

**Long-Term Investment in Fixed Rail  
(2023 JCR, p. 82)**

**A Report to the Senate Budget and  
Taxation Committee  
and  
House Appropriations Committee**

**March 2024**  
Maryland Department of Transportation  
Maryland Transit Administration

## **Introduction**

The Maryland Transit Administration (MTA) has prepared this report in response to language contained in the 2023 Joint Chairmen's Report (JCR). The language states:

*It is the intent of the committees that State resources for transit projects yield the best possible return on investment and provide efficient, reliable, and equitable service to Marylanders. Options for modifying routes for fixed transit are limited, but the marginal costs of changing schedules and fares are low. Given the emerging changes in travel patterns accelerated by the COVID-19 pandemic, the State should be engaged in long-term planning to maximize the use of existing fixed-rail transit systems over the coming decades. The Maryland Transit Administration (MTA) is therefore requested to submit a report summarizing analyses of the changing market for fixed rail, including options to maximize return on the State's investment. The report should also include a summary of the economic benefits of fixed rail and how increased ridership and community engagement can further bolster return on investment.*

This report will discuss the economic benefits of fixed rail with a specific focus on local examples, introduce the changing market for rail transit at the national and statewide level, and identify supply-side and demand-side strategies to maximize the State's return on fixed rail investments.

## **Economic Benefits of Public Transit**

Public transit offers significant economic benefits. According to research from the American Public Transportation Association (APTA), every dollar invested in public transportation generates five dollars in long-term economic returns to the region, and every \$1 billion invested in public transportation creates or sustains nearly 50,000 jobs. Public transit is a key factor in business site selection and nearly nine out of ten trips on public transit directly impact the local economy. Efficient and reliable transit reduces traffic congestion, benefiting businesses and customers, and improves economic productivity as well as business attraction and retention. Retail stores or centers, and service providers located near rail stations, often experience higher customer volumes, positively impacting the economic successes of these businesses.

Metro Subway, Light Rail, and MARC Train services provide efficient access to education, employment, shopping, and entertainment throughout the Baltimore region and beyond. These services provide travel time benefits, cost savings, and schedule reliability to customers. For example, a person travelling from Baltimore Penn Station to Union Station in Washington D.C. during peak weekday hours can save 40 to 60 minutes by taking MARC Train compared to driving, also saving funds that would be spent on parking, offering an economically feasible alternative to commuters. When travelling, airport parking can also be a significant expense; fixed rail not only provides efficient and reliable transport to the airport, but also eliminates parking costs which can vary between \$4 and \$22 per day. Additionally, by providing affordable, accessible transportation options, transit allows riders to access jobs and opportunities while

saving personal vehicle costs, as the average annual cost of vehicle ownership in Maryland is \$14,000. Many of the State's largest employers and attractions are located near rail transit stations, including Baltimore Washington International Thurgood Marshall Airport, Johns Hopkins Hospital, the University of Maryland, the University of Maryland Medical System, T. Rowe Price, the National Institute of Health, and Exelon. Access to transit has the ability to expand employment opportunities and drive economic growth.

In addition, MTA rail systems provide access to major regional and cultural events. Some of MTA's highest ridership days are associated with special events, such as Ravens and Orioles games, downtown festivals, and concerts. Robust transit service to these special event venues reduces concentrated parking demand at venues while simultaneously reducing traffic congestion.

Public transit is ten times safer by mile than traveling by car<sup>1</sup> and emits 55 percent fewer greenhouse gas emissions.<sup>2</sup> Higher transit ridership is crucial to meeting Maryland's climate and sustainability goals.

### **The Changing Market for Rail Transit**

The demand for rail transit has historically been a function of various factors, including gas prices, availability and frequency of transit service, parking supply and pricing, and changes in regional demographics. The COVID-19 pandemic significantly disrupted rail ridership, leading to changes in how, when, and where people travel.

#### *National Trends*

Nationally, all public transit modes saw significant decreases in ridership due to the COVID-19 pandemic. Rail modes (i.e., heavy rail, light rail, streetcar, commuter rail, and hybrid rail) had larger decreases in ridership when compared to bus modes. In April 2020, towards the onset of the COVID-19 pandemic, rail ridership decreased to 10 percent of pre-pandemic levels, while bus ridership decreased to 28 percent of pre-pandemic levels. As of September 2023, rail ridership had recovered to 71 percent of pre-pandemic levels nationally, with bus ridership recovering to 78 percent.

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<sup>1</sup> "Public Transportation Facts." American Public Transportation Association, September 28, 2023. <https://www.apta.com/news-publications/public-transportation-facts/>.

<sup>2</sup> McGraw, Jen, Peter Haas, Reid Ewing, and Sadegh Sabouri. An update on public transportation's impacts on greenhouse gas emissions, May 20, 2021. <https://doi.org/10.17226/26103>.

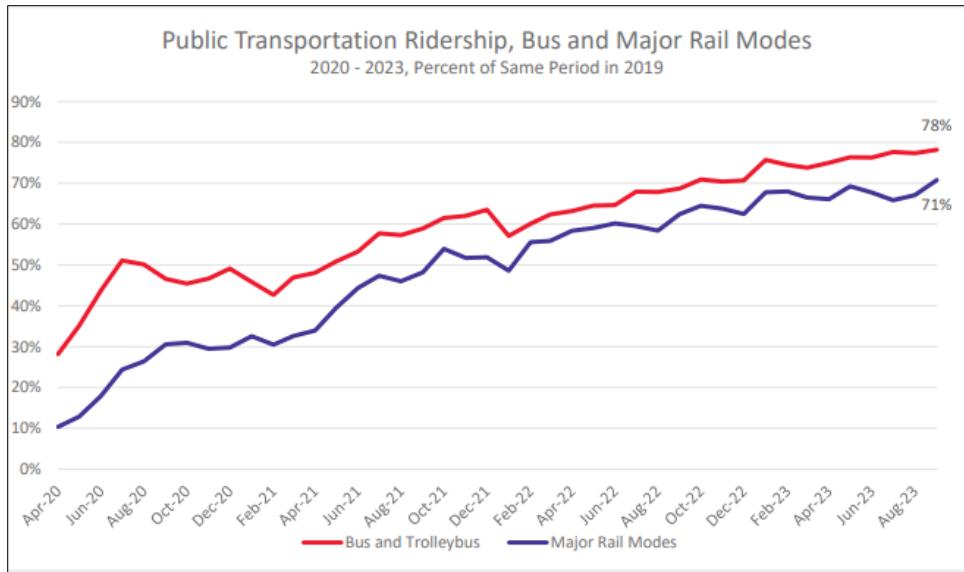


Figure 1. National Public Transportation Ridership, Bus and Major Rail Modes 2020 – 2023, Percent of Same Period in 2019 (Source: APTA Public Transportation Ridership Update, December 2023)

This steady increase in ridership is largely associated with businesses and educational institutions returning to in-person activities, though it also reflects programs introduced by transit agencies to accelerate recovery from the COVID-19 pandemic's ridership loss. These include reduced or free fares, investment in new routes, and service adjustments to better match changing travel markets.

Many transit agencies are observing a less pronounced commute-hours peak, stronger ridership on midweek days relative to Mondays and Fridays, and an increased share of non-work trips. APTA reports that even though current data remains limited, indicators in several metro regions demonstrate residential and commercial area trips are leading to transit recovery, as opposed to commutes to and from office and work centers. The shift toward non-commute travel is strong in the Washington D.C. market, where Washington Metropolitan Area Transit Authority's (WMATA) Metrorail commute ridership is at approximately 43 percent of 2019 levels, while non-commute ridership has recovered to more than 90 percent of 2019 levels.<sup>3</sup> MTA's MARC Train and Commuter Bus services – both heavily dependent on commuting federal workers – have also seen slow recovery of traditional commute trips, as described further below.

<sup>3</sup> Rowlands, D W, and Tracy Hadden Loh. 2023. "Ensuring the intertwined post-pandemic recoveries of downtowns and transit systems." The Brookings Institution. August 8. <https://www.brookings.edu/articles/ensuring-the-intertwined-post-pandemic-recoveries-of-downtowns-and-transit-systems/>.

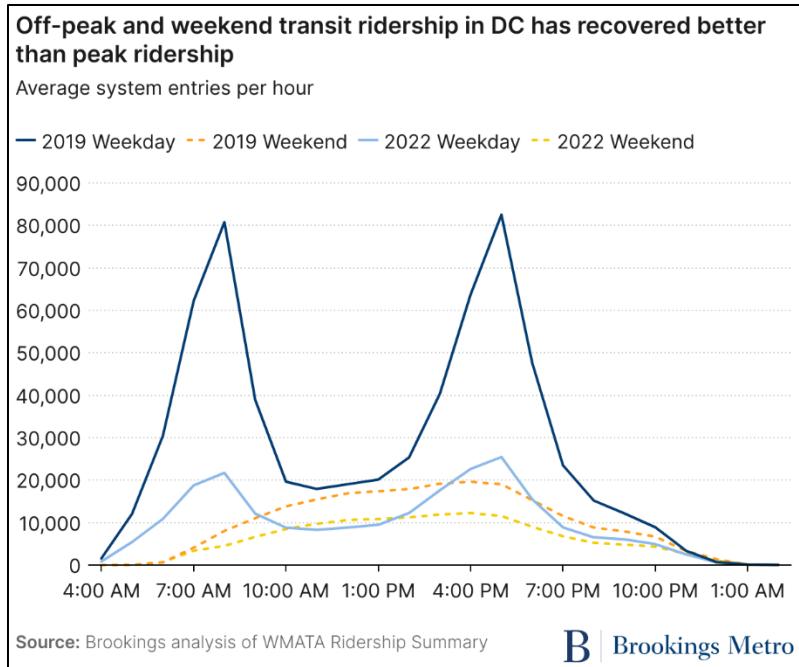


Figure 2. WMATA Ridership Summary from Brookings Institution Analysis

### Local Trends

Consistent with the national pattern, MTA experienced a sharp decline in transit ridership across all modes in 2020. Ridership on Metro Subway, Light Rail and MARC all dropped below 20 percent of pre-pandemic levels at the height of the pandemic. As of November 2023, Metro Subway and Light Rail ridership had recovered to 62 percent and 85 percent respectively, while MARC Train ridership had recovered to just 41 percent of pre-pandemic levels. In November 2023, MTA changed its Metro Subway ridership counting method from digital counts from faregates (turnstile) to full-time manual counting. Prior to implementing this change, MTA undertook several validation studies and found that Metro Subway ridership counts from faregates were significantly lower than the manual sample counts from the studies. Concurrently, MTA adopted an improved methodology for counting Light Rail ridership that utilizes counts from Automatic Passenger Counting devices, which are equipped on MTA's overhauled Light Rail vehicles. This is the same technology used to count ridership on MTA's Local Bus mode. Prior to November 2023, the MTA was using a combination of manual counts and ticket vending machine usage to estimate Light Rail ridership. Light Rail ridership dropped significantly in December 2023 due to a 15-day emergency suspension of service to inspect and repair all Light Rail vehicles.

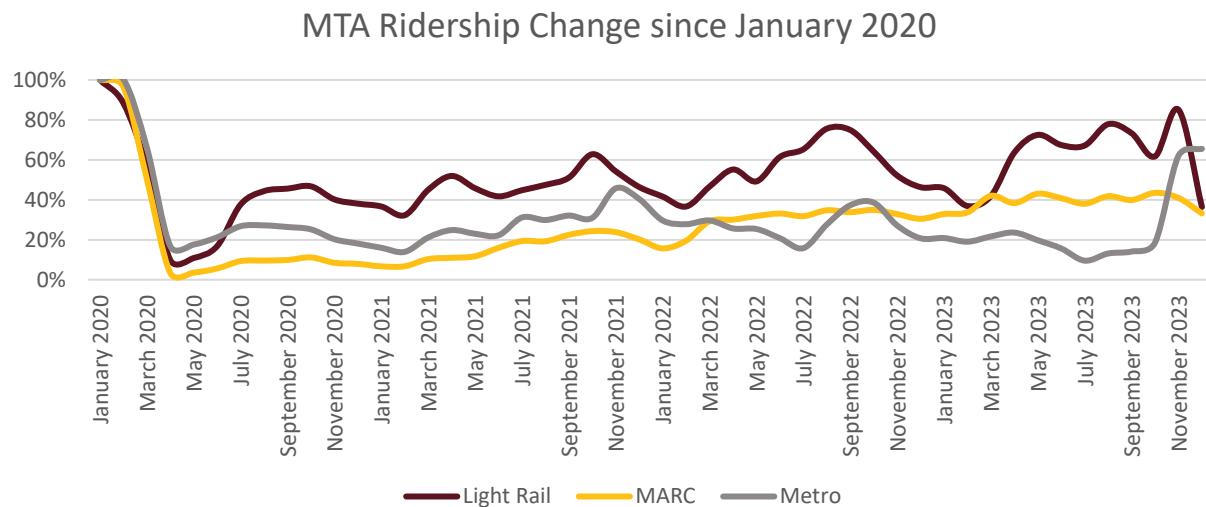


Figure 3. MTA Ridership Change since January 2020

Metro Subway has followed the regional and national trend of higher weekend than weekday ridership recovery, reaching 90 percent of its pre-pandemic weekend ridership but only 54 percent of pre-pandemic weekday ridership in November 2023; Light Rail has not followed that trend, reaching 82 percent recovery on weekdays and 55 percent on weekends. MARC Train ridership has been the slowest to recover, though there continues to be steady ridership growth. MARC Train ridership is heavily impacted by federal jobs in the national capital region transitioning to remote work, resulting in some of the highest remote work rates (25 percent) in the country.<sup>4</sup>

<sup>4</sup> Rowlands, D W. 2023. "Most of Washington region's remote workers are in private sector." Greater Greater Washington. October 5. <https://gghwash.org/view/91201/most-of-washington-regions-remote-workers-work-in-the-private-sector>.

## MARC Weekday and Weekend Ridership Recovery

Percent of FY2019

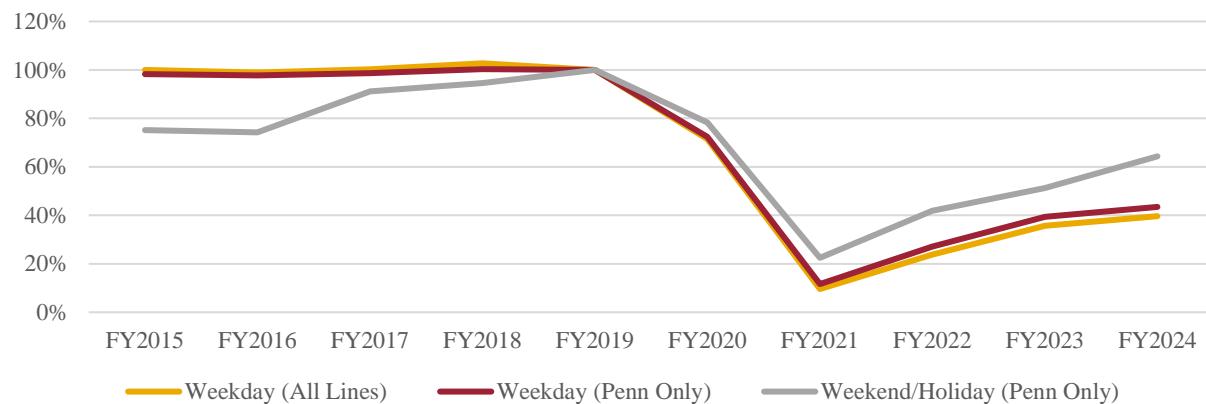


Figure 4. MARC Weekday and Weekend Ridership Recovery

Rail ridership sees significant increases on days with major events in Baltimore or Washington, D.C. For example, Light Rail ridership reached the highest level since pre-pandemic, even far exceeding pre-pandemic average ridership, on November 16, 2023, during a Ravens home game at M&T Bank Stadium; nearly 23,000 riders took advantage of the Light Rail system that day. Similarly on MARC Train, major events in Washington, D.C. have fueled high ridership days, with the highest ridership day since the start of the pandemic; on November 14, 2023, over 20,000 riders travelled on the Penn Line (approximately 80 percent of pre-pandemic).

MARC Train's Penn Line has seen weekend ridership returning at a higher rate than weekday ridership, recovering 51 percent of its FY2019 weekend ridership in FY2023, while weekday service across all MARC Train lines recovered 36 percent of ridership. Similarly, MTA's 201 Commuter Bus route, which runs from Gaithersburg to BWI Thurgood Marshall Airport, and is the only Commuter Bus route offered on weekends, recovered 59 percent of its 2019 ridership in 2023, while all other Commuter Bus routes recovered only 34 percent of ridership in 2023.

### **Maximizing Return on Fixed Rail Investments**

#### *Current Strategies*

##### *Providing Reliable Service*

Reliable service is critical to attracting ridership. MTA maintains high reliability on all rail modes through operational and capital asset management. For example, through focused hiring and retention efforts, MTA significantly reduced the operator vacancy rate in the face of a national transit labor shortage in 2023. An increased number of operators allows for greater reliability across MTA's system.

Maintaining the good condition of infrastructure results in fewer service interruptions and increased reliability, which is critical to attracting and retaining riders. Timely investments in state of good repair (SGR) reduce life cycle cost (and thus increase return on investment) by addressing infrastructure condition before repair or replacement becomes more expensive and disruptive. MTA invests the majority of its capital budget in SGR: a new Metro Subway railcar fleet and train control system is underway, MARC Train locomotives and railcars are currently being overhauled, and MTA just recently was awarded over \$213 million in grant funding from the U.S. Department of Transportation's Federal Transit Administration's Rail Vehicle Replacement program to support efforts to replace all 52 aging Light Rail vehicles. In addition, track, power, communications and facilities rehabilitation and replacement work is ongoing throughout the systems. MTA's 2022 Capital Needs Inventory estimated approximately \$512 million average annual investment is needed to maintain MTA assets in a state of good repair.

#### *Improved Customer Information*

Since the onset of the COVID-19 pandemic, MTA has successfully expanded the availability of real time tracking for transit riders. Riders can now see Light Rail, Metro Subway, and MARC Train real time arrival information on the Transit App and in all stations. Providing real time information allows riders to better plan their trips and is a critical aspect of attracting and maintaining riders.

Additionally, MTA recently established an Office of Customer Experience, a new department designed to improve the rider experience and inform internal decision making. This department directly interacts with riders throughout the system to gather feedback and drive improvements.

### *Introducing Flexible Fare Passes*

MTA introduced the “CharmFlex” fare option in 2021 to accommodate Marylanders returning to onsite work with flexible or hybrid work schedules. This discounted fare option enables riders to purchase 3- and 10-day passes (6 or 20-one-way fares for MARC Train and Commuter Bus for a week are about 15 percent less compared to the cost of a day-pass or single-trip fare). Charmflex passes can be used on consecutive or non-consecutive days and are valid for up to 12 months after the date of purchase.

### *Amplifying Transit Service for Events*

MTA coordinates closely with the Ravens, Orioles, CFG Arena, and Baltimore City agencies during major game days and other events to ensure high quality transit service for these events. Efforts include supplemental service, extra customer service staffing, and pre-event marketing and information on transit options.

### *Transit-Oriented Development (TOD)*

MDOT in concert with agency stakeholders and local jurisdiction partners is actively pursuing TOD opportunities across the State’s rail stations. These efforts include a TOD joint development at the Reisterstown Plaza Metro Subway Station, the creation of a comprehensive TOD Strategy for the MARC Penn Line, the development of a prioritization and investment strategy for rail stations in the Baltimore Region, and the creation of a TOD supporting fund to help local jurisdictions advance TOD opportunities. This fund was established by House Bill 12 known as the “Equitable and Inclusive Transit Oriented Development Act” passed by the general assembly in 2023. .

TOD increases transit ridership by making transit more feasible, accessible, and attractive to users. TOD provides better accessibility to transit through locating land uses including residential, commercial, and retail close to transit stations, while reducing parking dependencies and increasing walkability and bikeability.

TODs can also indirectly increase ridership by attracting more people and businesses to transit accessible areas. The increased accessibility, diverse land uses, convenience, and efficiency for residents and commuters can increase property values and, over time, attract more long-term residential, commercial, and retail interests.

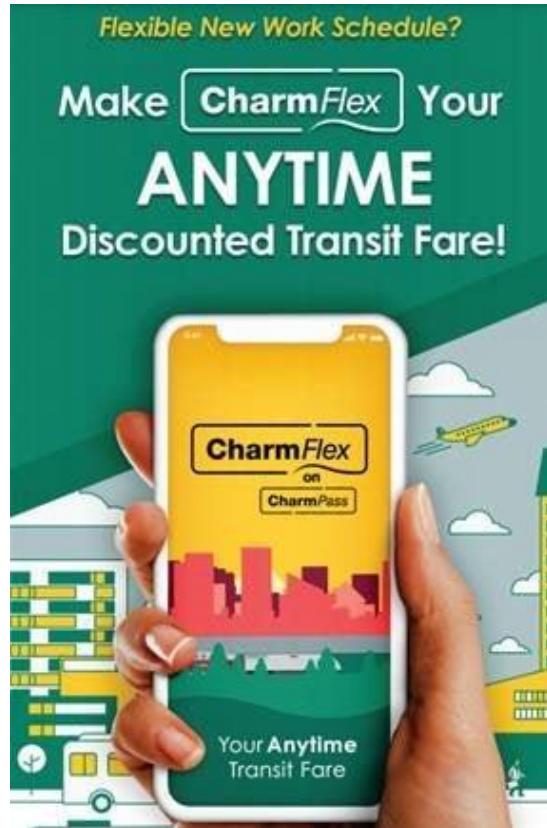


Figure 5. CharmPass Marketing Card

WMATA found that its 55 completed joint development projects systemwide, totaling 17 million square feet across 30 stations, have generated approximately 4.9 million additional Metro trips annually.<sup>5</sup> These additional annual trips not only provide an excellent return on investment, but also boost the local economy.

#### *Transportation Demand Management (TDM) and Commuter programs*

TDM policies and programs aim to optimize transportation resources, reduce congestion, and encourage modal shift and higher transit usage. These strategies can increase ridership and provide a high return on investment for the State. Recent studies in the Atlanta and Washington metro areas have found that exposure to TDM messaging increased respondents' likelihood to try transit. In the Atlanta area, 7 percent of those who were exposed to TDM messaging and 19 percent of those who received any TDM-related service tried or began taking transit.<sup>6</sup> In the Washington area, 17 percent of respondents who remembered seeing TDM messaging stated that it resulted in them considering ridesharing or transit, and 8 percent tried or started commuting by train.<sup>7</sup>

TDM programs, such as fare incentive, public awareness campaigns, employer-based programs, the construction of park-and-ride facilities, and congestion pricing are all examples of programs that can be implemented to promote mode shift and increase transit ridership. Some TDM programs nationally have taken additional steps to incentivize travel by modes other than single occupancy vehicle, such as increasing the price of parking or reducing its availability.

Maryland's TDM program, branded "Commuter Choice Maryland," reduce vehicle trips in the state by about 180,000 per day<sup>8</sup>. Both Statewide programs and local partner programs encourage commuters to consider transit.

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<sup>5</sup> Washington Metropolitan Area Transit Authority. 2022. "10-Year Strategic Plan for Joint Development." April 7. <https://www.wmata.com/business/real-estate/upload/WMATA-10-Year-Strategic-Plan-for-Joint-Development.pdf>.

<sup>6</sup> Atlanta Regional Commission. 2020. "2019 Regional Commuter Survey Technical Report." January. <https://cdn.atlantaregional.org/wp-content/uploads/regionalcommutersurvey-technical-report-020620-final.pdf>.

<sup>7</sup> Metropolitan Washington Council of Governments. 2023. "2022 State of the Commute Survey Report." August 14. <https://www.mwcog.org/documents/2023/08/14/state-of-the-commute-survey-report--carsharing-state-of-the-commute-telework-travel-surveys/>.

<sup>8</sup> Maryland Department of Transportation. 2023. "2023 Annual Attainment Report on Transportation System Performance." April 17. [https://www.mdot.maryland.gov/OPCP/2023\\_Attainment\\_FINAL\\_HR.pdf](https://www.mdot.maryland.gov/OPCP/2023_Attainment_FINAL_HR.pdf).

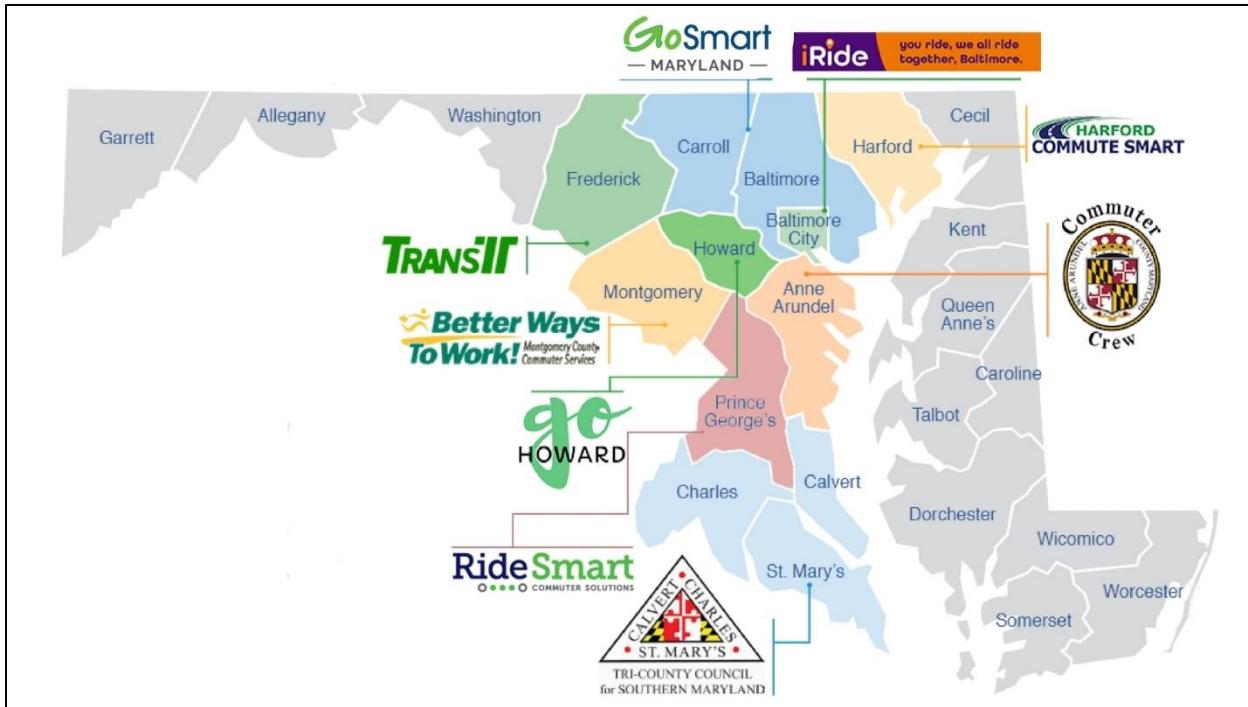


Figure 6. Local TDM Programs in Maryland

Since 2020, TDM efforts Statewide have shifted to facilitating telework – for example, the Commuter Tax Credit was expanded to cover telework in 2022<sup>9</sup> – but as the COVID-19 pandemic recedes, efforts to emphasize transit (which reached a high of over 1,200 participating employers in 2019 before dropping to under 320 in 2022)<sup>10</sup> can reassume prominence within these programs and support systemwide ridership development efforts. The Guaranteed Ride Home (GRH) program provides a safety net for commuters who use alternative transportation modes by offering a guaranteed ride home in case of an emergency that keeps them at work after the last train or bus. A Metropolitan Washington Council of Governments analysis found that over 40 percent of GRH participants shifted to an alternative mode when registering for the program,<sup>11</sup> and that nearly 90 percent of GRH participants in the Baltimore area who switched to an alternative mode stated that the program was a somewhat or very important reason for that switch.<sup>12</sup> The total number of participants in the Baltimore and Washington metropolitan areas is approximately 3,500, far smaller than the population who may choose transit if aware of GRH.

<sup>9</sup> 2022 Laws of Maryland, Ch. 118

<sup>10</sup> Commuter Choice Maryland. 2023. "2022 Annual Report." January 31.

<https://www.mdot.maryland.gov/OPCP/CommuterChoiceAnnualReport2022f.pdf>.

<sup>11</sup> Diggins, Lori, and Nicholas Ramfos. 2022. "Baltimore and St. Mary's County Regional Guaranteed Ride Home Program: 2022 Applicant Survey Technical Report ." Commuter Connections. September 20.

<https://www.commuterconnections.org/wp-content/uploads/2022-GRH-Baltimore-Region-FINAL-Report-092022-FOR-Publication.pdf>.

<sup>12</sup> Ramfos, Nicholas, and Lori Diggins. 2023. "Transportation Demand Management (TDM) Analysis Report FY 2021 – FY 2023 Covering the period July 2020 – June 2023." Commuter Connections. November 21.

<https://www.commuterconnections.org/wp-content/uploads/2021-2023-TDM-Analysis-Evaluation-Report-Final-Draft-112123.pdf>.

This program thus has ample room to grow, and, with a modest investment of State resources, provides potential transit riders with the necessary reassurance to select transit on a regular basis.

Similarly, MTA's College Pass program offers subsidized monthly transit passes to full- or part-time students enrolled in Greater Baltimore Metropolitan Area colleges or universities. This program alone has resulted in almost 10,000 daily reductions in vehicle miles traveled and almost 1,300 daily reductions in vehicle trips; more college and university students in the region may choose transit if aware of this program.<sup>13</sup>

Commuter Choice Maryland's Employer Partner Program provides support and recognition for employer TDM efforts with 39 employers participating in 2023.<sup>14</sup> Increasing partnerships with large employers such as airports, hospitals, and major corporations can raise awareness about transit and encourage behavioral changes while having low infrastructure costs, reducing congestion, and aligning with statewide environmental goals as well.

### *Planning for Growth*

Regions around the country that have seen transit ridership growth are investing in expansion of transit services. The Purple Line, scheduled to open in 2027, will provide new connections and access to existing rail lines that will further add to the travel markets served in Maryland. Additionally, MTA completed the Central Maryland Regional Transit Plan (RTP) in October 2020 which identified 11 early opportunity corridors with demand suitable for investment in high-capacity transit. MTA is currently advancing development of two of those corridors through the Red Line, which was relaunched by Governor Moore in June 2023, and the North-South Transit Corridor Study.

In Fall 2023, MTA launched the MARC Growth and Transformation Plan, which will capture the vision and goals, findings from market analysis and equity assessments, long-term service objectives, recommendations for necessary capital improvements, and implementation strategies for MARC Train. An important component of such planning efforts is to identify strategies that maximize the benefits of an investment in rail transit for MTA's current and future riders.

### Potential Future Strategies

#### *Increase Frequency*

Using targeted, data-driven service development, increasing the frequency of transit can boost ridership. Frequent availability provides flexibility to a rider and establishes easy connections to other modes. Additional infrastructure and operating investment are needed before increased frequency can be provided on MTA rail services. MTA has negotiated additional service with

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<sup>13</sup> Maryland Department of Transportation. 2023. "2023 Annual Attainment Report on Transportation System Performance." April 17. [https://www.mdot.maryland.gov/OPCP/2023\\_Attainment\\_FINAL\\_HR.pdf](https://www.mdot.maryland.gov/OPCP/2023_Attainment_FINAL_HR.pdf).

<sup>14</sup> Commuter Choice Maryland. 2023. "Employer Partner Program." Commuter Choice Maryland. December 6. <https://www.mdot.maryland.gov/tso/pages/index.aspx?pageid=43>.

Amtrak for MARC Penn Line associated with the State's investment in the Frederick Douglass Tunnel Program that will be realized over the next ten years. Negotiations with CSX for additional service on MARC Camden and Brunswick Lines are ongoing and will require additional infrastructure and operating investment. Increasing frequency on Metro Subway and Light Rail is currently limited by both railcar fleet and staff availability. Completing the new Metro Subway railcar replacement project will bring the opportunity to increase frequency; similarly, frequency on Light Rail could be increased with a new vehicle fleet and associated staffing resources to support increased service levels. These additional staffing resources include train operators, dispatchers, supervisors, mechanics, and other support roles.

#### *Increase Hours of Service*

Increasing the hours in which transit service operates can result in positive implications for ridership, attracting riders who may need transit outside the traditional hours when there is a strong enough market demand. For example, MTA's Light Rail has traditionally seen a high ridership during early hours of the service, with many riders taking the train to BWI Thurgood Marshall Airport and other job centers with non-traditional work hours, and the last MARC Penn Line train on weekday evenings is one of the higher demand trains. Increasing hours of service must be balanced with the need for overnight work on the railroads to complete SGR work and vehicle maintenance without disrupting service; however, for example, Light Rail service hours on Sunday could potentially be expanded if MTA were able to hire additional operations employees.

#### **Conclusion**

Maryland's fixed rail network has substantial potential for continued ridership growth and increased economic impact. Recovery of weekday riders should continue with increased emphasis on return-to-office requirements and continuation of existing service development and TDM programs. Additional resources dedicated to SGR, frequency, hours of service, TDM marketing, and transit-oriented development could yield benefits that leverage the recent expansion of flexible work schedules and non-commute transit trips to increase utilization of the current fixed rail network.

The current fixed rail network does not reach all areas with a strong need for transit service. Therefore, further investment in system expansion, alongside increased investment in the existing network, will continue to be necessary to extend the benefits of frequent and reliable service to all the Marylanders who need it.

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