12C-Montgomery-Kids-Ri>
[38]WMATA. "Fare Evasion Update." July 25, 2019. <www.wmata.com/about/board/meetings/board-pdfs/upload/4A-Fare-Evasion-Update.pdf>
[39]WMATA. "Fare Evasion Update." November 7, 2019. < https://www.wmata.com/about/board/meetings/board-pdfs/upload/4A-Fare-Evasion-Quarterly-Update.pdf>
[40] WMATA. "DC Low-Income Fare Pilot." <https://www.wmata.com/about/board/meetings/board-pdfs/upload/3C-DC-Low-Income-Fare-Pilot-v2.pdf> Pg. 12. December 12, 2019.
[41] WMATA. "Understanding Rail and Bus Ridership." Pg. 3. October 12, 2017. <www.wmata.com/about/board/meetings/board-pdfs/upload/3A-Understanding-Ridership-TO-POST.pdf>
[42] WMATA. "Quarterly Capital Plan Execution Update." Pg. 2. May 23, 2019. <www.wmata.com/about/board/meetings/board-pdfs/upload/3A-Quarterly-Capital-Update.pdf>
[43] WMATA. "FY 2020 Fourth Quarter Financial Report." Pg. 6. September 4, 2020. <https://www.wmata.com/about/records/public_docs/upload/Q4-FY2020-Quarterly-Progress-Report-FINAL.pdf>
[44] WMATA. "FY 2020 Fourth Quarter Financial Report." Pg.8. September 4, 2020. <https://www.wmata.com/about/records/public_docs/upload/Q4-FY2020-Quarterly-Progress-Report-FINAL.pdf>
[45] Ibid.
[46] WMATA. "FY 2020 Fourth Quarter Financial Report." Pg.10. September 4, 2020. <https://www.wmata.com/about/records/public_docs/upload/Q4-FY2020-Quarterly-Progress-Report-FINAL.pdf>
[47] WMATA. "Q3 FY 2020 Metro Performance Report." Pg. 1. July 13, 2020. <https://www.wmata.com/about/records/public_docs/upload/FY2020-Q3-Financial-Report.pdf>
[48] Ibid.
[49] WMATA. "Q3 FY 2020 Financial Report." Pg. 9. July 13, 2020. <https://www.wmata.com/about/records/public_docs/upload/FY2020-Q3-Financial-Report.pdf>
[50] WMATA. "Fare Evasion Quarterly Update." Pg. 2. November 7, 2019. <https://www.wmata.com/about/board/meetings/board-pdfs/upload/4A-Fare-Evasion-Quarterly-Update.pdf>
[51] WMATA. "Q3 FY 2020 Financial Report." Pg. 13. July 13, 2020. <https://www.wmata.com/about/records/public_docs/upload/FY2020-Q3-Financial-Report.pdf>
[52] WMATA. "3C DC Low-Income Fare Pilot." December 12, 2020.
[53] Ibid.
[54] WMATA. "Metrobus Service Guidelines." September 24, 2020. <https://www.wmata.com/about/board/meetings/board-pdfs/upload/4A-Metrobus-Service-Guidelines.pdf>
[55] WMATA. "FY 2020 Fourth Quarter Financial Report." Pg.7. September 4, 2020. <https://www.wmata.com/about/records/public_docs/upload/Q4-FY2020-Quarterly-Progress-Report-FINAL.pdf>
[56] WMATA. "COVID-19 Recovery Plan" Pg. 4. May 13, 2020. <https://www.wmata.com/about/board/meetings/board-pdfs/upload/3A-COVID-19-Recovery-Final.pdf>
[57] WMATA. "Bus Transformation Project Endorsement." January 16, 2020.
[58] NVTC. "NVTC Resolution #2408 Bus Transformation Endorsement." March 5, 2020. <http://www.novatransit.org/uploads/resolutions/NVTC%20Resolution%202408%20Bus%20Transformation%20Endorsement%2003-05-20.pdf>
[59] WMATA. "Bladensburg Bus Garage Approvals." January 16, 2020. <https://www.wmata.com/about/board/meetings/board-pdfs/upload/3C-Bladensburg-PH-Staff-Report-Approval.pdf>
[60] WMATA. "FY 2020 Fourth Quarter Financial Report" Pg.7. September 10, 2020. <https://www.wmata.com/about/records/public_docs/upload/Q4-FY2020-Quarterly-Progress-Report-FINAL.pdf>
[61] WMATA. "Bus and MetroAccess Safety Initiatives." March 12, 2020. <https://www.wmata.com/about/board/meetings/board-pdfs/upload/4A-Bus-and-MetroAccess-Safety-Initiatives.pdf>
[62] WMATA. "FY 2021 Approved Budget." Pg.26. July 1, 2020.
[63] WMATA. "FY 2020 Fourth Quarter Financial Report" Pg.7. September 10, 2020. <https://www.wmata.com/about/records/public_docs/upload/Q4-FY2020-Quarterly-Progress-Report-FINAL.pdf>
[64] WMATA. "New agreement locks in 25% more revenue to support Metro operations from its advertising network." January 17, 2020.

[65] WMATA. "FY2020 Fourth Quarter Financial Report" Pg.18. September 10, 2020. <https://www.wmata.com/about/records/public_docs/upload/Q4-FY2020-Quarterly-Progress-Report-FINAL.pdf>
[66] Ibid.
[67] WMATA. "FY2020 Approved Budget." Pg. 5. July 1, 2019. <www.wmata.com/about/records/public_docs/upload/FY2020-Budget-Book-061219-FINAL-from-WEB-updated-20190828.pdf>
[68] WMATA. "Huntington Joint Development Agreement." Pg. 5. October 10, 2019.
[69] WMATA. "FY 2021 Approved Budget." Pg.12. July 1, 2020.
[70] WMATA. "FY 2021 Approved Budget." Pg. 23. July 1, 2020.
[71] WMATA. "New agreement locks in 25% more revenue to support Metro operations from its advertising network." January 17, 2020. <https://www.wmata.com/about/news/New-agreement-locks-in-more-revenue-to-support-Metro-operations-from-its-advertising-network.cfm>
[72] WMATA. "FY2021 Approved Budget." Pg.12. July 1, 2020.
[73] WMATA. "New agreement locks in 25% more revenue to support Metro operations from its advertising network." January 17, 2020. <https://www.wmata.com/about/news/New-agreement-locks-in-more-revenue-to-support-Metro-operations-from-its-advertising-network.cfm>
[74] The WMATA Board approved parking policy changes in December 2018 that also amended WMATA's parking policies to exempt riders of Metrobus and local transit systems operating in the WMATA Transit Zone from non-rider fees when it is technologically and operationally feasible.
[75] WMATA. "Parking Programs." December 13, 2018. <www.wmata.com/about/board/meetings/board-pdfs/upload/11B-FIN-Parking-Programs-FINALIZED.pdf>
[76] WMATA. "FY 2021 Approved Budget." Pg.9. July 1, 2020.
[77] WMATA. "Update to Metro's Joint Development Policies. April 12, 2018. <www.wmata.com/about/board/meetings/board-pdfs/upload/3A-Joint-Development-Policies.pdf>
[78] WMATA. "9A WFC Joint Development Solicitation." January 24, 2019. < https://www.wmata.com/about/board/meetings/board-pdfs/upload/9A-FIN-WFC-Joint-Develoment-Solicitation-FINALIZED.pdf>
[79] WMATA. "9A WFC Joint Development Solicitation." January 24, 2019. <https://www.wmata.com/about/board/meetings/board-pdfs/upload/9A-FIN-WFC-Joint-Develoment-Solicitation-FINALIZED.pdf>
[80] WMATA. "FY 2021 Approved Budget." Pg.12. July 1, 2020. <https://www.wmata.com/about/records/public_docs/upload/FY2021-Approved-Budget_Final-2.pdf>
[81] WMATA. "3B 600 Fifth Street JDA Update." February 13, 2020. < https://www.wmata.com/about/board/meetings/board-pdfs/upload/3B-600-Fifth-Street-JDA-Updated.pdf>
[82] WMATA. "FY 2020 Fourth Quarter (Q4) Financial Report" Pg.20. September 10,2020
[83] WMATA. "SunPower and Goldman Sachs Renewable Power LLC that will drive revenue and create the largest community solar project in the region." July 8, 2020.
[84] WMATA. "Sustainability Update" <https://www.wmata.com/about/board/meetings/board-pdfs/upload/20200709-FIN-4A-Sustainability-Update.pdf> Pg. 2. July 9, 2020.
[85] WMATA. "Keeping Metro Safe, Reliable and Affordable." Pg. 15. January 2019. <www.wmata.com/initiatives/strategic-plans/upload/KMSRA-Strategic-Plan-Jan-2019.pdf>
[86] NVTC. "Resolution 2342: NVTC Principles for WMATA Reform." September 2017. <www.novatransit.org/uploads/LinkedDocs/2017/Resolution%202342%20NVTC%20Principles%20on%20WMATA%20Reform%20-%20As%20Amended%209-7-17.pdf>
[87] WMATA. "FY 2021 Approved Budget." Pg. 20. July 1, 2020. <https://www.wmata.com/about/records/public_docs/upload/FY2021-Approved-Budget_Final-2.pdf>
[88] WMATA. "FY 2021 Approved Budget." Pg. 21. July 1, 2020. <https://www.wmata.com/about/records/public_docs/upload/FY2021-Approved-Budget_Final-2.pdf>
[89] WMATA. "FY 2021 Approved Budget." Pg. 8. July 1, 2020. <https://www.wmata.com/about/records/public_docs/upload/FY2021-Approved-Budget_Final-2.pdf>
[90] WMATA. "WMATA Board approves new labor contract." December 20, 2019. <https://www.wmata.com/about/news/Metro-Board-approves-new-labor-contract.cfm>
[91] WMATA. "Tentative 4 Year labor deal reached." December 10, 2019. <https://www.wmata.com/about/news/Tentative-4-year-labor-deal-reached.cfm>

[92] WMATA. "WMATA Board approves new labor contract." December 20, 2019. <https://www.wmata.com/about/news/Metro-Board-approves-new-labor-contract.cfm>
[93] WMATA. "Keeping Metro Safe, Reliable and Affordable." Pg. 18. January 2019. <www.wmata.com/initiatives/strategic-plans/upload/KMSRA-Strategic-Plan-Jan-2019.pdf>
[94] WMATA. "Approval of Local 689 Collective Bargaining Agreement." December 20, 2019. <https://www.wmata.com/about/board/meetings/board-pdfs/upload/3A-Approval-of-L689-CBA-FINALIZED.pdf>
[95] WMATA. "Station Platform Reconstruction Capital Project." Pg. 11. May 10, 2018. <www.wmata.com/about/board/meetings/board-pdfs/upload/3B-Station-Platform-Recon.pdf>
[96] WMATA. "Tentative 4 Year labor deal reached." December 10, 2019. <https://www.wmata.com/about/news/Tentative-4-year-labor-deal-reached.cfm>
[97] WMATA. "Metro Board approves new labor contract with provisions to grow ridership, improve customer service." December 20, 2019. <https://www.wmata.com/about/news/Metro-Board-approves-new-labor-contract.cfm>
[98] WMATA. "Local 689, ATU Labor Contract 2020-2024" December 2019. <https://www.wmata.com/about/news/Metro-Board-approves-new-labor-contract.cfm>
[99] WMATA. "Pension and OPEB Update." December 13, 2018. <www.wmata.com/about/board/meetings/board-pdfs/upload/3A-Pension-and-OPEB-Overview.pdf>
[100] WMATA. "Approval of Local 689 Collective Bargaining Agreement." December 20, 2019. <https://www.wmata.com/about/board/meetings/board-pdfs/upload/3A-Approval-of-L689-CBA-FINALIZED.pdf>

2. Use of Dedicated Capital Funds

Chapter 854 of the 2018 Virginia Acts of Assembly authorizes the Commonwealth to disburse $154 million in revenues to the Washington Metropolitan Area Transit Authority Capital Fund (WMATA Capital Fund) in FY 2020, Virginia's portion of WMATA's $500 million/year in regional dedicated capital funding.[101] The State of Maryland and the District of Columbia provided the remaining portion of the regional dedicated capital funding.

Virginia's legislation allows WMATA to use the WMATA Capital Fund for any capital purpose across the system. As required by law, NVTC must include the uses of funds from the WMATA Capital Fund from the prior fiscal year in this report. Table 2 shows the actual expenditures of the Fund for FY 2020 by Capital Improvement Plan (CIP) Program. WMATA provides additional information on progress made in the overall capital program during FY 2020 in WMATA's Quarter 4 FY 2020 Financial Report.[102]

Dedicated capital funding from the Commonwealth of Virginia, State of Maryland and the District of Columbia strengthens WMATA's ability to embark on large, multi-year capital investments designed to address significant state of good repair needs. Virginia's dedicated funding supports WMATA's capital investments and project delivery across the system. WMATA uses several sources to fund its capital program including federal funding, regional dedicated funding, state and local contributions and other sources.

In FY 2020, WMATA invested a record $1.709 billion in its capital budget.[103] This is more than double the $714 million capital investment made five years prior in FY 2015 and represents an aggressive delivery of capital projects to improve the safety and reliability of transit system.[104] The following expenditures and descriptions of work accomplished by capital investment category and program area are provided in WMATA's FY 2020 Financial Report.[105] This report is provided to the WMATA Board and the public and also provides preliminary, unaudited total expenditures for FY 2020.

In the **stations and passenger facilities investments category**, WMATA invested $624.8 million in FY 2020. This work included testing of new faregates and finalization of software development of WMATA's new mobile app, which was introduced in September 2020. Additional work included the replacement of eight escalators, rehabilitation of 10 elevators and the installation of track bed lighting. WMATA also embarked on phase 2 of the Platform Improvement Project, a four-year project to repair and reconstruct platforms at 20 outdoor Metrorail stations. The second phase of the Platform Improvement Project rehabilitated platforms at four outdoor stations at East Falls Church, West Falls Church, Dunn Loring and Vienna Metrorail stations, which required a shutdown of rail service on the Orange and Silver Lines west of Ballston during the summer of 2020. With 24-hour access to the project sites, workers completed additional work beyond platform reconstruction. This work included platform shoring, installation of platform floor tiles, skylight installation, concrete crack repairs, CCTV camera installation, electrical conduit wiring, fire alarm wiring and fire standpipe installation at all stations. As of September 2020, all four stations were rebuilt and reopened to the public with features such as slip resistant tiles, new platform shelters with charging stations, additional passenger information display screens and additional LED lighting.

In FY 2020, **railcar investments** totaled $336.4 million. As of the end of the fourth quarter, all the planned 748 7000-series railcars were conditionally accepted by WMATA. WMATA continues to work with the manufacturer and sub-contractors on various outstanding modifications for software upgrades, railcar door wiring and training for railcar maintenance. The 7000-series railcars represent over 58% of WMATA's rail fleet and have driven year over year improvements in WMATA's rail fleet reliability. WMATA also installed LED lighting improvements to the Alexandria Service and Inspection shop, continued ongoing preventive maintenance of the rail fleet and completed 74 rehabilitations scheduled for the 2000/3000-series railcars and 84 planned rehabilitations for the 6000-series. Railcar rehabilitation encountered program delivery delays due social distancing measures associated with the COVID-19 pandemic.

Rail systems investments totaled $249.8 million in FY 2020. WMATA continued to install fiber cable as part of the Radio Infrastructure Replacement Project. When the project is completed in FY 2021, cellular carriers will be able to provide wireless service on all remaining underground portions of the Metrorail system. WMATA also completed installation of tie breaker station equipment at the Van Dorn Street and King Street stations and continued to install equipment at other stations. WMATA also began the installation of traction power substation equipment at Pentagon City and completed 20 switch replacements.

In FY 2020, WMATA expended $127.7 million in **track and structures investments**. The track and structures rehabilitation program helps ensure a safe and reliable rail system through comprehensive inspection, maintenance and rehabilitation to enhance the conditions of the tracks, guideways and structures. WMATA replaced crossties, insulators and third rails and renewed direction fixation fasteners, tamped track and eliminated open rail joints. WMATA also rehabilitated structural components, deck joints, concrete, and grout pads that support the track structure, as well as replaced illegible roadway track signs, repaired leaks, rehabilitated drains and cleaned track beds.

WMATA expended $130.5 million on **bus and paratransit investments** in FY 2020. This included the delivery of 89 new buses. WMATA also completed 80 bus rehabilitations, replaced 69 energy storage systems and 212 fare boxes, rebuilt 125 transmission assemblies and 75 engine assemblies and installed 300 operator shields to protect bus operators. WMATA also awarded contracts and continued to construct off-site parking that will allow for the replacement of the Bladensburg bus maintenance and operations facility.

Business support investments totaled $239.4 million in FY 2020. As part of its office consolidation strategy, WMATA advanced design, planning work and construction for its new headquarters facility and additional office locations in Virginia and Maryland. WMATA also advanced work on roof rehabilitation at two maintenance facilities and continued planning for the construction of a new data center to replace the existing data center at the Jackson Graham building. WMATA also invested in data centers and data infrastructure, network and communications, customer electronic communications and outreach, management software, rail operations software and bus and rail asset management software. Overall, these projects support WMATA's business and financial control functions, enhance data protection and expand the capacity and scalability of WMATA's data infrastructure.

The FY 2020 Capital Budget demonstrates WMATA's focus on safety and state of good repair. Virginia's dedicated capital funding, in addition to other capital funding provided by the Federal

government, the District of Columbia, the State of Maryland, the Commonwealth of Virginia, the cities of Fairfax, Falls Church and Alexandria and the counties of Arlington, Fairfax and Loudoun, is a vital source of funds for WMATA's capital budget. Virginia's dedicated capital funding contributed to the above accomplishments by Capital Improvement Plan (CIP) program.

The following table shows the actual expenditures of Virginia's WMATA Capital Fund for FY 2020 by CIP Program. WMATA provides additional information in the FY 2020 Financial Report.

Table 2: FY 2020 Expenditures from the Virginia WMATA Capital Fund by CIP Program

CIP Category	CIP Program	FY 2020 Actual Expenditures (millions)[106] *(Totals may not add due to rounding)*
Railcar Investments	Railcar Acquisition	$2.9
	Railcar Maintenance/Overhaul	$7.7
	Railcar Maintenance facilities	$21.5
	Total	**$32.1**
Rail Systems Investments	Propulsion	$12.5
	Signals & Communication	$16.2
	Total	**$28.7**
Track and Structures Rehabilitation Improvements	Fixed Rail	$11.4
	Structures	$4.0
	Total	**$15.4**
Stations and Passenger Facilities Investments	Platforms & Structures	$11.3
	Vertical Transportation	$3.4
	Station Systems	$20.9
	Total	**$35.6**
Bus and Paratransit Investments	Bus and Paratransit Acquisition[107]	$0.0
	Bus Maintenance/Overhaul	$0.4
	Bus Maintenance Facilities	$7.8
	Bus Passenger Facilities/Investments	$1.3
	Total	**$9.6**
Business Support Investments	Information Technology	$12.8
	Metro Transit Police Department[108]	$0.0
	Support Equipment/Services	$20.2
	Total	**$33.0**
Total Capital Programs		**$154.3**

Source: WMATA[109]

[101] Commonwealth Transportation Board. "FY 2020 Rail and Public Transportation Improvement Program." September 17, 2020. http://www.drpt.virginia.gov/media/2801/fy20-final-syip.pdf
[102] WMATA. "Quarter 4 FY 2020 Financial Report." September 2020. <https://www.wmata.com/about/records/public_docs/upload/Q4-FY2020-Quarterly-Progress-Report-FINAL.pdf>
[103] Ibid.
[104] WMATA. "Q4 FY 2015 Financial Report." Pg. 18. September 2015 <wmata.com/about/records/public_docs/upload/FA-Report-Q4-2015.pdf>

[105] WMATA. "Quarter 4 FY 2020 Financial Report." September 2020. <https://www.wmata.com/about/records/public_docs/upload/Q4-FY2020-Quarterly-Progress-Report-FINAL.pdf>
[106] Due to the timing of the publication of this report, these expenditures are preliminary and do not represent final audited expenditures.
[107] Figure is rounded. Expenditures from Virginia's dedicated capital funding for Bus and Paratransit acquisition totaled $7,706 in FY 2020
[108] Figure is rounded. Expenditures from Virginia's dedicated capital funding for MTPD totaled $49,188 in FY 2020
[109] WMATA. "Capital Improvement Program Progress Report – FY 2020 4th Quarter." September 2020.

3. Safety and Reliability

Passenger and employee safety and security is the highest priority for WMATA. WMATA consistently communicates that passenger and employee safety and security is its highest priority with a focus on minimizing the risk of death, injury, illness and property damage. The American Public Transportation Association (APTA) reported that public transit is one of the safest modes of transportation. Fatalities of urban mass rail transit and buses are 0.33 and 0.2 per billion person-miles respectively, whereas that of cars and light trucks (drivers and passengers) is 6.53.[110] Nationally, the sum of all transit safety events decreased by 0.2 percent from 2017 to 2018.[111] The Washington Metrorail Safety Commission (WMSC) provides independent safety oversight of WMATA, supporting the WMATA Board of Directors' and General Manager's emphasis on system safety.[112]

Transit operators also seek to provide reliable service to passengers. Reliability can be measured in terms of a transit service's on-time performance, as well as the frequency of equipment break downs.

3.1 Safety

Transit systems seek to minimize the frequency of all safety events. The Safety & Security (S&S) Time Series present safety and security data reported to NTD, through the S&S-40 form (Major events) and the S&S-50 form (Non-Major monthly summary form). NTD measures transit safety by summarizing the total occurrences, to include both Major and Non-Major, of certain safety events for rail and bus operations:

1. Collision
2. Derailment (rail only)
3. Fatality [e.g. "A death or suicide confirmed within 30 days of a reported incident. Does not include deaths in or on transit property that are a result of illness or other natural causes]
4. Fire
5. Injury
6. Security event [e.g. "an occurrence of a bomb threat, bombing, arson, hijacking, sabotage, cyber security event, assault, robbery, rape, burglary, suicide, attempted suicide (not involving a transit vehicle), larceny, theft, vandalism, homicide, CBR (chemical/biological/radiological) or nuclear release or other event"][113]

The NTD provides safety data on a calendar year basis, and not a fiscal year basis, unlike all other data presented in this report. The counts represented in Table 3 and Table 4 are total counts for each category from when they were accessed from NTD. This time series data is subject to a validation process and current and previous years' data may be revised by transit properties based upon additional data on its operations or upon request by NTD analysts.[114] The following tables show the data as it was accessed in June 2020 and may show slightly different results for past

calendar years as shown in previous NVTC reports. The official NTD definitions for each term are provided in the Appendix.

Table 3 summarizes the total count of each type of Metrorail safety events for calendar years 2017, 2018 and 2019.

Table 3: Metrorail Safety

NTD Category	Safety Event	Frequency, CY 2017	Frequency, CY 2018	Frequency, CY 2019
Events	Collision	8	14	12
	Derailment	5	6	2
	Security Event	45	52	78
	Fire	101	65	71
Fatalities	Fatality	2	6	8
Injuries	Injury	323	350	389

Source: WMATA NTD Report, Form S&S-40 (Collision, Derailment and Security Event) and S&S-50 (Fire, Fatality and Injury)[115]

Table 4 summarizes the total count of each Metrobus safety event for calendar years 2017, 2018 and 2019.

Table 4: Metrobus Safety

NTD Category	Safety Event	Frequency, CY 2017	Frequency, CY 2018	Frequency, CY 2019
Events	Collision	166	210	203
	Derailment	N/A	N/A	N/A
	Security Event	38	51	59
	Fire	8	1	4
Fatalities	Fatality	0	0	0
Injuries	Injury	505	538	535

Source: WMATA NTD Report, Form S&S-40 (Collision, Derailment and Security Event) and S&S-50 (Fire, Fatality and Injury)[116]

3.2 Reliability

The reliability of a transit system may be measured by its punctuality and equipment dependability. Reliability metrics used by WMATA include:

1. **On-time performance (OTP)** is the rate at which a transit system carries passengers to their destination on time. Per the Metro Performance Report (MPR) published by WMATA, this metric is used to evaluate the timeliness of travel for both rail and bus operations.

2. **Mean distance between delays (MDBD)** is the average number of miles that are traveled between failures that delay rail service. MDBD indicates the reliability of the railcar used to transport passengers. Ideally, with no failures that delay rail service, the number of miles between a delay (MDBD) would be nearly infinite because the rail vehicles would never encounter a delay due to failure. On the other hand, if there are frequent failures that cause delay, then MDBD would be low since trains are disrupted by delays every few miles. The higher the MDBD value, the more reliable the rail system. Factors that influence railcar reliability are the age and design of the railcars, the amount the railcars are used, the frequency and quality of preventive maintenance and the interaction between railcars and the track.[117]

3. **Mean distance between failures (MDBF)** is the average number of miles that are traveled before a mechanical breakdown causes the bus to be removed from service or results in delays from schedule. Like MDBD (see above), the higher the MDBF, the more reliable the bus system. Factors that influence bus fleet reliability include vehicle age, quality of maintenance program, original vehicle quality and road conditions affected by inclement weather and road construction.[118]

Reliability data is obtained from the annual Metro Performance Reports, produced by WMATA, which reports data on a fiscal year basis. Data included in this report for fiscal years 2017, 2018 and 2019, covers the entire relevant fiscal year (from July 1 to June 30 of that respective fiscal year). Fiscal year 2020 data only includes the pre-pandemic time period of July 1, 2019 to March 15, 2020. WMATA has not provided NVTC with any reliability and on-time performance data from March 16, 2020 to June 30, 2020, a time period in which WMATA had to make drastic adjustments to rail and bus service due to the COVID-19 pandemic.

3.3 On-Time Performance

On-time performance (OTP) is reported for fiscal years 2017, 2018, 2019 and 2020 (pre-pandemic), which is defined as July 1, 2019 to March 15, 2020. OTP is measured differently for Metrorail and Metrobus.

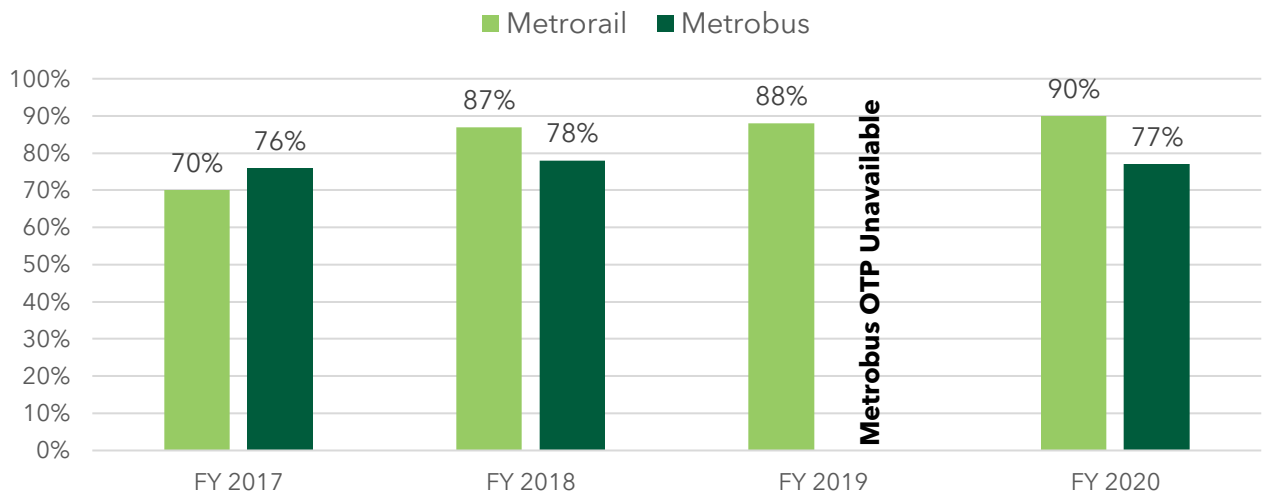
Metrorail customer on-time performance measures the percentage of customers who complete their journey within the maximum amount of time it should take per WMATA service standards. The maximum time is equal to the train run time + a headway (scheduled train frequency) + several minutes to walk between the fare gates and the platform. These standards vary by line, time of day, and day of the week. Actual journey time is calculated from the time a customer taps a SmarTrip card to enter the system, to the time when a SmarTrip card is tapped to exit. Reference Appendix for the standard WMATA definition. Factors that can affect OTP include railcar availability, fare gate availability, elevator and escalator availability, infrastructure conditions, speed restrictions, single-tracking around scheduled track work, railcar delays (e.g., doors) or delays caused by sick passengers.[119]

For FY 2017 and FY 2018, Metrobus on-time performance data was schedule based and reported on the number of bus vehicles arriving at a timepoint at or close to the scheduled arrival time, divided by the total number of vehicles arriving at timepoint, over a period (in this case, one year). In FY 2019, WMATA piloted a new calculation for Metrobus on-time performance that introduced a headway-based measure for several Metrobus routes and modified the schedule-based OTP to

include all timepoints (this previously had excluded all last timepoints). Due to errors in the data quality Metrobus OTP was not available for FY 2019 but was available in FY 2020 (pre-pandemic). Factors that can affect OTP include traffic congestion, detours, inclement weather, scheduling, vehicle reliability, operational behavior or delays caused by passengers.[120]

Figure 1 summarizes Metrorail and Metrobus on-time performance in FY 2017, FY 2018, FY 2019 and FY 2020 (pre-pandemic). As previously noted, on-time performance data for FY 2020 is provided for a pre-pandemic period of July 1, 2019 to March 15, 2020, while previous fiscal year's data are provided for the full fiscal year.

Figure 1: On-Time Performance by Mode



Source: Metro Performance Report FY 2020

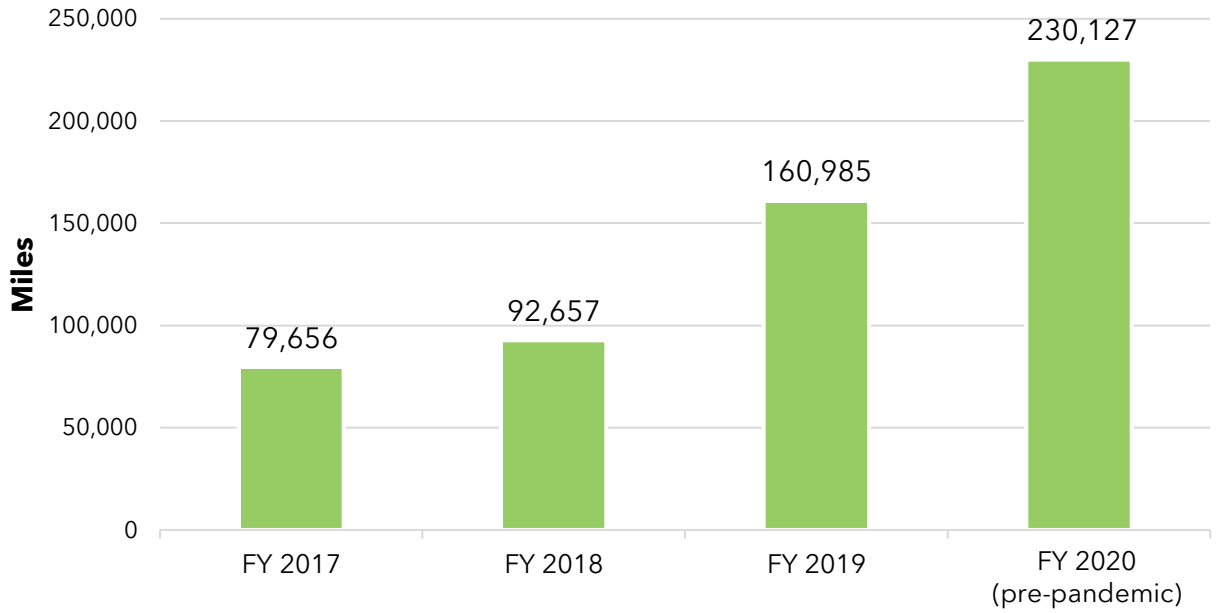
Note: FY 2020 data are for a pre-pandemic period of July 1, 2019 to March 15, 2020. All other data are reported for the full fiscal year. Metrobus on-time performance data is schedule based for FY 2017 and FY 2018 and headway based for FY 2020 (pre-pandemic).

3.4 Mean Distance between Delays/Failures

Mean distance between delays (MDBD) indicates the average number of miles traveled between vehicle failures that delay rail or bus service. Higher MDBD indicates greater reliability of Metro railcar mechanical equipment (e.g. doors, generators and engines). The Metro Performance Report (MPR) presents MDBD only for Metrorail. Therefore, the equivalent metric for Metrobus, mean distance between failures (MDBF), is presented for bus reliability.

Figure 2 and Figure 3 summarize the Metrorail and Metrobus reliability figures for FY 2017, FY 2018, FY 2019 and FY 2020 (pre-pandemic). When considering MDBD and MDBF for reliability, rail should have a substantially larger average number of miles than buses for two reasons: railcars travel substantially greater distances in a day relative to buses; and buses, like cars, may experience failure every few thousand miles. As previously noted, MDBD/MDBF for FY 2020 is provided for a pre-pandemic period of July 1, 2019 to March 15, 2020, while previous fiscal year's data are provided for the full fiscal year.

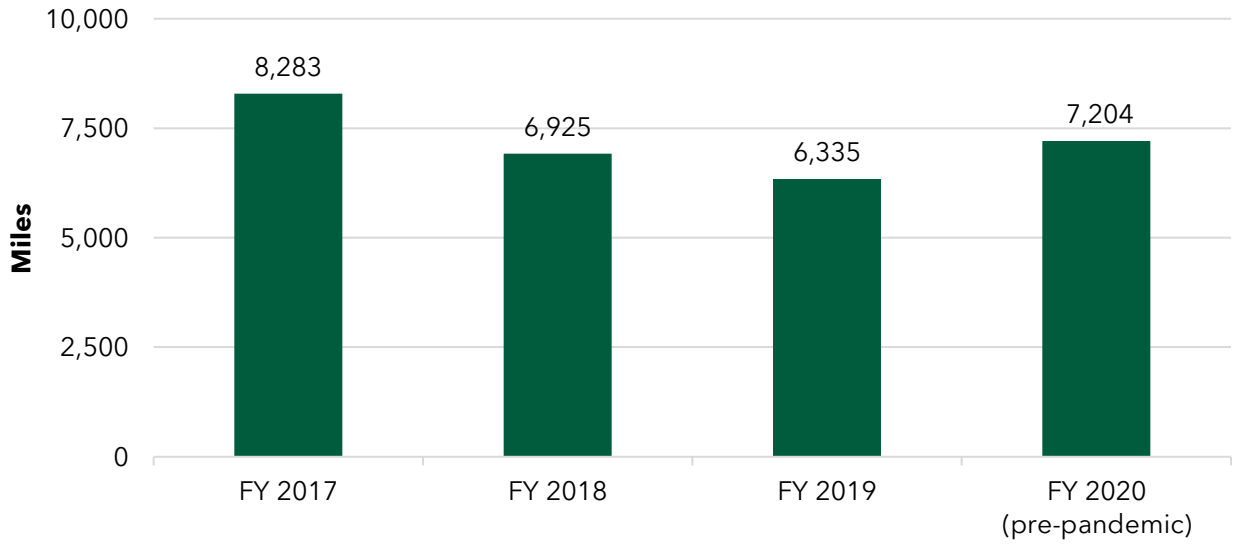
Figure 2: Equipment Reliability for Metrorail (MDBD)



Source: Metro Performance Report FY2020

Note: FY 2020 data are for a pre-pandemic period of July 1, 2019 to March 15, 2020. All other data are reported for the full fiscal year.

Figure 3: Equipment Reliability for Metrobus



Source: Metro Performance Report FY 2020

Note: FY 2020 data are for a pre-pandemic period of July 1, 2019 to March 15, 2020. All other data are reported for the full fiscal year.

Report Category Definitions and Notes
Metrobus On-Time Performance: For on-time performance in FY 2020, the results were presented are for a partial year, July 1, 2019 through March 15, 2020, the day before WMATA first adjusted service due to the pandemic. **Metrobus Calculation:** $\frac{\text{Number of vehicles arriving at a timepoint at or close to the scheduled arrival time}}{\text{Total number of vehicles arriving at timepoint}}$
Metrorail On-Time Performance: For on-time performance in FY 2020, the results were presented are for a partial year, July 1, 2019 through March 15, 2020, the day before WMATA first adjusted service due to the pandemic. **Metrorail Calculation:** $\frac{\text{Number of Journeys completed on time}}{\text{Total number of journeys}}$
Metrobus Mean Distance between Delays/Failures: For mean distance between delays/failures in FY 2020, the results were presented are for a partial year, July 1, 2019 through March 15, 2020, the day before WMATA first adjusted service due to the pandemic.
Metrorail Mean Distance between Delays/Failures: For mean distance between delays/failures in FY 2020, the results were presented are for a partial year, July 1, 2019 through March 15, 2020, the day before WMATA first adjusted service due to the pandemic.

[110] American Public Transportation Association (APTA). "The Hidden Traffic Safety Solution: Public Transportation." September 2016. <https://www.apta.com/wp-content/uploads/Resources/resources/reportsandpublications/Documents/APTA-Hidden-Traffic-Safety-Solution-Public-Transportation.pdf>
[111] American Public Transportation Association (APTA). "2020 Public Transportation Fact Book. 71st Edition" p. 22. March 2020. <https://www.apta.com/wp-content/uploads/APTA-2020-Fact-Book.pdf >
[112] Virginia Compacts § 33.2-3101. Washington Metrorail Safety Commission Interstate Compact.
[113] Federal Transit Administration. "National Transit Database (NTD) Glossary." May 20, 2020. <www.transit.dot.gov/ntd/national-transit-database-ntd-glossary>
[114] Federal Transit Administration. "Safety & Security Time Series Data: Read Me." <www.transit.dot.gov/ntd/data-product/safety-security-time-series-data>
[115] S&S-40 and S&S-50 are the NTD Report Forms <https://www.transit.dot.gov/ntd/data-product/safety-security-time-series-data> Reference "S&S-40, Major Event Report" and "S&S-50, Non-Major Event Report" in the Appendix.
[116] Ibid.
[117] WMATA. "Q3 FY 2020 Metro Performance Report." Pg. 14. July 2020. <https://www.wmata.com/about/records/public-records.cfm>
[118] Ibid.
[119] Ibid.
[120] Ibid.

4. Metrorail and Metrobus Financial Performance

Metrorail financial performance measures are required by Section § 33.2-3401 of the Code of Virginia, pursuant to Chapter 854 of the 2018 Virginia Acts of Assembly. Transit agencies, as a public service, aim to minimize cost and deliver service as efficiently as possible, using the following three measures:

1. Metrorail Farebox Recovery and Metrobus Farebox Recovery
2. Metrorail Service per Rider and Metrobus Service per Rider
3. Cost per Metrorail Service Hour and Cost per Metrobus Service Hour

NTD FY 2019 data is reported for each of the above measures and includes calculations for both Metrorail and Metrobus. For Metrobus, data presented includes both services that are directly operated by WMATA and those which are operated by a contracted provider.[121] It is also important to note that due to robust auditing and review processes, NTD data is typically released at least one year or more after the fiscal year it represents. Data provided in this section is from FY 2019 (July 1, 2018 to June 30, 2019) and will not reflect impacts on ridership that were incurred due to COVID-19 pandemic and implementation of safety protocols made by WMATA beginning in March 2020.

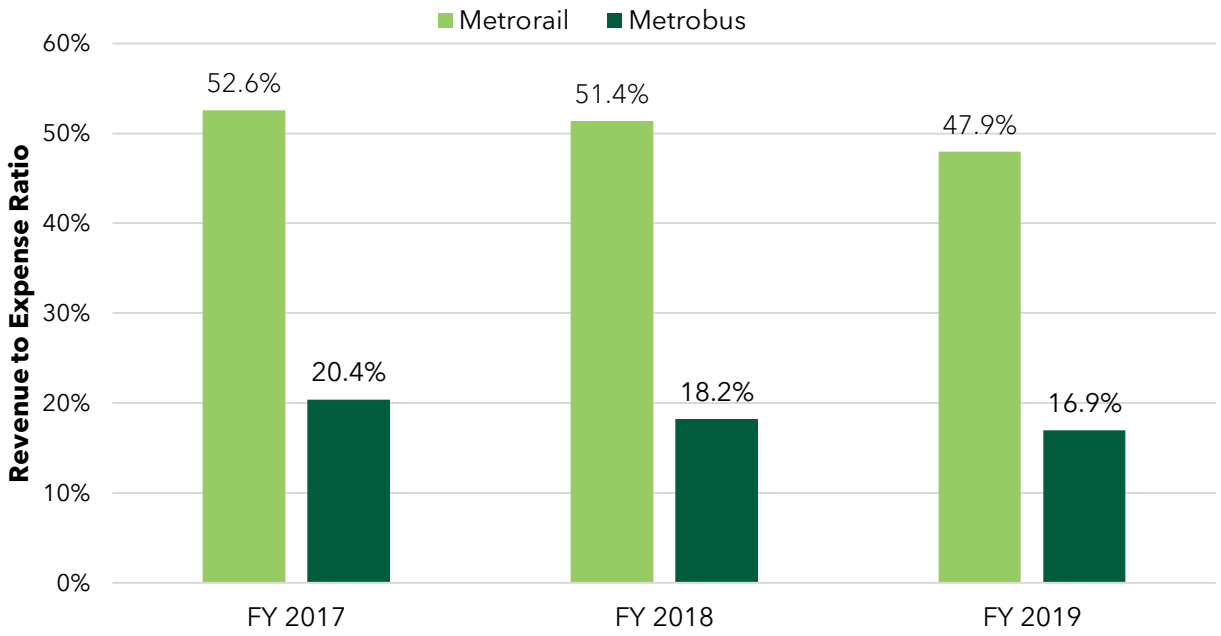
4.1 Metrorail and Metrobus Farebox Recovery

Farebox recovery indicates how much of an agency's operating costs are recovered through passenger fare revenues. This measure is used to identify how effectively an agency funds its operating costs. A higher recovery ratio indicates that the transit agency recoups a larger share of its operating costs through passenger revenue.

Farebox recovery ratios differ across transit modes. According to the American Public Transportation Association (APTA) 2020 Public Transportation Fact Book, rail services generally have higher farebox recovery rates than bus services in the United States, where the highest level of average revenue per unlinked passenger trip is generated by commuter rail and commuter bus, the modes that represent the longer trip lengths for passengers.[122] Because rail systems generally have higher fares and higher ridership than bus systems, farebox recovery tends to be higher for rail systems than for bus systems.

Per Figure 4, Metrorail farebox recovery was 47.9 percent in FY 2019 and Metrobus farebox recovery was 16.9 percent in FY 2019.

Figure 4: Metrorail and Metrobus Farebox Recovery



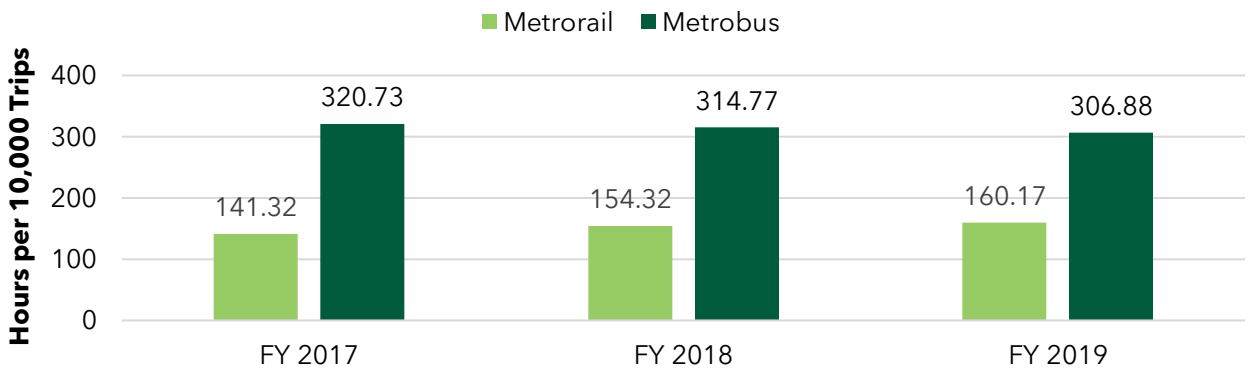
Source: WMATA NTD, Form F-10 & F-30[123]

4.2 Metrorail and Metrobus Service Per Rider

Service per rider indicates the number of railcar or bus service hours offered per 10,000 passenger trips. This number summarizes how efficiently an agency is transporting passengers. Agencies strive to strike a balance between serving as many passengers as possible while providing service at a reasonable cost. A low service per rider number indicates that relatively few hours of service are required to serve 10,000 passengers, which indicates higher efficiency.

Per Figure 5, Metrorail service per rider was 160.17 hours per 10,000 trips in FY 2019 and Metrobus service per rider was 306.88 hours per 10, 000 in FY 2019.

Figure 5: Metrorail and Metrobus Service Per Rider



Source: WMATA NTD, Form S-10[124]

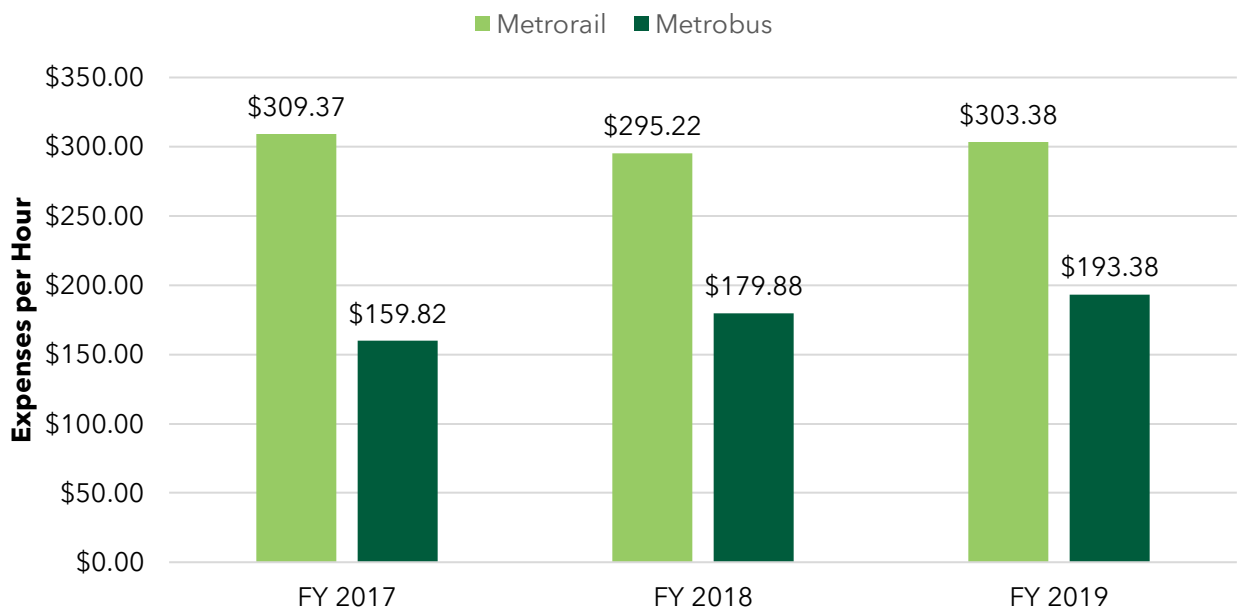
4.3 Cost Per Metrorail and Metrobus Service Hour

The cost per Metrorail service hour is the average cost associated with the operation and maintenance of one railcar for each hour of passenger revenue service. A lower number indicates a lower hourly cost to operate each railcar. Heavy rail services in the U.S. generally have a substantially higher cost per service hour than bus services because they use larger vehicles over shorter service miles.[125]

The cost per Metrobus service hour is the approximate cost associated with the operation and maintenance of a vehicle for each hour of revenue service. A lower number indicates a lower average hourly cost to operate each bus.

Per Figure 6, the cost per Metrorail service hour was $303.38 in FY 2019 and Metrobus service hour was $193.38 in FY 2019.

Figure 6: Cost Per Metrobus and Metrorail Service Hour



Source: WMATA NTD, Form S-10[126] & F-30[127]

Metrorail and Metrobus Financial Performance Definitions and Notes	
Metrorail/Metrobus Farebox Recovery	Farebox recovery is calculated by dividing the funds earned (fare revenue) by the total operating expenses (e.g. labor, services for operating and maintaining the transit system, general administration). Reference the Appendix for the official NTD definition.
Metrorail/Metrobus Service per Rider	Service per rider is calculated for each mode by taking the total vehicle revenue hours divided by the number of unlinked trips and then multiplying the result by 10,000. Vehicle revenue hours are the duration that a vehicle travels for revenue generation. The factor of 10,000 in the calculation of service per rider is used for readability. Since service per rider is a relative metric, other scaling factors could be used. The cost per Metrorail service hour factors in a fully loaded operating and maintenance cost. Reference the Appendix for the official NTD definition.
Costs Per Metrorail/Metrobus Service Hour	Costs per service hour are calculated for each mode by taking the total operating expenses and dividing by total vehicle revenue hours. Vehicle revenue hours are the duration that the vehicle travels.

[121] FY 2019 Metrobus data includes services operated by contracted provider.
[122] American Public Transportation Association (APTA). "2020 Public Transportation Fact Book. 71st Edition" p. 22. March 2020. <https://www.apta.com/wp-content/uploads/APTA-2020-Fact-Book.pdf>
[123] Form F-10 is the NTD Sources of Funds – Funds Expended and Funds Earned form, Form F-30 is the NTD Operating Expenses form. <https://www.transit.dot.gov/ntd/ntd-reporting-system-forms>
[124] Form S-10 is the NTD Service form. <https://www.transit.dot.gov/ntd/ntd-reporting-system-forms>
[125] American Public Transportation Association (APTA). "2020 Public Transportation Fact Book. 71st Edition" p. 22. March 2020. <https://www.apta.com/wp-content/uploads/APTA-2020-Fact-Book.pdf>
[126] Ibid.
[127] Ibid.

4. Metrorail and Metrobus Ridership

Because public transit services exist to transport passengers, transit systems seek to maximize patronage, measured in passengers. This section summarizes Metrorail and Metrobus ridership, which is measured by the NTD using:

1. Unlinked Passenger Trips (UPT)
2. Passenger Miles Traveled (PMT)

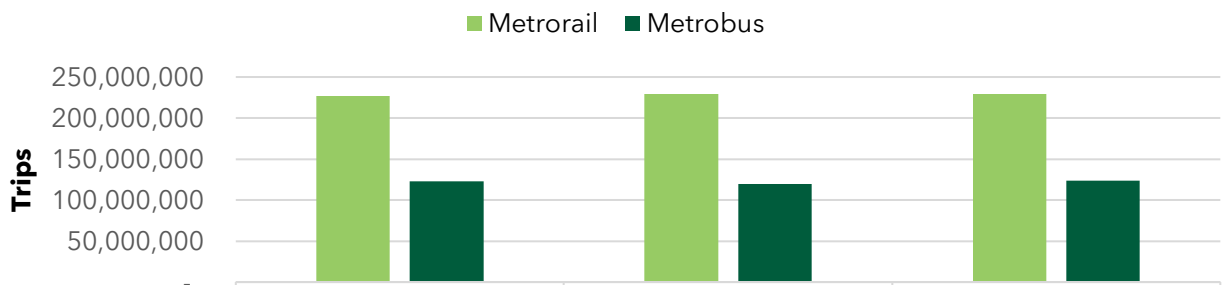
The meaning and significance of these two ridership measures are clarified in Sections 5.1 and 5.2. Data is reported for FY 2019 and is from the NTD. NTD FY 2019 data is reported for each of the above measures and includes calculations for both Metrorail and Metrobus. For Metrobus, data presented includes both services that are directly operated by WMATA and those which are operated by a contracted provider.[128] It is also important to note that due to robust auditing and review processes, NTD data is typically released at least one year or more after the fiscal year it represents. Data provided in this section is from FY 2019 (July 1, 2018 to June 30, 2019) and will not reflect impacts on ridership that were incurred due to COVID-19 pandemic and implementation of safety protocols made by WMATA beginning in March 2020.

5.1 Metrorail and Metrobus Unlinked Passenger Trips

Unlinked passenger trips (UPT) indicate the number of passengers boarding vehicles and demonstrates the overall number of passengers passing through the overall Metro system. A higher UPT reflects greater use of transit services. This section provides FY 2019 UPT data for Metrorail and Metrobus. The official NTD definition for this ridership metric is included in the Appendix.

In FY 2019, total ridership for Metrorail was 228,974,810 unlinked passenger trips and Metrobus was 123,333,115 unlinked passenger trips, as shown in Figure 7.

Figure 7: Metrobus and Metrorail Ridership, UPT



	FY 2017	FY 2018	FY 2019
Metrorail	227,053,037	229,233,254	228,974,810
Metrobus	123,124,352	119,681,096	123,333,115

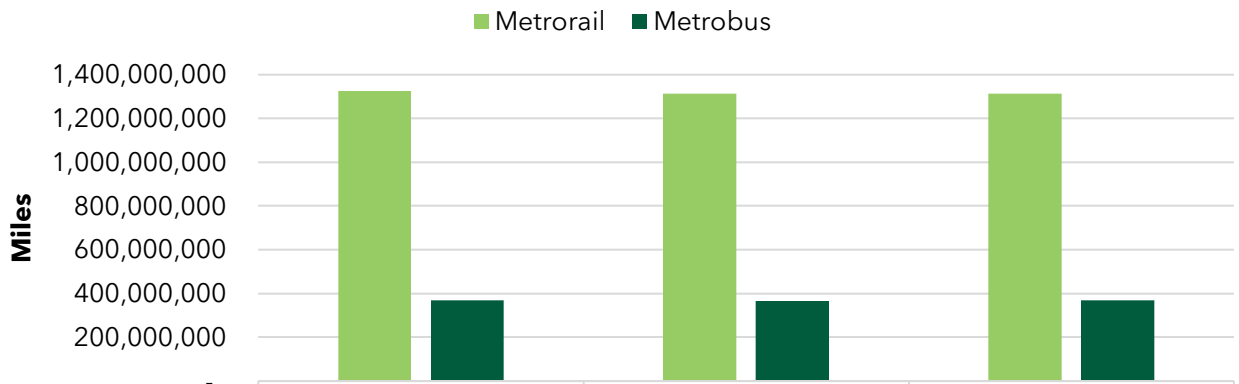
Source: WMATA NTD, Form S-10[129]

5.2 Metrorail and Metrobus Passenger Miles Traveled

Passenger miles traveled (PMT) indicates the total sum of miles traveled by all passengers aboard the transit service. A single passenger traveling 10 miles by bus would count as 10 passenger miles traveled. As with UPT, a higher PMT figure indicates greater patronage of transit services, providing insight into both UPT and distances traveled by passengers.

In FY 2019, the total passenger miles traveled for Metrorail was 1,313,511,151 and Metrobus was 367,558,782 as shown in Figure 8. As mentioned previously, the data presented for passenger miles traveled is from NTD and represents a period of time before the onset of the COVID-19 pandemic.

Figure 8: Metrobus and Metrorail Ridership, PMT



	FY 2017	FY 2018	FY 2019
Metrorail	1,326,262,650	1,314,002,629	1,313,511,151
Metrobus	369,020,804	366,498,831	367,558,782

Source: WMATA NTD, Form S-10[130]

Metrorail and Metrobus Ridership Definitions and Notes	
Metrorail Unlinked Passenger Trips	NTD reports ridership using the UPT metric, which reflects the number of passenger boardings. The trip of a passenger who boards two separate Metrorail trains, transferring from one Metrorail line onto a different line, would be counted as two UPTs. Metrorail directly records and publishes linked passenger trips, which are adjusted to UPT using a statistical method based on a passenger survey. A linked passenger trip may include boarding two or more trains. This statistical adjustment from linked passenger trips to unlinked passenger trips implies that NTD Metrorail ridership figures for FY 2019 will not match those in the Metro Performance Report (MPR).
Metrobus Unlinked Passenger Trips	The NTD reports unlinked passenger trips (UPT), which is the number of passenger boardings. Metrobus directly records bus passenger boardings.

[128] FY 2019 Metrobus data includes services operated by contracted provider.
[129] Form S-10 is the NTD Service form. <https://www.transit.dot.gov/ntd/ntd-reporting-system-forms>
[130] Ibid.

Appendix

This appendix includes definitions and sources for the terminology used throughout the report.

Definitions

To provide a holistic picture of WMATA's safety, reliability, financial and ridership performance, the definitions below have been aggregated from the following sources as indicated in the footnotes:

1. When not indicated otherwise, definitions are taken directly from the NTD Glossary[131].
2. For metrics without an NTD definition, a definition is taken from WMATA's FY 2020 Metro Performance Report (MPR)[132]. MPR definitions also include an explanation of what each metric mean[s] and why it is important to [their] strategy. These explanations are included along with the definitions.
3. To build a complete understanding of each MPR definition, WMATA provided NVTC with clarifications, which are denoted with the footnote "Provided by WMATA."

C

Collision
A vehicle/vessel accident in which there is an impact of a transit vehicle/vessel with: another transit vehicle, a non-transit vehicle, a fixed object, a person(s) (suicide/attempted suicide included), an animal, a rail vehicle, a vessel or a dock.

Cost per Service Hour[133]
The average cost to operate one vehicle/passenger car for one hour of passenger service.

D

Deadhead (Miles and Hours)
The miles and hours that a vehicle travels when out of revenue service. Deadhead includes:

- Leaving or returning to the garage or yard facility
- Changing routes
- When there is no expectation of carrying revenue passengers

Deadhead does not include:

- Charter service
- School bus service
- Operator training
- Maintenance training

Derailments
Non-collision incidents in which one or more wheels of a vehicle unintentionally leaves the rails.

F

Failure, Metrobus
WMATA counts as failures those buses with interrupted trips due to mechanical problems that resulted in lost trips. Therefore, only bus maintenance chargeables (BMCs) are counted.

- Major failures are BMCs that may leave the bus stranded on the street or result in grossly unsafe operation. Examples: brakes, door interlock, generator, smoke/fire, large fluid leaks, engine or transmission shutdown, broken wipers on rainy days. ("Accidents" caused by mechanical failure (i.e. brakes not engaging) are counted as major.)
- Minor failures are BMCs that may be deemed unsafe by the operator, manufacturer or engineers to protect the bus from irreparable damage. Examples: engine/transmission malfunction indicators, windshield, mirrors, unsafe interior or exterior body issues.

Failure, Metrorail
WMATA defines a railcar failure as a mechanical failure that requires corrective maintenance. Failures related to operator error or customer behavior, e.g. doors that fail because they were held open by customers, are not counted. Not all failures prevent vehicles from completing scheduled revenue trips or starting the next scheduled revenue trips. In some cases, corrective maintenance can be conducted after the scheduled trips are completed.

Farebox Recovery Ratio[134]
The portion of operating expenses that are paid for by fare revenues. This metric is calculated as: *Fare Revenue ÷ Operating Expenses*.

Fare Revenue
All income received directly from passengers, paid either in cash or through pre-paid tickets, passes, etc. It includes donations from those passengers who donate money on the vehicle. It includes the reduced fares paid by passengers in a user-side subsidy arrangement.

Fatality
A death or suicide confirmed within 30 days of a reported incident. Does not include deaths in or on transit property that are a result of illness or other natural causes.

Fire
Uncontrolled combustion made evident by flame that requires suppression by equipment or personnel.

Fringe Benefits
The payments or accruals to others (insurance companies, governments, etc.) on behalf of an employee and payments and accruals direct to an employee arising from something other than a piece of work. These payments are transit agency costs over and above labor costs, but still arising from the employment relationship.

H

Headway
The time interval between vehicles moving in the same direction on a route.

I

Injury
Any damage or harm to persons as a result of an event that requires immediate medical attention away from the scene.

L

Linked Passenger Trips[135]
A linked passenger trip is counted when a customer enters through a faregate. In an example where a customer transfers between two trains to complete their travel one trip is counted. Metrorail reports linked passenger trips.

Labor (Cost)[136]
The pay and allowances due employees in exchange for the labor they provide on behalf of the transit agency. The labor allowances include payments made directly to the employee arising from the performance of a piece of work.

M

Major Event Report (S&S-40) [137]
The Major Event Report (S&S-40) captures detailed information on severe safety and security events that occur within a transit environment. Agencies must complete one S&S-40 per reportable event, regardless of how many thresholds an event meets.

A reportable event is one that meets any NTD reporting threshold (detailed below) and occurs:

- On transit right-of-way or infrastructure;
- At a transit revenue facility;
- At a maintenance facility or rail yard;
- During a transit-related maintenance activity, or
- Involves a transit revenue vehicle.

Mean Distance between Delays[138]
The average number of miles traveled before a railcar experiences a failure that leads to a delay of four or more minutes. This is equivalently expressed as: *Total railcar revenue miles ÷ Number of failures during revenue service resulting in delays of four or more minutes*.

Some car failures result in inconvenience or discomfort but do not always result in a delay of service, such as hot cars. Mean distance between delays includes those failures that had an impact on customer on-time performance.

Mean Distance between Failures[139]
The average number of miles traveled before a mechanical breakdown requiring the bus to be removed from service or deviate from the schedule. This can also be expressed as: *Total revenue miles ÷ Total number of failures.*

Mean distance between failures is used to monitor trends in vehicle breakdowns that cause buses to go out of service and to plan corrective actions. Factors that influence fleet reliability include vehicle age, quality of maintenance program, original vehicle quality, and road conditions affected by inclement weather and road construction.

N

Non-Major Monthly Summary (S&S-50)[140]
The Non-Major Monthly Summary Report captures monthly summary information on minor fires and other less severe safety events that are not reportable as Major Events.

Non-Labor Costs
The costs associated with operating expenses less labor cost, including:[141]

1. Fuel/Lube
2. Tires/Tubes
3. Other Materials/Supplies
4. Utilities
5. Casualty/Liability Costs
6. Taxes

O

On-Time Performance (Metrobus)[142]
Bus on-time performance (OTP) communicates the reliability of bus service, which is a key driver of customer satisfaction and ridership.

- For schedule-based routes, OTP measures adherence to the published route schedule for delivered service.
- For headway-based routes, OTP measures the adherence to headways, or the time customers wait between buses. Headway-based routes include routes 70, 79, X2, 90, 92, 16Y, and Metroway.

Factors that can affect OTP include: traffic congestion, detours, inclement weather, scheduling, vehicle reliability, operational behavior or delays caused by passengers. Measurements are calculated as follows:

<u>Percentage of bus service delivered on-time</u>

Schedule-based routes = Number of time points delivered on time based on a window of 2 minutes early and 7 minutes late ÷ Total number of time points delivered

Headway-based routes = Number of time points delivered

within the scheduled headway + 3 minutes ÷ Total number of time points delivered

On-Time Performance (Metrorail)[143]
Train on-time performance measures the adherence to weekday headways, or the time customers wait between trains. Factors that can affect on-time performance include: infrastructure conditions, missed dispatches, railcar delays (e.g., doors), or delays caused by sick passengers. Station stops are tracked system-wide, with the exception of terminal and turn-back stations. Measurements are calculated as follows:

Number of station stops delivered within the scheduled headway plus 2 minutes during rush (AM/PM) service ÷ Total station stops delivered.

Number of station stops delivered up to 150% of the scheduled headway during non-rush (midday and evening) ÷ Total station stops delivered.

The peak and off-peak hours are:

1. **Peak periods**: AM rush (approximately 5-9:30 a.m.) and PM rush (approximately 3-7 p.m.)
2. **Off-peak periods**: Midday (approximately 930 a.m.-3 p.m.) and Night (approximately 7:00 p.m. to close)

Operating Expenses
These expenses include labor and non-labor costs, and services for operating and maintaining the mode, including general administration costs. Labor costs are fully loaded, meaning they include fringe benefit costs (directly paid to employees as well as indirectly, e.g. payments to pension funds) in addition to wages and salary costs.[144]

P

Passenger Miles Traveled (PMT)[145]
The cumulative sum of the distances ridden by each passenger.

R

Ridership
Ridership is a measure of total service consumed and an indicator of value to the region. Drivers of this indicator include service quality and accessibility.

Passenger trips are defined as follows:

- Metrorail reports passenger trips. A passenger trip is counted when a customer enters through a faregate. In an example where a customer transfers between two trains to complete their travel one trip is counted.
- Metrobus reports passenger boardings. A passenger boarding is counted via the onboard Automatic Passenger Counter (APC) when a customer boards a Metrobus. In an example where a customer transfers between two Metrobuses to complete their travel two trips are

counted. Metrobus totals also include shuttles* to accommodate rail station shutdowns and other track work.

Revenue Service (Hours)
The time when a vehicle is available to the public and there is an expectation of carrying passengers. These passengers either:

1. Directly pay fares
2. Are subsidized by public policy
3. Provide payment through some contractual arrangement

Vehicles operated in fare-free service are considered in revenue service. Revenue service includes:

1. Layover/recovery time

Revenue service excludes:

1. Deadhead[146]
2. Vehicle maintenance testing
3. School bus service
4. Charter Service

S

Security Event
An occurrence of a bomb threat, bombing, arson, hijacking, sabotage, cyber security event, assault, robbery, rape, burglary, suicide, attempted suicide (not involving a transit vehicle), larceny, theft, vandalism, homicide, CBR (chemical/biological/radiological) or nuclear release or other event.

Service per Rider[147]
A performance metric that measures the ratio of vehicle revenue hours to unlinked passenger trips. Note that in this report, this ratio is scaled by a factor of 10,000 for readability.

T

Time Point
A time point is an exact "point in time" at which Metro service is provided. Time points can be anywhere along the route, including an intersection. Adherence to schedule is measured as the bus leaves each time point except the last for each run. Time point is used in the definition of on-time performance for Metrobus.

U

Unlinked Passenger Trips (UPT)
The number of passengers who board public transportation vehicles. Passengers are counted each time they board vehicles no matter how many vehicles they use to travel from their origin to their destination.

Passenger trips are defined as follows:[148]

- Metrorail reports passenger trips. A passenger trip is counted when a customer enters through a faregate. In an example where a customer transfers between two trains to complete their travel one trip is counted.
- Metrobus reports passenger boardings. A passenger boarding is counted via the onboard Automatic Passenger Counter (APC) when a customer boards a Metrobus. In an example where a customer transfers between two Metrobuses to complete their travel, two trips are counted. Metrobus totals also include shuttles* to accommodate rail station shutdowns and other track work.

V

Vehicle Revenue Hours

The hours that a vehicle actually travels from the time it pulls out of its garage to enter passenger service to the time it returns. Vehicle revenue hours are often called platform time.

Vehicle revenue hours include:

- Layover / recovery time.

Vehicle revenue hours exclude:

- Deadhead;
- Operator training
- Vehicle maintenance testing; and
- School bus and charter services.

---

[131] FTA. "National Transit Database (NTD) Glossary." May 20, 2020

[132] WMATA. "Metro Performance Report." Fiscal Year 2020. <https://www.wmata.com/about/records/scorecard/upload/MetroPerformanceReport_Q3FY2020.pdf>

[133] Federal Transit Administration (FTA). "2019 Metrics." <https://www.transit.dot.gov/ntd/data-product/2019-metrics>

[134] Instead of farebox recovery ratio, the Federal Transit Administration (FTA) uses the term 'recovery ratio' per the FTA 2019 Metrics: www.transit.dot.gov/ntd/data-product/2019-metrics. This definition is adapted from the FTA Metrics list.

[135] WMATA. "Metro Performance Report." Fiscal Year 2020.

[136] The NTD uses 'labor' as the metric for labor cost. < https://www.transit.dot.gov/ntd/national-transit-database-ntd-glossary#S>

[137] Adapted from: National Transit Database. "NTD Safety & Security Reporting Manual." pp. 16. 2020. < https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/ntd/146986/2020-ntd-safety-and-security-policy-manual.pdf >

[138] WMATA. "Metro Performance Report." p. 49. Fiscal Year 2020. <https://www.wmata.com/about/records/scorecard/upload/MetroPerformanceReport_Q3FY2020.pdf>

[139] Ibid

[140] Adapted from: National Transit Database. "NTD Safety & Security Reporting Manual." pp. 55. 2020. < https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/ntd/146986/2020-ntd-safety-and-security-policy-manual.pdf >

[141] Categories under Operating Expenses are based on NTD Definition. Federal Transit Administration. "The 2020 Reporting Policy Manual for the National Transit Database." October 2020. <https://www.transit.dot.gov/sites/fta.dot.gov/files/2020-10/2020%20NTD%20Reporting%20Policy%20Manual_1.pdf>

[142] WMATA. Washington Metropolitan Area Transit Authority. "Metro Performance Report." p. 48. Fiscal Year 2019. <https://www.wmata.com/about/records/scorecard/upload/MetroPerformanceReport_Q3FY2020.pdf>

[143] Ibid.

[144] Federal Transit Administration. "The 2020 Reporting Policy Manual for the National Transit Database." p. 90. October 2020. <https://www.transit.dot.gov/sites/fta.dot.gov/files/2020-10/2020%20NTD%20Reporting%20Policy%20Manual_1.pdf>
[145] Federal Transit Administration. "The 2020 Reporting Policy Manual for the National Transit Database." p. 129. October 2020. <https://www.transit.dot.gov/sites/fta.dot.gov/files/2020-10/2020%20NTD%20Reporting%20Policy%20Manual_1.pdf>
[146] Federal Transit Administration. "The 2020 Reporting Policy Manual for the National Transit Database." p. 114. October 2020. <https://www.transit.dot.gov/sites/fta.dot.gov/files/2020-10/2020%20NTD%20Reporting%20Policy%20Manual_1.pdf>
[147] Department of Rail and Public Transportation (DRPT). "Review of WMATA Operating, Governance and Financial Conditions." March 2018. <www.drpt.virginia.gov/media/2320/full-report.pdf>
[148] WMATA. Washington Metropolitan Area Transit Authority. "Metro Performance Report." p. 44. Fiscal Year 2019. <https://www.wmata.com/about/records/scorecard/upload/MetroPerformanceReport_Q3FY2020.pdf>

NVTC
NORTHERN VIRGINIA TRANSPORTATION COMMISSION

novatransit.org
2300 Wilson Boulevard, Suite 230
Arlington, VA 22201
(703) 524-3322
facebook.com/NoVaTransit
twitter.com/NoVaTransit