

2019 REPORT ON THE PERFORMANCE AND CONDITION OF THE WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY



NORTHERN VIRGINIA TRANSPORTATION COMMISSION

THE VOICE OF TRANSIT IN NORTHERN VIRGINIA

SUBMITTED TO THE GOVERNOR
AND THE GENERAL ASSEMBLY
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On behalf of the Northern Virginia Transportation Commission (NVTC), I am pleased to submit this *Report on the Performance and Condition of the Washington Metropolitan Area Transit Authority (WMATA)*. This is the second annual report in response to NVTC's responsibilities as established in § 33.2-3403 of the Code of Virginia.

This report includes data on the current performance and condition of WMATA and presents NVTC recommended strategies that, if implemented, have the potential to further reduce the growth in WMATA's operating costs and improve its operational efficiency. NVTC developed these strategies in coordination with its local jurisdictions responsible for funding WMATA. In addition to fulfilling our reporting requirements, NVTC continues to provide funding oversight and stewardship of WMATA on behalf of its member jurisdictions through the management of state and regional financial assistance to the transit agency and its appointments to the WMATA Board of Directors.

This report also documents the use of the first year of the WMATA Capital Fund, authorized under § 33.2-3401 of the Code of Virginia. The WMATA Capital Fund provided \$121.3 million in dedicated capital funding to WMATA in FY2019 toward its \$1.525 billion capital budget. The funds supported system safety and state of good repair improvements that are contributing to a rebound in Metrorail customer satisfaction and increases in system ridership.

This report is not done in isolation; Chapter 854 of the 2018 Virginia Acts of Assembly provides specific oversight requirements to the Commonwealth Transportation Board (CTB) regarding WMATA's governance, reporting, strategic planning, and operational cost containment. In October 2019, the CTB affirmed that WMATA demonstrated compliance with these requirements during FY2019.

WMATA's condition and performance are of paramount importance to NVTC and its jurisdictions. As such, we look forward to a continued dialogue with our state partners on these important matters.

Best regards,

Matthew F. Letourneau
Chairman

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Introduction

The Northern Virginia Transportation Commission (NVTC)ⁱ 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 Directorsⁱⁱ through its appointments to the panel. NVTC also manages more than \$154 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 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

ⁱ 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.

ⁱⁱ 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.

- 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

Since receiving dedicated funding from the Commonwealth, WMATA has made significant investments in its capital program to improve the performance, reliability and safety of the system. In its first *2018 Report on the Performance and Condition of WMATA*, NVTC identified potential strategies that WMATA could implement to reduce costs and improve efficiencies. The first section of this report provides additional strategies as well as an update to the Governor and General Assembly on WMATA's progress toward reducing its operating expenses and making the system more efficient. In addition, WMATA has provided information on how the agency has used funds from the Commonwealth's WMATA Capital Fund. The final section of the report summarizes the safety, operating, financial and ridership information on the state of WMATA's rail and bus systems.

Much of the data included in this section are extracted from the National Transit Database (NTD) of the Federal Transit Administration (FTA). On an annual basis,ⁱⁱⁱ NTD publishes safety, operating and financial data for each transit agency in the country that receives federal transit grant funding. For legislative requirements for which NTD data are unavailable, such as system reliability, data are extracted from the Metro Performance Report (MPR) published by WMATA on a quarterly basis. Table 1 summarizes the data sources for each category of the report, as well as the latest full fiscal or calendar year for which data are available.

ⁱⁱⁱ Monthly for some data such as ridership.

Table 1: Data Sources and Years Presented in this Report

Report Category	Latest Year for which Data is Publicly Available	Data Source
Cost Reduction Strategies	Policy Decision – not relying on specific data sources	
Use of Funds	Funds were expended in Fiscal Year 2019 ^{iv}	
Safety	Calendar Year 2018	NTD
Reliability	Fiscal Year 2019	MPR
Financial Performance	Fiscal Year 2018	NTD
Ridership	Fiscal Year 2018	NTD

For this report, data are generally provided for fiscal or calendar years 2017 and 2018. (Note: NTD publishes safety data on a calendar year rather than a fiscal year basis.) WMATA’s Metro Performance Report provides reliability data. FY2019 MPR data was released in September 2019. While this operational performance data is not aligned with financial performance data from NTD, it is included in this report to provide the most up to date information.

^{iv} Source: WMATA.

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

Overview

WMATA is an essential asset to the Commonwealth of Virginia. Along with the Virginia Railway Express (VRE) commuter rail, it allows for an additional 85,000 households and 130,500 jobs that generate over \$600 million each year in sales and income tax revenues to the Commonwealth.¹ In 2018, the Commonwealth of Virginia, the District of Columbia and the State of Maryland each passed legislation to provide dedicated capital funding to meet the agency's growing capital investment needs, address a state of good repair backlog, and provide safe and reliable service. Securing dedicated funding from the three WMATA Compact signatories was as historic as when the three signatories and the federal government came together to form the transit authority in the 1960s.

Section § 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.² 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 cost so that its annual operating subsidies increase in line with legislative requirements.

NVTC identified strategies to reduce WMATA's growth in costs and improve operational efficiencies in its initial *2018 Report on the Annual Performance and Condition of WMATA*.³ WMATA has since made progress toward stabilizing its operating costs and improving efficiency in ways that reflect many of NVTC's earlier strategies that will be discussed later in this chapter.

In addition to NVTC's earlier strategies, this chapter identifies new strategies that WMATA could implement to advance the agency's efforts to reduce costs and improve efficiency. These are also specific strategies that WMATA can act on in the short-term, either through the WMATA Board of Directors or the General Manager/CEO. The annual budget development process presents an opportune time for consideration of these strategies because WMATA identifies efficiencies or

other initiatives needed to limit the amount paid by the WMATA funding jurisdictions when preparing the budget. Initiatives in WMATA's budget process must take into account fiscal constraints, public hearing requirements, and equity concerns.

NVTC worked in close coordination with its local jurisdictions to provide WMATA with additional strategies that include a mix of approaches to grow ridership and revenue, control costs, and improve efficiencies. This year, NVTC recommends the following strategies to control costs, improve efficiency and enhance the customer experience while WMATA addresses a state of good repair backlog:

1. Maximize Use of Eight-Car Trains
2. Improve Weekend Rail Service
3. Develop Parking Pass Products
4. Optimize Parking Facilities
5. Expand and Enhance Fare Pass Products

In addition, NVTC continues to recommend strategies that were included in its 2018 Report. This chapter includes a summary of these previously recommended strategies as well as an appendix noting the status of WMATA actions on each. The recommendations in the 2018 Report were carried forward and restructured into the following strategies:

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

Strategy 1: Maximize Use of Eight-Car Trains

NVTC proposes that WMATA run all eight-car trains during peak service to maximize capacity of the current Metrorail system. Operating eight-car trains during the peak periods allows the system to carry more riders per hour through the system's core, especially where the Blue, Orange, and Silver Lines merge at Rosslyn Station and face capacity constraints.⁴

WMATA should consider deploying eight-car trains in a phased approach to lines with the most demand during peak hours to achieve operating efficiencies and grow ridership in a cost-effective manner in the short-term. Improvements to peak hour service could encourage continued peak period ridership. Between FY2017 and FY2018, Metrorail ridership was down overall at 1.5 percent, but weekday ridership showed a slight increase at 0.7 percent, with some railcars

experiencing crowded conditions.⁵ For instance, Orange Line trains at Court House Station in the direction of New Carrollton and Silver Line trains at Rosslyn Station in the direction of Largo Town Center were near or over capacity during the AM peak period from April – June 2019.⁶ Crowded railcars negatively impact ridership because customers have a lower tolerance for crowded conditions and may choose to ride the system less if they expect crowded conditions.⁷ Moreover, WMATA’s continued investments in rebuilding track infrastructure, traction power upgrades and railcar storage facilities make this strategy feasible within the short-term.⁸

Strategy 2: 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 track-work related disruptions and increased wait times for trains or additional transfers for trains, which has a negative impact on service. WMATA measures service levels by tracking on-time performance.⁹ Weekend Metrorail on-time performance was significantly lower than weekday on-time performance in the third quarter of FY2019, at 79 percent and 89 percent respectively.¹⁰ Maintaining high-quality service on weekends will generate revenue by retaining and attracting riders lost on weekends as WMATA continues to improve the safety and reliability of the system.

WMATA has implemented a strong preventative maintenance program, in addition to an expanded capital improvement program. The combined focus on preventative maintenance and capital renewal has resulted in rail performance and reliability improvements but it has also resulted in disruptions to weekend service leading to declining ridership on weekends.¹¹ Between FY2017 and FY2018, overall Metrorail ridership declined by 1.5 percent.¹² However, WMATA separates weekend and weekday ridership in its performance reports, and the data show that weekday ridership was relatively stable at 0.7 percent, while weekend ridership was down 3.3 percent during this time period illustrating the effect that weekend service has on overall ridership figures.¹³

WMATA established guidelines to minimize customer impacts as it rebuilds 20 outdoor station platforms during the Platform Improvement Project.¹⁴ The guidelines include strategies to communicate disruptions to customers and retain riders during major shutdowns and ways to execute work more efficiently.¹⁵ WMATA should consider developing customer-focused service standards and operating procedures for planned weekend service disruptions in order to minimize disruptions to service while maintaining preventative maintenance programs and capital investments.

Strategy 3: Develop Parking Pass Products

NVTC proposes that WMATA develop a subscription-based parking pass for transit riders to increase revenues at Metrorail stations with parking facilities. A subscription-based parking pass 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.¹⁶

A subscription-based parking pass could curb revenue losses from events outside of WMATA's control, such as a federal government shutdown or weather-related events. WMATA estimated a loss of nearly \$400,000 a day in fare and parking revenue during the 34-day federal government shutdown.¹⁷ The Virginia Railway Express (VRE) also saw ridership decline nearly 20 percent during the federal government shutdown. However, revenue declined only 10 percent because VRE offers subscription passes that riders can pre-purchase.¹⁸

Strategy 4: Optimize Parking Facilities

NVTC proposes that WMATA assess and consider reducing parking rates at additional, underutilized WMATA-owned Metrorail parking facilities.¹⁹ Parking utilization directly correlates to ridership trends at Metrorail stations.²⁰ Providing incentives to more transit users who park can, in turn, generate revenue from both the parking fees and rider fares.

WMATA manages more than 60,000 parking spaces at 44 Metrorail stations throughout the region, yielding over \$43 million in annual operating revenue.²¹ At certain Metrorail parking facilities in Virginia, a portion of the parking fees collected goes directly to local Virginia jurisdictions.²² Currently, the system has both underutilized parking facilities and facilities that are at or over capacity during the weekday. In December 2018, the WMATA Board lowered the parking rate at the West Falls Church and Landover Metrorail stations to \$3 a day, following a successful pilot at those stations. The data showed a 27 percent increase in parking utilization as a result of the lower rate, and the pilot project was made permanent.²³ The pilot encouraged existing transit riders to ride the system more frequently and resulted in an overall increase in ridership and net revenue.²⁴ 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.

Strategy 5: Expand and Enhance Fare Pass Products

NVTC proposes that WMATA perform a study to identify fare pass products that address unmet market demand and make purchasing them easier to understand. 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.

Pass products increase ridership, revenue and loyalty to a transit system.²⁵ Analysis of SmarTrip card data shows three primary groups of riders: core customers, day trippers, and visitors; but only 10 percent of these primary riders have fare passes, creating an opportunity for WMATA to benefit by increasing fare pass utilization among these groups.²⁶ WMATA recently took advantage of this opportunity in the approved FY2020 budget by enhancing its fare pass products. The changes reduced the cost of purchasing a pass, added unlimited Metrobus to the rail passes, making bus and rail more price competitive with other transportation modes, and added a 3-day pass option.²⁷ Riders have responded positively to fare pass products and making them easier to afford and understand, which will increase ridership and generate more revenue in the long-run.²⁸ A comprehensive fare pass study could identify more markets for WMATA's fare pass products to attract riders and ensure the agency captures the most revenue from its fare pass program.

NVTC supports WMATA's efforts to increase adoption of its pass products among its primary riders, and the agency should consider other markets like families with children. For example, the Southeastern Pennsylvania Transit Authority (SEPTA) offers a family independence pass.²⁹ The \$30 one-day family pass covers 10 trips on all SEPTA transit service and regional rail for up to two adults and three youth under the age of 18. WMATA's child-fare policy allows up to two children under five-years-old to ride free with an adult paying full fare, while children five and older pay the adult full fare. WMATA could explore pass products to capitalize on the number of families with children, tourists, and others that travel across the region by Metrorail and Metrobus to grow ridership and generate additional revenue.

WMATA is also developing a mobile fare payment platform to allow SmarTrip card users to manage their travel fares, payments and passes through their smart phones.³⁰ Introducing new pass products on WMATA's future mobile app would make it easier for customers to access and understand the pass products that are available as well as reduce cash-handling costs and delays

due to cash transactions.³¹ NVTC sees an opportunity to increase the adoption of pass products by offering them on WMATA's forthcoming mobile app.

Strategies Presented in NVTC's 2018 Report

NVTC's initial *2018 Report on the Performance and Condition of WMATA* included many strategies that WMATA could implement to control the growth of its operating subsidy and make the system more efficient. To date, WMATA has implemented several strategies. However, it's important to revisit each strategy and assess WMATA's progress in responding to them because without changes to WMATA's operating model, operating cost increases are predicted to outpace revenue growth according to WMATA's 2019 adopted strategic plan.³²

The following strategies are a combination of short-term efforts planned for implementation under WMATA's 2019 "Keeping Metro Safe, Reliable and Affordable" strategic plan and subsequent WMATA budgets as well as long-term strategies that may be outside of WMATA's purview and require structural or legislative changes:

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

Strategy 6: Rebuild Ridership and Improve Operational Efficiency of Metrorail and Metrobus

Rebuilding ridership improves WMATA's farebox revenues and enhances the efficiency of Metrorail and Metrobus. WMATA's research found that at least 30 percent of ridership losses in 2013 - 2016 were due to declining customer on-time performance and the state of good repair backlog at the time.³³ 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.³⁴ 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 FY2019 capital funds was the first phase of the Platform Improvement Project. In May 2019, WMATA closed six stations on the Blue and Yellow Lines south of Ronald Reagan Washington National Airport for full platform reconstruction and station

improvements. The \$200 million in capital funding spent to repair Metrorail stations in Virginia is a significant step toward improving the reliability and efficiency of the system overall.³⁵

WMATA spent over \$1.5 billion on capital projects in FY2019, nearly doubling the \$714 million investment made four years prior in FY2015.³⁶ The largest capital investments in FY2019 were to upgrade track infrastructure and purchase 7000-series railcars.³⁷ The delivery of 7000-series railcars dramatically improved railcar reliability, doubling the distance trains traveled without delays in FY2019 compared to FY2018.³⁸ 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 percent of Metrorail customers were on time during FY2019, and Metrorail rider offloads declined by 41 percent from FY2018 – FY2019.³⁹ NVTC supports WMATA's continued investment in its capital program to increase the reliability, safety, and performance of the system and rebuild ridership.

WMATA expanded partnerships with the business community in FY2019 to provide easier access to transit for employees, visitors and students. Expanding transit options for students reduces their transportation costs and attracts future generations to transit. WMATA benefits from the diverse revenue stream and leveraging excess service capacity during the off-peak periods.⁴⁰ In FY2016, WMATA developed the University Pass program (U-Pass) to provide students of participating higher education institutions unlimited rides on Metrobus and Metrorail at a discounted price.⁴¹ The U-Pass program expanded to 12 colleges and universities in FY2019 and WMATA and jurisdictional staff are exploring expanding the program to include local transit providers.⁴² The WMATA Board also approved an extension of the Fairfax County Free Student Bus Program Pilot which generated 32,000 Metrobus trips in FY2019.⁴³

NVTC supports WMATA's engagement with local jurisdictions to explore and implement pilot programs that increase the reliability and speed of Metrobus. NVTC proposed the development and implementation of a regional interoperable off-vehicle fare collection system in its "Northern Virginia Regional Fare Collection Strategic Plan" and as a long-term strategy for WMATA to increase ridership and revenue.⁴⁴ Research at WMATA and other transit agencies shows that speeding up the boarding process can shorten passenger travel time, increase ridership and reduce operating costs.⁴⁵ WMATA will enhance headway-based route scheduling and explore additional no-cash fare and all-door boarding initiatives in FY2020.⁴⁶ WMATA also partnered with the District of Columbia's Department of Transportation to install "queue jump" technology to speed bus trips and keep service on time. The "bus only" traffic signals at six intersections in D.C. allows buses to proceed through the intersections before the standard traffic signals turn green.⁴⁷

NVTC supports WMATA's efforts to make buses faster, safer and more reliable to optimize revenue.

WMATA is evaluating other ways to improve the ridership and efficiency of Metrobus. This past year WMATA used capital funds to expand and rebuild bus garages to find operational efficiencies and plan for future ridership growth. In addition, the agency is discussing its recent recommendations on the Washington Area Bus Transformation Project with stakeholders.

Strategy 7: Increase Non-Fare Revenues

The projected \$814 million of FY2020 WMATA operating revenues is funded in part with \$98 million in non-fare revenue. Declining ridership has an outsized effect on the operating budget since most of the operating revenue is derived from passenger fares. The FY2020 budget includes several customer-focused initiatives meant to reverse ridership losses and attract more riders to the system but increasing fare revenues alone is not enough to keep pace with growing costs.⁴⁸

To contain growth in annual operating subsidies, NVTC supports WMATA's ongoing initiatives and efforts to increase and/or optimize its non-fare revenues. WMATA is doing this by streamlining its parking programs, advancing its joint development program and increasing advertising sales to leverage the value of its assets. 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 FY2020 budget, WMATA expects a six percent increase in advertising sales that will result in \$27.7 million in revenue.⁴⁹

In FY2019, the WMATA Board approved amendments to WMATA's parking policies to improve how WMATA manages its parking facilities and to take advantage of opportunities for additional revenue. The changes expanded the hours for revenue collection to capture non-riders;⁵⁰ allow WMATA to charge for parking when there is a regional event on weekends and federal holidays; and allow WMATA to charge non-riders a special fee to park at Metrorail stations during special events.⁵¹ NVTC supports WMATA's efforts to generate parking revenue from non-riders, prioritize parking for transit riders⁵² of all modes and enact policies that increase parking utilization. WMATA anticipates collecting nearly \$47 million in parking revenue in FY2020 as a result of its parking policies.⁵³

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.⁵⁴ 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 FY2019 to give the agency more flexibility to administer the program, and the agency solicited real estate developers to begin joint development projects at its Huntington, Deanwood, West Falls Church and Capitol Heights Metrorail stations.⁵⁵ Joint development projects are expected to generate \$11.1 million in operating revenue in FY2020.⁵⁶

WMATA is pursuing other real estate investment strategies to generate revenue and improve efficiencies. In FY2019, WMATA put its downtown D.C. headquarters on the market for development under a long-term ground lease. 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. 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 continues to explore nontraditional revenue streams to optimize the value of its Metrorail facilities. In FY2019, WMATA updated its Use Regulations to authorize the sale of food and drink on WMATA property outside of Metrorail stations' paid areas and streamlined its approval process to increase opportunities for commercial uses on WMATA-owned property to generate revenue.⁵⁷ WMATA also negotiated the sale of surplus properties in FY2019 near the Anacostia Metrorail Station⁵⁸ and at sites near transit stations in Silver Spring, Maryland⁵⁹ and College Park, Maryland⁶⁰ for nearly \$12 million in revenue.⁶¹

Strategy 8: Control Cost Escalation and Enhance Efficiency of the Workforce and Contracted Services

WMATA shifted from a reactive to a preventative maintenance program that 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 percent, whereas only making repairs when the system is closed would take up to 30 years to complete.⁶² Dedicated capital funding also allowed WMATA to accelerate the delivery of the capital program in FY2019 and FY2020, including an expanded scope of track and infrastructure work that fully utilizes planned service outages during the shutdown of six Metrorail stations as part of the Platform Improvement Project.⁶³ Performing maintenance work in a cost-effective and efficient manner substantially reduces the time to rehabilitate each station and minimizes impacts to commuters.

Implementing cost and work efficiencies is only part of the solution to maintaining WMATA's operating subsidy growth. The "Keeping Metro Safe, Reliable and Affordable" strategic plan identified labor costs as nearly 70 percent of WMATA's total operating expenditures.⁶⁴ NVTC adopted its *Principles for WMATA Reform* in 2017 and supports WMATA's efforts to implement cost-saving strategies.⁶⁵

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.⁶⁶ The WMATA Board reviewed options to reduce healthcare program and future pension program costs in FY2019. The proposed options identified ways to potentially save one percent of payroll costs for new hires and reduce WMATA's subsidy for retiree healthcare costs by 15 percent or more.⁶⁷ However, additional work with other stakeholders is needed to implement and achieve a solution to WMATA's retiree pension and health benefits challenges.

NVTC also supports adequate funding for WMATA's Office of the Inspector General (OIG). The OIG is tackling issues to improve WMATA's performance and accountability and needs to have enough resources to fulfill its mission. In FY2019, the OIG issued 11 performance audits/evaluations identifying \$19.4 million that could be used more efficiently and created the Inspections, Evaluations and Special Projects unit to react quickly to concerns.

NVTC sees long-term potential to reduce the growth in costs and improve operational efficiency by enhancing employee performance management and incentivizing the workforce and contractors to deliver innovative solutions.

Additional Strategies

WMATA is evaluating new approaches, business models and technologies to address its operating costs and operational efficiencies. WMATA is committed to improving the safety and reliability of the Metrorail system and the Metrobus fleet to grow ridership and generate a return on the investment that NVTC jurisdictions and the Commonwealth make each year. NVTC will continue to monitor what strategies WMATA incorporates to reduce costs and improve efficiencies.

Status of Actions on 2018 NVTC Strategies

Rebuild Ridership and Improve Operational Efficiency of Metrorail and Metrobus	
Strategy	FY2019 Update
Pursue capital investments that increase the reliability of the system	<ul style="list-style-type: none"> • More than 88 percent of Metrorail customers were on time during FY2019, a significant increase from FY2017 when customer on-time performance was only 70 percent.⁶⁸ • WMATA reduced train offloads by 41 percent from FY2018 – FY2019.⁶⁹ • WMATA invested over \$1.5 billion in capital projects in FY2019, which nearly doubled the \$714 million capital investment the agency made in FY2015.⁷⁰ • WMATA is rebuilding and expanding bus garages and maintenance facilities to address state of good repair needs, improve bus efficiencies, and plan for future ridership growth. WMATA opened two new bus garages at Cinder Bed Road in Virginia and Andrews Federal Center in Maryland and the WMATA Board approved a public hearing on reconstructing the Bladensburg Bus Garage to accommodate articulated buses for high-ridership routes and store and repair new buses the agency is procuring.⁷¹ • WMATA has scaled up its level of capital investment and reduced its state of good repair backlog from \$7.1 billion to \$5 billion.⁷² 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 FY2018.⁷³ • WMATA shutdown six Metrorail stations to perform platform reconstruction and other work for \$200 million in capital funds.⁷⁴ • WMATA created a new scheduled maintenance system (SMS) for railcars to reduce delays caused by railcar problems, reduce offloads and promote more efficient maintenance of railcars. To facilitate SMS, the WMATA Board delegated authority to the GM/CEO to consolidate heavy maintenance functions at Greenbelt and Brentwood rail yards and acquire property for a new rail yard to perform heavy rail maintenance.⁷⁵ • WMATA is conducting a study of the Blue, Orange and Silver Line trains identifying options to improve reliability, meet future ridership demand and better serve customers.⁷⁶
Implement new fare-pass products to promote more frequent rail and bus ridership and increase customer satisfaction	<ul style="list-style-type: none"> • For FY2020, WMATA reduced the price of three existing rail passes, added a 3-day pass and added free Metrobus rides to all rail pass products.⁷⁷
Pursue partnerships with the business community and other partners to provide easier access to transit for employees and visitors	<ul style="list-style-type: none"> • The U-Pass program expanded to 12 colleges and universities in FY2019.⁷⁸ • The WMATA Board approved an extension of the Fairfax County Free Student Bus Program Pilot which generated \$64,000 in FY2019.⁷⁹

Rebuild Ridership and Improve Operational Efficiency of Metrorail and Metrobus (cont.)	
Strategy	FY2019 Update
Engage with jurisdictions to implement and explore pilot programs and other efforts to increase the reliability and speed of Metrobus operations	<ul style="list-style-type: none"> In June 2019, WMATA ended the MetroExtra Route 79 cash-free pilot without making the change permanent and will enhance headway-based route scheduling and explore additional no-cash fare and all-door boarding initiatives in the FY2020 budget.^{80 81} WMATA partnered with DDOT to install "queue jump" technology to speed bus trips and keep service on time. The "bus only" traffic signals at six intersections in D.C. allow buses to proceed through the intersections before the standard traffic signals turn green.⁸²
Conduct a comprehensive analysis of WMATA's bus network (Washington Area Bus Transformation Project) and implement recommendations where appropriate	<ul style="list-style-type: none"> The Bus Transformation Project team released its Strategy Summary document in September 2019, which will be followed by an Action Plan later in the fall. NVTC continues to engage with jurisdictions to identify recommendations that could be supported in future annual reports.⁸³
Develop a fare system that can enable the region to implement an interoperable off-vehicle fare collection system on high capacity bus routes	<ul style="list-style-type: none"> WMATA continues to make investments in new technologies including modernization of bus facilities and improved bus travel times through streamlined fare collection and traffic signal prioritization.⁸⁴

Increase Non-Fare Revenues	
Strategy	FY2019 Update
Leverage value for assets WMATA owns by maximizing advertising revenues and optimizing parking revenues	<ul style="list-style-type: none"> The WMATA Board approved amendments to WMATA's parking policies that:⁸⁵ <ul style="list-style-type: none"> Expanded the hours for revenue collection to capture non-riders. Allows WMATA to charge for parking during regional events on weekends and federal holidays. Allows WMATA to charge non-riders a special fee to park at Metrorail stations during major events. WMATA estimates a nine percent increase in parking revenue in the FY2020 budget compared to FY2018.⁸⁶ WMATA expects a six percent increase in advertising sales in FY2020 generating \$27.7 million in revenue.⁸⁷
Explore nontraditional revenue streams to optimize value of Metrorail facilities	<ul style="list-style-type: none"> WMATA negotiated the sale of surplus properties near Anacostia Metrorail Station,⁸⁸ Silver Spring, Maryland⁸⁹ and College Park, Maryland⁹⁰ for nearly \$12 million in revenue. WMATA updated its Use Regulations to authorize the sale of food and drink on WMATA property outside of Metrorail stations' paid areas and streamlined its approval process to increase opportunities for commercial uses on WMATA-owned property to generate revenue.⁹¹

Increase Non-Fare Revenues (cont.)	
Strategy	FY2019 Update
Pursue joint development opportunities on underutilized assets	<ul style="list-style-type: none"> • WMATA issued solicitations for joint development projects at Huntington, Deanwood, West Falls Church and Capitol Heights Metrorail stations.⁹² • Operating revenue from joint development projects is expected to increase by 13 percent in FY2020 to generate \$11.1 million.⁹³
Pursue a real estate strategy that generates operating efficiencies	<ul style="list-style-type: none"> • WMATA will ground-lease its existing headquarters and 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.⁹⁴

Control Cost Escalation and Enhance Efficiency of the Workforce and Contracted Services	
Strategy	FY2019 Update
Adequately fund WMATA's Office of the Inspector General	<ul style="list-style-type: none"> • WMATA increased funding for the OIG by 32 percent and added two staff positions within the department for FY2020.⁹⁵ • OIG issued 11 performance audits/evaluations identifying \$19.4 million that could be used more efficiently in FY2019.⁹⁶
Improve productivity through strengthened management of employee absenteeism and overtime	<ul style="list-style-type: none"> • The Chief Operating Officer's Office will assist operational departments in meeting manpower requirements through oversight of absenteeism policy and provide long-term absence management support.⁹⁷
Improve management of use of worker's compensation	<ul style="list-style-type: none"> • Ongoing.
Continue to enhance workforce productivity through human resource policies	<ul style="list-style-type: none"> • Ongoing.
Incentivize the workforce and contractors to deliver innovative solutions	<ul style="list-style-type: none"> • WMATA awarded a contract for the maintenance and operation of buses at the Cinder Bed Road bus facility in Lorton, VA. WMATA estimates the contract will potentially save the agency nearly \$15 million over a five-year period.⁹⁸ • In 2019, WMATA released an RFP to operate the Silver Line extension.⁹⁹
Provide greater authority to the WMATA General Manager and Board of Directors to make operational decisions that improve the system's cost effectiveness, without jeopardizing safety	<ul style="list-style-type: none"> • The WMATA Board delegated authority to the GM/CEO to determine when a regional event requires peak-period levels of service for Metrorail and to implement peak-period fares on Metrorail during those times.¹⁰⁰
Include the three percent cap on annual operating subsidies as a mandatory factor in establishing labor costs through collective bargaining of subsequent arbitration	<ul style="list-style-type: none"> • Ongoing.

Control Cost Escalation and Enhance Efficiency of the Workforce and Contracted Services (cont.)	
Strategy	FY2019 Update
Amend the federal Wolf Act to require arbitrators in WMATA contract mediations to consider these fiscal restrictions in all cases	<ul style="list-style-type: none"> WMATA included reforming the Wolf Act in its strategic plan.¹⁰¹
Identify and evaluate options to address unfunded OPEB liabilities	<ul style="list-style-type: none"> The WMATA Board reviewed options to reduce healthcare program costs future pension and future pension program costs in FY2019. The proposed options identified ways to potentially save one percent of payroll costs for new hires and reduce WMATA’s subsidy for retiree healthcare costs by 15 percent or more. However, additional work with other stakeholders is needed to implement and achieve a solution to WMATA’s retiree pension and health benefits challenges.¹⁰²

Additional Strategies	
Strategy	FY2019 Update
Implement efforts on bus and rail to decrease fare evasion	<ul style="list-style-type: none"> WMATA continues to secure emergency fare gates at Metrorail stations to decrease fare evasion.¹⁰³
Develop the next generation of fare collection technology	<ul style="list-style-type: none"> In FY2020, WMATA will begin developing technical requirements for the fare gates and continue power and communications infrastructure upgrades in preparation to overhaul the fare gate system.¹⁰⁴

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⁶ WMATA. “FY2019 Metro Performance Report.” Pg. 12. September 2019. <wmata.com/about/records/scorecard/upload/Q4FY19-Metro-Performance-Report.pdf>

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- ¹⁴ 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>
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- ¹⁶ 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.
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- ²⁰ 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>
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- ⁴⁹ Ibid.
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- ⁶⁴ WMATA. "Keeping Metro Safe, Reliable and Affordable." Pg. 15. January 2019. <www.wmata.com/initiatives/strategic-plans/upload/KMSRA-Strategic-Plan-Jan-2019.pdf>

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¹⁰⁴ WMATA. "FY2020 Approved Budget." Pg.92. July 1, 2019. <www.wmata.com/about/records/public_docs/upload/FY2020-Budget-Book-061219-FINAL-from-WEB-updated-20190828.pdf>

2. Use of Dedicated Capital Funds

The Code of Virginia, pursuant to Chapter 854 of the 2018 Virginia Acts of Assembly, authorizes the Washington Metropolitan Area Transit Authority Capital Fund (WMATA Capital Fund) to provide Virginia's portion of WMATA's \$500 million in regional dedicated capital funding. The State of Maryland and the District of Columbia provide 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 and requires NVTC to include in this report the uses of funds from the WMATA Capital Fund from the prior fiscal year. The Commonwealth authorized the use of \$121.3 million in revenues to be disbursed to WMATA in FY2019 from the WMATA Capital Fund.¹⁰⁵ Table 2 shows the actual expenditures of the Fund for FY2019 by Capital Improvement Plan (CIP) Program. WMATA provides additional information on progress made in the overall capital program during FY2019 in the Quarter 4 FY2019 Financial Report.¹⁰⁶

The passage of 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 utilizes a number of sources to fund its capital program including federal funding, regional dedicated funding, state and local contributions and other sources. In FY2019, WMATA invested a record \$1.525 billion in the capital budget.¹⁰⁷ This is more than double the \$714 million capital investment made four years prior in FY2015 and represents an aggressive delivery of capital projects to improve the safety and reliability of transit system.¹⁰⁸ The following expenditures and descriptions of work accomplished by capital investment category and program area are provided in WMATA's FY2019 Financial Report.¹⁰⁹ This report is provided to the WMATA Board and the public and provides preliminary expenditures for FY2019.

In the **stations and passenger facilities investments category**, WMATA invested \$397.8 million in FY2019. This work included the replacement of 22 escalators, rehabilitation of 13 elevators, and the installation of trackbed lighting at 27 locations. WMATA also started one of the largest capital projects in recent WMATA history, the [Platform Improvement Project \(PIP\)](#). The PIP is a three-year project to repair and reconstruct platforms at 20 outdoor Metrorail stations. The first phase of the PIP rehabilitated six outdoor station platforms at Braddock Road, King St-Old Town, Eisenhower Avenue, Huntington, Van Dorn Street, and Franconia-Springfield Metrorail stations and required a shutdown of rail service on the Blue and Yellow Lines south of Ronald Reagan

Washington National Airport from May 25 to September 8, 2019. With 24-hour access to the work sites, the PIP also included additional work across a number of investment categories beyond simply reconstructing the station platforms. This additional work in FY2019 and FY2020 included but is not limited to elevator and escalator improvements, installation of customer focused amenities such as slip-resistant tiles, new LED lighting, and larger digital displays, bus loop and kiss & ride improvements, replacement of tracks and train crossovers, commencement of work on a new station entrance at Huntington Station, repairs at the Alexandria Rail Yard, and repairs to a rail bridge near the Van Dorn Station.

In FY2019, **railcar investments** totaled \$378 million. As of the end of the fourth quarter, 680 of the planned 748, 7000-series railcars were conditionally accepted by WMATA. One hundred thirty-two of these railcars were conditionally accepted by WMATA in FY2019. The 7000-series railcars represent over 55 percent of WMATA's rail fleet and have driven year over year improvements in WMATA's rail fleet reliability. WMATA also conducted ongoing repairs at rail yard facilities in Alexandria, Brentwood, and New Carrollton, continued ongoing preventive maintenance of the rail fleet, and completed 104 scheduled railcar rehabilitations to 3000-series railcars.

Rail systems investments totaled \$177.2 million in FY2019. These included progress on capacity upgrades to the traction-power system on the Orange and Blue Lines to improve reliability and support WMATA's long-term goal of running all eight car trains. WMATA also utilized the shutdown of the Blue and Yellow Lines for the PIP to begin construction on three traction power substations on the Yellow Line south of Ronald Reagan Washington National Airport. WMATA also received its first order of high tier radios capable of communicating with new and legacy networks and completed the installation of bi-directional amplifiers on the rail segment between Pentagon and King St-Old Town stations.

In FY2019, WMATA expended \$164 million in **Track and Structures Investments**. WMATA replaced crossties, insulators, and third rail and renewed direction fixation fasteners, tamped track, and eliminated open rail joints. WMATA also rehabilitated structural components, deck joints, and grout pads that support the track structure, replaced illegible roadway track signs, repaired leaks, rehabilitated drains, and cleaned tracks.

WMATA expended \$197.4 million on **Bus and Paratransit Investments** in FY2019. This included the delivery of 112 new buses and 250 paratransit vans. WMATA also completed bus rehabilitations, replaced energy storage systems, rebuilt transmission assemblies, and installed

operator shields to protect bus operators. WMATA also completed construction on the new Andrews Federal Center bus facility, which opened in June 2019.

Business Support Investments totaled \$210.4 million in FY2019. As part of its office consolidation strategy, WMATA purchased a building at L'Enfant Plaza to replace its current headquarters and began design activities for an additional office location in Virginia. WMATA also invested in data centers and data infrastructure, network and communications, customer electronic communications and outreach, and 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.

Virginia's dedicated capital funding, in addition to other capital funding provided by the Commonwealth, the cities of Fairfax, Falls Church, and Alexandria and the counties of Arlington and Fairfax, is a vital source of funds for WMATA's capital budget. The FY2019 Capital Budget demonstrates WMATA's focus on safety and state of good repair.

The following table shows the actual expenditures of Virginia's WMATA Capital Fund for FY2019 by Capital Improvement Plan (CIP) Program. WMATA provides additional information in the FY2019 Financial Report.

Table 2: FY2019 Expenditures from the Virginia WMATA Capital Fund by CIP Program

CIP Category	CIP Program	FY2019 Actual Expenditures (millions) ¹¹⁰ <i>(Totals may not add due to rounding)</i>
Railcar Investments	Railcar Acquisition	\$5.2
	Railcar Maintenance/Overhaul	\$5.9
	Railcar Maintenance facilities	\$3.9
	Total	\$14.9
Rail Systems Investments	Propulsion	\$7.7
	Signals & Communication	\$2.2
	Total	\$9.9
Track and Structures Rehabilitation Improvements	Fixed Rail	\$0.6
	Structures	\$0.2
	Total	\$0.8
Stations and Passenger Facilities Investments	Platforms & Structures	\$21.4
	Vertical Transportation	\$0.2
	Station Systems	\$33.0
	Total	\$54.5
Bus and Paratransit Investments	Bus and Paratransit Acquisition	\$0.0
	Bus Maintenance/Overhaul	\$0.0
	Bus Maintenance Facilities	\$0.1
	Bus Passenger Facilities/Investments	\$2.5
	Total	\$2.6
Business Support Investments	Information Technology	\$33.9
	Metro Transit Police Department	\$0.1
	Support Equipment/Services	\$4.6
	Total	\$38.6
Total Capital Programs		\$121.3

Source: WMATA¹¹¹

¹⁰⁵ The Department of Rail and Public Transportation sent a letter on June 7, 2018 informing WMATA of the Commonwealth of Virginia’s authorization of the use of funds from the “Washington Metropolitan Area Transit Authority Capital Fund.”

¹⁰⁶ WMATA. “Quarter 4 FY2019 Financial Report.” September 2019. <www.wmata.com/about/records/upload/FY2019-Q4-Management-Report_FINAL.pdf>

¹⁰⁷ WMATA. “Amendments to FY19 and FY20 Budgets.” Pg. 3. June 27, 2019. <www.wmata.com/about/board/meetings/board-pdfs/upload/10A-FIN-FY2019-and-FY2020-Budget-Amendments-FINALIZED.pdf>

¹⁰⁸ WMATA. “Q4 FY2015 Financial Report.” Pg. 18. September 2015 <wmata.com/about/records/public_docs/upload/FA-Report-Q4-2015.pdf>

¹⁰⁹ WMATA. “Quarter 4 FY2019 Financial Report.” September 2019. <www.wmata.com/about/records/upload/FY2019-Q4-Management-Report_FINAL.pdf>

¹¹⁰ Due to the timing of the publication of this report, these expenditures are preliminary and do not represent final audited expenditures.

¹¹¹ Ibid.

3. Safety & Reliability

Passenger and employee safety and security is the highest priority for WMATA. WMATA seeks to provide a safe and secure environment by 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 6.53.¹¹² The newly created Washington Metrorail Safety Commission (WMSC)¹¹³ provides independent safety oversight of WMATA, supporting the WMATA Board of Directors' and General Manager's emphasis on system safety.

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). The counts represented in Table 3 and Table 4 are total counts for both Major and Non-Major events. The National Transit Database (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"¹¹⁴]

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 official NTD definition for each term is provided in the Appendix.

Table 3 summarizes the total Major and Non-Major count of each type of Metrorail safety events for calendar years 2017 and 2018.

Table 3: Metrorail Safety

NTD Category	Safety Event	Frequency, CY2017	Frequency, CY2018
Events	Collision	2	4
	Derailment	5	5
	Security Event	45	52
	Fire	101	63
Fatalities	Fatality ¹¹⁵	2	6
Injuries	Injury	323	350

Source: WMATA NTD Report, Form S&S-40 and S&S-50¹¹⁶

Table 4 summarizes the total Major and Non-Major count of each Metrobus safety events for calendar years 2017 and 2018.

Table 4: Metrobus Safety

NTD Categorization	Safety Event	Frequency, CY2017	Frequency, CY2018
Events	Collision	165	176
	Derailment	N/A	N/A
	Security Event	38	51
	Fire	8	1
Fatalities	Fatality	0	0
Injuries	Injury	505	538

Source: WMATA NTD Report, Form S&S-40 and S&S-50¹¹⁷

Additional Note:

1. The fatality and injury counts presented are the totals of subcategories (passenger, employee, and others) for each respective category.

3.2. Reliability

There is no national standard for reporting transit 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 equipment 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.
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. Similar to MDBD (see above), the higher the MDBF, the more reliable the bus system.

A highly reliable transit system has high on-time performance, a high MDBD, and a high MDBF. Each of these reliability measures is presented below.

3.3. On-Time Performance

On-time performance is reported for fiscal years 2017, 2018 and 2019. On-time performance is measured differently for Metrorail and Metrobus.

For FY2017 and FY2018, Metrobus on-time performance data was schedule based and reported on the number of bus vehicles arriving at a stop at or close to the scheduled arrival time, divided by the total number of vehicles arriving at stop, over a period (in this case, one year). In July 2018, 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). Since the pilot began, data quality errors were identified that impacted monitoring and reporting. As a result of these errors, Metrobus OTP for FY2019 is unavailable.

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 B for the standard WMATA definition.

Table 5 summarizes Metrorail and Metrobus on-time performance in FY2017, FY2018 and FY2019.

Table 5: On-Time Performance by Mode

Transit Mode	Calculation	On-Time Performance, FY2017	On-Time Performance, FY2018	On-Time Performance, FY2019
Metrorail	$\frac{\text{Number of Journeys completed on time}}{\text{Total number of journeys}}$	70% ¹¹⁸	87%	88%
Metrobus	$\frac{\text{Number of vehicles arriving at a stop at or close to the scheduled arrival time}}{\text{Total number of vehicles arriving at stops}}$	76%	78%	N/A ¹¹⁹

Source: Metro Performance Report FY2019

Additional Notes:

1. Metrorail:

- a. In 2016, a new Key Performance Indicator (KPI) metric was piloted by WMATA to more accurately measure the rail customer travel experience.¹²⁰ This metric measures the percentage of customers who complete their journey within the maximum amount of time it should take per WMATA service standards. Customer on-time performance allows WMATA to capture all aspects of the customer’s journey every day of the week:
 - i. Actual journey time is calculated from the time a customer taps a SmarTrip card to enter the system until the time the SmarTrip card is tapped to exit, which accounts for wait times, riding the train and getting around the station.
 - ii. These standards vary by line, time of day, and day of the week.
 - iii. This metric includes the weekends.

- b. Factors that can affect customer on-time performance include:
 - i. Railcar availability, fare gate availability, elevator and escalator availability, infrastructure conditions, speed restrictions, single-tracking around scheduled trackwork, railcar delays (e.g. door issues), or delays caused by sick passengers.
2. Metrobus
- a. Metrobus on-time performance ***excludes***:
 - i. Trips that have not been delivered (missed trips).¹²¹
 - ii. Buses that have deviated from the scheduled route pattern for a detour.
 - b. In July 2018, WMATA began piloting a new calculation for Metrobus on-time performance. The new calculation introduces a headway-based measure for routes 70, 79, X2, 90, 92, 16Y, and Metroway. The calculation also modifies the schedule-based on-time performance to include all timepoints (previously excluded all last timepoints).
 - c. Data quality errors were identified that impact monitoring and reporting, which comprised performance results. As such, Metrobus OTP for FY2019 is unavailable. These errors were driven by errors in timepoints and older, defective software that were installed on the on-board equipment of approximately 10 percent of the Metrobus fleet. These errors resulted in incorrect reporting of departure and arrival times, thus compromising the performance results. Together, with WMATA's external intelligent transportation system (ITS) partners, work to fix the software is complete. Metrobus OTP reporting will resume in the first quarter FY2020 Metro Performance Report.

3.4. Mean Distance between Delays/Failures

Mean distance between delays (MDBD) indicates the average number of miles traveled between failures that delay rail or bus service. Higher MDBD indicates greater reliability of Metro 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.

Table 6 summarizes the Metrorail and Metrobus reliability figures for FY2017, FY2018 and FY2019. 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.

Table 6: Equipment Reliability for Metrorail and Metrobus

Transit Mode	Reliability Metric Used	Value of Reliability Metric, FY2017	Value of Reliability Metric, FY2018	Value of Reliability Metric, FY2019	Units
Metrorail	Mean Distance between Delays (MDBD)	79,656	92,657	160,985	miles
Metrobus	Mean Distance between Failures (MDBF)	8,283	6,925	6,335	miles

Source: Metro Performance Report FY2019

Additional Notes:

1. Metrorail: Mean distance between delays measures the effectiveness of WMATA’s railcar maintenance and engineering program. Factors that influence railcar reliability are the age and design of the railcars, the distance the railcars have traveled, the frequency and quality of preventive maintenance, and the interaction between railcars and the track.¹²²
2. Metrobus: 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 bus fleet reliability include vehicle age, quality of maintenance program, original vehicle quality, and road conditions affected by inclement weather and road construction.

¹¹² 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>>

¹¹³ Virginia Compacts § 33.2-3101. Washington Metrorail Safety Commission Interstate Compact.

¹¹⁴ Federal Transit Administration. “National Transit Database (NTD) Glossary.” August 15, 2019. <www.transit.dot.gov/ntd/national-transit-database-ntd-glossary>

¹¹⁵ According to NTD: Fatalities in CY2017 include two suicides. Fatalities in CY2018 include three suicides and three fatalities of revenue facility occupants killed/injured. Revenue facility occupants include individuals waiting for or leaving transit. <<https://www.transit.dot.gov/ntd/data-product/safety-security-time-series-data>>

¹¹⁶ 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.

¹¹⁷ Ibid.

¹¹⁸ The 2018 Report on the Performance and Condition of WMATA provides Metrorail on-time performance by train headway adherence. In the 2019 Report on the Performance and Condition of WMATA, train headway adherence was replaced with customer on-time performance, as Metrorail customer on-time performance provides a better sense of what the customer experiences in their trip. WMATA still continues to measure and report on train headway adherence in its Metro Performance Report.

¹¹⁹ Data quality errors were identified that impact monitoring and reporting, which compromised performance results. As such, Metrobus OTP for FY2019 is unavailable.

¹²⁰ Metro Vital Signs Report “KPI for Travel Time Reliability.” Pg.1. January 14, 2016. <www.wmata.com/about/board/meetings/board-pdfs/upload/011416_3ARailTravelTime.pdf>

¹²¹ A missed trip is a scheduled trip that did not operate for a variety of reasons, including operator absence, vehicle failure, dispatch error, traffic, accident, or other unforeseen reason. American Public Transit Association (APTA). “Glossary of Transit Terminology.” 1994. <www4.uwm.edu/cuts/utp/glossary.pdf>

¹²² WMATA. “Metro Performance Report.” Fiscal Year 2019. <<https://www.wmata.com/about/records/scorecard/upload/Q4FY19-Metro-Performance-Report.pdf>>

4. Metrorail Financial Performance

Transit agencies, as a public service, aim to minimize cost and deliver service as efficiently as possible. The following 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:

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

The significance and meaning of these measures are summarized in each subsection below. NTD FY2018 data is reported for each measure.

4.1. Metrorail 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) 2019 Public Transportation Fact Book,¹²³ 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. 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 Table 7, Metrorail farebox recovery was 51.4 percent in FY2018.

Table 7: Metrorail Farebox Recovery

Financial Performance Metric	Calculation	Performance, FY2017	Performance, FY2018	Units
Farebox Recovery	$\frac{\text{Fare Revenue}}{\text{Operating Expenses}}$	52.6%	51.4%	Revenue to Expense Ratio

Source: WMATA NTD, Form F-10 & F-30¹²⁴

Additional Notes:

1. 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.

4.2. Metrorail Service per Rider

Service per rider indicates the number of railcar service hours offered per 10,000 passenger trips. This figure 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 Table 8, Metrorail service per rider was 154.32 hours per 10,000 trips in FY2018.

Table 8: Metrorail Service per Rider

Financial Performance Metric	Calculation	Performance, FY2017	Performance, FY2018	Units
Metrorail Service per Rider	$\frac{\text{Vehicle Revenue Hours}}{\text{Trips}} * 10,000$	141.32	154.32	Hours per 10,000 Trips

Source: WMATA NTD, Form S-10¹²⁵

Additional Notes:

1. Vehicle revenue hours are the duration that a vehicle travels for revenue generation.
2. 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.

4.3. Cost per Metrorail Service Hour

The cost per Metrorail service hour is the average cost¹²⁶ 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.¹²⁷

Per Table 9, the cost per Metrorail service hour was \$295.22 in FY2018.

Table 9: Cost per Metrorail Service Hour

Financial Performance Metric	Calculation	Performance, FY2017	Performance, FY2018	Units
Cost per Metrorail Service Hour	$\frac{\text{Operating Expenses}}{\text{Vehicle Revenue Hours}}$	\$309.37	\$295.22	\$Expenses per Hour

Source: WMATA NTD, Form S-10 & F-30¹²⁸

Additional Notes:

1. Vehicle revenue hours are the duration that the vehicle travels.

5. Metrobus Financial Performance

Transit agencies, as a public service, aim to minimize cost and deliver service as efficiently as possible. The following Metrobus 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:

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

The significance and meaning of these measures are summarized in each subsection below. NTD FY2018 data is reported for each measure.

5.1. Metrobus Farebox Recovery

Farebox recovery indicates how much of Metrobus operating costs are recovered through passenger fare revenues. This is an important financial measure 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.

Per Table 10, for FY2018, Metrobus farebox recovery was 18.2 percent.

Table 10: Metrobus Farebox Recovery

Financial Performance Metric	Calculation	Performance, FY2017	Performance, FY2018	Units
Farebox Recovery	Fare Revenue	20.4%	18.2%	Revenue to Expense Ratio
	Operating Expenses			

Source: WMATA NTD, Form F-10 & F-30¹²⁹

Additional Notes:

1. 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.

5.2. Metrobus Service per Rider

Service per rider indicates the number of bus service hours offered per 10,000 passenger trips, summarizing how efficiently an agency is transporting passengers. A low service per rider number indicates that relatively few hours of service are required to serve 10,000 passengers.

Per Table 11, Metrobus service per rider was 314.77 hours per 10,000 trips in FY2018.

Table 11: Metrobus Service per Rider

Financial Performance Metric	Calculation	Performance, FY2017	Performance, FY2018	Units
Metrobus Service per Rider	$\frac{\text{Vehicle Revenue Hours}}{\text{Trips}} * 10,000$	320.73	314.77	Hours per 10,000 Trips

Source: WMATA NTD, Form S-10¹³⁰

Additional Notes:

1. Vehicle revenue hours are the duration that a vehicle travels for revenue generation.
2. 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.

5.3. Cost per Metrobus Service Hour

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 Table 12, the cost per Metrobus service hour was \$179.88 in FY2018.

Table 12: Cost per Metrobus Service Hour

Financial Performance Metric	Calculation	Performance, FY2017	Performance, FY2018	Units
Cost per Metrobus Service Hour	$\frac{\text{Operating Expenses}}{\text{Vehicle Revenue Hours}}$	\$159.82	\$179.88	\$Expenses per Hour

Source: WMATA NTD, Form S-10 & F-30¹³¹

Additional Notes:

1. Vehicle revenue hours are the duration that a vehicle travels for revenue generation.

¹²³ American Public Transportation Association (APTA). “2019 Public Transportation Fact Book. 70th Edition” p. 22. April 2019. <https://www.apta.com/wp-content/uploads/APTA_Fact-Book-2019_FINAL.pdf>

¹²⁴ Form F-10 is the NTD Sources of Funds — Funds Expended and Funds Earned form, Form S-30 is the NTD Operating Expenses form. <<https://www.transit.dot.gov/ntd/ntd-reporting-system-forms>>

¹²⁵ Form S-10 is the NTD Service form. <<https://www.transit.dot.gov/ntd/ntd-reporting-system-forms>>

¹²⁶ The cost per Metrorail service hour factors in a fully loaded operating and maintenance cost. See the definition of “Operating Expenses.”

¹²⁷ American Public Transportation Association (APTA). “2019 Public Transportation Fact Book. 70th Edition” p. 26. April 2019. <https://www.apta.com/wp-content/uploads/APTA_Fact-Book-2019_FINAL.pdf>

¹²⁸ Form S-10 is the NTD Service form, F-30 is the NTD Operating Expenses form. <<https://www.transit.dot.gov/ntd/ntd-reporting-system-forms>>

¹²⁹ Form F-10 is the NTD Sources of Funds — Funds Expended and Funds Earned form; Form S-30 is the NTD Operating Expenses form. <<https://www.transit.dot.gov/ntd/ntd-reporting-system-forms>>

¹³⁰ Form S-10 is the NTD Service form. <<https://www.transit.dot.gov/ntd/ntd-reporting-system-forms>>

¹³¹ F-30 is the NTD Operating Expenses form. <<https://www.transit.dot.gov/ntd/ntd-reporting-system-forms>>

6. Metrorail & 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 6.1 and 6.2. Data is reported for FY2018.

6.1. Unlinked Passenger Trips

Unlinked passenger trips (UPT) indicates the number of passengers boarding vehicles. UPT demonstrates the overall number of passengers passing through the overall Metro system. A higher UPT reflects greater use of transit services. This section provides FY2018 UPT data for Metrorail and Metrobus.

6.1.1. Metrorail Unlinked Passenger Trips

In FY2018, total ridership for Metrorail was 229,233,254 unlinked passenger trips, as shown in Table 13. The official NTD definition for this ridership metric is included in the Appendix.

Table 13: Metrorail Ridership, UPT

Ridership Metric	Total Trips, FY2017	Total Trips, FY2018	Units
Unlinked Passenger Trips	227,053,037	229,233,254	Trips ¹³²

Source: WMATA NTD, Form S-10¹³³

Additional Notes:

1. 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.
2. Metrorail directly records and publishes linked passenger trips, which are adjusted to UPT using a statistical method based on a passenger survey.¹³⁴ 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 FY2018 will not match those in the Metro Performance Report (MPR).

6.1.2. Metrobus Unlinked Passenger Trips

In FY2018, total ridership for Metrobus was 119,681,096 unlinked passenger trips, as shown in Table 14.

Table 14: Metrobus Ridership, UPT

Ridership Metric	Total Trips, FY2017	Total Trips, FY2018	Units
Unlinked Passenger Trips	123,124,352	119,681,096	Trips ¹³⁵

Source: NTD, Form S-10¹³⁶

Additional Notes:

1. The NTD reports unlinked passenger trips (UPT), which is the number of passenger boardings. Metrobus directly records bus passenger boardings.

6.2. 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.

6.2.1. Metrorail Passenger Miles Traveled

In FY2018, the total passenger miles traveled for Metrorail was 1,314,002,629, as shown in Table 15.

Table 15: Metrorail Ridership, PMT

Ridership Metric	Total Miles, FY2017	Total Miles, FY2018	Units
Passenger Miles Traveled	1,326,262,650	1,314,002,629	Miles

Source: WMATA NTD, Form S-10¹³⁷

6.2.2. Metrobus Passenger Miles Traveled

In FY2018, the total passenger miles traveled for Metrobus was 366,498,831, as shown in Table 16.

Table 16: Metrobus Ridership, PMT

Ridership Metric	Total Miles, FY2017	Total Miles, FY2018	Units
Passenger Miles Traveled	369,020,804	366,498,831	Miles

Source: WMATA NTD, Form S-10¹³⁸

¹³² Reference 'Unlinked Passenger Trips' in 8.1 Definitions.

¹³³ Form S-10 is the NTD Service form. <<https://www.transit.dot.gov/ntd/ntd-reporting-system-forms>>

¹³⁴ National Transit Database. "National Transit Database Sampling Manual." March 31, 2009.
<www.transit.dot.gov/sites/fta.dot.gov/files/docs/The_NTD_Sampling_Manual.pdf>

¹³⁵ Reference 'Unlinked Passenger Trips' in 8.1 Definitions.

¹³⁶ Form S-10 is the NTD Service form. <<https://www.transit.dot.gov/ntd/ntd-reporting-system-forms>>

¹³⁷ Ibid.

¹³⁸ Ibid.

7. Conclusion

This report summarizes safety, operating, financial and ridership information on the state of WMATA's rail and bus systems, responding to the mandate of Section § 33.2-1526 of the Code of Virginia, pursuant to Chapter 854 of the 2018 Virginia Acts of Assembly. In addition, this report summarizes cost control and operational improvement strategies proposed by NVTC to improve the efficiency of WMATA's rail and bus systems. The report also provides the expenditures of the WMATA Capital Fund for FY2019. In all instances, the data provided reflects information available as of October 2019. NVTC will continue to focus on these issues through its analysis and deliberations. As this report is an annual requirement, the next NVTC *Report on the Performance and Condition of WMATA* will be provided to the Governor and the General Assembly in the fall of 2020.

8. Appendix: Definitions

This appendix includes definitions and sources for the terminology used throughout the report. 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.¹³⁹
2. For metrics without an NTD definition, a definition is taken from WMATA’s FY2019 Metro Performance Report (MPR).¹⁴⁰ 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 Hour¹⁴¹

The average cost to operate one vehicle/passenger car for one hour of passenger service.

D

Deadhead

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

1. Leaving or returning to the garage or yard facility
2. Changing routes
3. When there is no expectation of carrying revenue passengers

Deadhead does not include:

1. Charter service

2. School bus service
3. Operator training
4. Maintenance training

Derailments

A non-collision incident in which one or more wheels of a transit vehicle unintentionally leaves the rails.

F

Farebox Recovery Ratio¹⁴²

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 directly earned from carrying passengers, paid either in cash or through pre-paid tickets, passes, etc. It includes donations from those passengers who donate money on the vehicle, reduced fares paid by passengers in a user-side subsidy arrangement, or payments made through an agreement to provide fare-free service for a certain group, e.g. payments from a university to provide free service to students. It also includes base fare, zone or distance premiums, express service premiums, extra cost transfers, and special transit fares.

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.

Failure, Metrobus¹⁴³

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, Metrorail¹⁴⁴

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.

Fringe Benefits

The payments or accruals to others (insurance companies, governments, etc.) on behalf of an employee and payments and accruals directly 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. It does not include other post-employment benefits (OPEB) recorded under GASB-45.

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 Trips¹⁴⁵

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)¹⁴⁶

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)¹⁴⁷

The Major Event Report (S&S-40) captures detailed information on severe S&S 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.

- 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 Delays¹⁴⁸

The average number of miles traveled before a railcar experiences a failure that leads to a delay of four or more minutes.¹⁴⁹ 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 Failures¹⁵⁰

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.*¹⁵¹

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-Labor Costs

The costs associated with operating expenses less labor cost,¹⁵² including:

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

Non-Major Monthly Summary Report (S&S-50)¹⁵³

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. On the Non-Major Monthly Summary Report, agencies report only the number of occurrences or safety incidents per month and the number of persons immediately transported away from the scene for medical attention due to those occurrences.

O

On-Time Performance (Metrobus), “adherence to schedule”¹⁵⁴

On-time performance is calculated through: *Number of time points¹⁵⁵ that arrived on time by route based on a window of two (2) minutes early and seven (7) minutes late ÷ Total number of time points delivered (by route).*

This indicator summarizes how closely Metrobus adheres to published route schedules on a system-wide basis. Factors that influence on-time performance are traffic congestion, inclement weather, scheduling, vehicle reliability, and operational behavior.

On-Time Performance (Metrorail)¹⁵⁶

Customer on-time performance is the percentage of customer journeys completed on time. The calculation uses *Number of journeys completed on-time ÷ Total number of journeys*.

Metrorail customer on-time performance (OTP) communicates the reliability of rail service, which is a key driver of customer satisfaction. Metrorail OTP 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 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 until the time the SmarTrip card is tapped to exit. 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. door issues), or delays caused by sick passengers.

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.¹⁵⁷

P

Passenger Miles Traveled (PMT)¹⁵⁸

The cumulative sum of the distances ridden by each passenger.

R

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. Deadhead¹⁵⁹
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 Rider¹⁶⁰

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 Metrobus 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. Metrobus reports unlinked passenger boardings.

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.

¹³⁹ Federal Transit Administration. “National Transit Database (NTD) Glossary.” August 15, 2019. <<https://www.transit.dot.gov/ntd/national-transit-database-ntd-glossary>>

¹⁴⁰ Washington Metropolitan Area Transit Authority. “Metro Performance Report.” Fiscal Year 2019. <www.wmata.com/about/records/scorecard/upload/Q4FY19-Metro-Performance-Report.pdf>

¹⁴¹ Federal Transit Administration. “2015 Metrics.” <<https://www.transit.dot.gov/ntd/data-product/2015-metrics>>

¹⁴² Instead of farebox recovery ratio, the Federal Transit Administration (FTA) uses the term “recovery ratio” per the FTA 2015 Metrics: <https://www.transit.dot.gov/ntd/data-product/2015-metrics>. The calculation presented is not explicitly included in the FTA definition.

¹⁴³ Provided by WMATA.

¹⁴⁴ Provided by WMATA.

¹⁴⁵ WMATA. “Metro Performance Report.” Fiscal Year 2019. <www.wmata.com/about/records/scorecard/upload/Q4FY19-Metro-Performance-Report.pdf>

¹⁴⁶ The NTD uses ‘labor’ as the metric for labor cost.

¹⁴⁷ Adapted from: National Transit Database, pp. 21-35. “NTD Safety & Security Reporting Manual.” 2018. <<https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/ntd/69096/2018-safety-and-security-policy-manual.pdf>> Washington Metropolitan Area Transit Authority. “Metro Performance Report.” Fiscal Year 2019. <www.wmata.com/about/records/scorecard/upload/Q4FY19-Metro-Performance-Report.pdf>

¹⁴⁹ See “Failure, Metrorail.”

¹⁵⁰ WMATA. “Metro Performance Report.” Fiscal Year 2019. <www.wmata.com/about/records/scorecard/upload/Q4FY19-Metro-Performance-Report.pdf>

¹⁵¹ See “Failure, Metrobus.”

¹⁵² Categories under Operating Expenses are based on NTD Definition. Federal Transit Administration. “National Transit Database: Policy Manual. January 2017. <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/ntd/57981/2017-ntd-policy-manual_2.pdf>

¹⁵³ Adapted from: National Transit Database. “NTD Safety & Security Reporting Manual.” January 2019. <www.transit.dot.gov/sites/fta.dot.gov/files/docs/ntd/130586/2019-ntd-safety-and-security-policy-manual-v2.pdf>

¹⁵⁴ WMATA. “Metro Performance Report.” Fiscal Year 2019. <www.wmata.com/about/records/scorecard/upload/Q4FY19-Metro-Performance-Report.pdf>

¹⁵⁵ See “Time Point.”

¹⁵⁶ WMATA. “Metro Performance Report.” Fiscal Year 2019. Pg. 18. <www.wmata.com/about/records/scorecard/upload/Q4FY19-Metro-Performance-Report.pdf>

¹⁵⁷ National Transit Database. “TS2.1 - Service Data and Operating Expenses Time-Series by Mode” 2016. <<https://www.transit.dot.gov/ntd/data-product/ts21-service-data-and-operating-expenses-time-series-mode-0>>

¹⁵⁸ The NTD refers to Passenger Miles Traveled as “Passenger Miles”

¹⁵⁹ See “Deadhead.”

¹⁶⁰ Department of Rail and Public Transportation. “Review of WMATA Operating, Governance and Financial Conditions.” March 2018. <<http://www.drpt.virginia.gov/media/2320/full-report.pdf>>



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THE VOICE OF TRANSIT IN NORTHERN VIRGINIA

NORTHERN VIRGINIA TRANSPORTATION COMMISSION

2300 Wilson Boulevard, Suite 230
Arlington, VA 22201

tel: (703) 524-3322

fax: (703) 524-1756

www.novatransit.org

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