US Department of Transportation (USDOT)

Build America Bureau's

Regional Infrastructure Accelerator (RIA) Program

Maryland Area Rail Infrastructure Accelerator (MARIA)

Location: Maryland

Regional Designation: State

RIA Budget Amount: $2,000,000

Application Narrative

January 2025

MARYLAND DEPARTMENT OF TRANSPORTATION

MARYLAND TRANSIT ADMINISTRATION

Wes Moore
Governor

Aruna Miller
Lieutenant Governor

Paul J. Wiedefeld
Secretary

Holly Arnold
Administrator

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i. Introduction

The Maryland Transit Administration (MTA) is seeking $2 million from the Department of Transportation's (DOT) Regional Infrastructure Accelerator (RIA) Program to develop innovative financing strategies for the accelerated development of a pipeline of rail projects in the State of Maryland. The Maryland Area Rail Infrastructure Accelerator (MARIA) includes several rail lines including MARC, Light Rail, Metro, Purple Line, Red Line, and State-owned freight. MARIA will be housed within the MTA, and will formalize partnerships with relevant partners, local jurisdictions, metropolitan planning organizations, asset owners, host railroads, and others.

Applicant

The MTA is a division of the Maryland Department of Transportation (MDOT). MTA operates one of the nation's largest and most diverse transit systems, including buses, light rail, metro subway, commuter rail, and paratransit services. This extensive network serves both metropolitan and rural areas throughout Maryland. MTA is a qualified applicant for the Build America Bureau's (BAB) Regional Infrastructure Accelerator Program (RIAP), as outlined in the program's Notice of Funding Opportunity (NOFO).

Organizational Structure

As shown in Figure 1, the proposed MARIA will be located within the Planning and Programming team of the MTA. The MTA is one of MDOT's modal administrations, and conducts regular coordination at the staff and leadership level with MDOT. From within the Planning and Programming team of the MTA, MARIA staff will leverage the existing relationships MTA staff members have with partners at the local Metropolitan Planning Organizations, local jurisdictions, host railroads, and locally operated transit services, including the Washington Metropolitan Area Transit Authority. Current MTA staff coordination with these stakeholders is chiefly conducted by the Statewide and

Existing Organizational Structure and Relationships

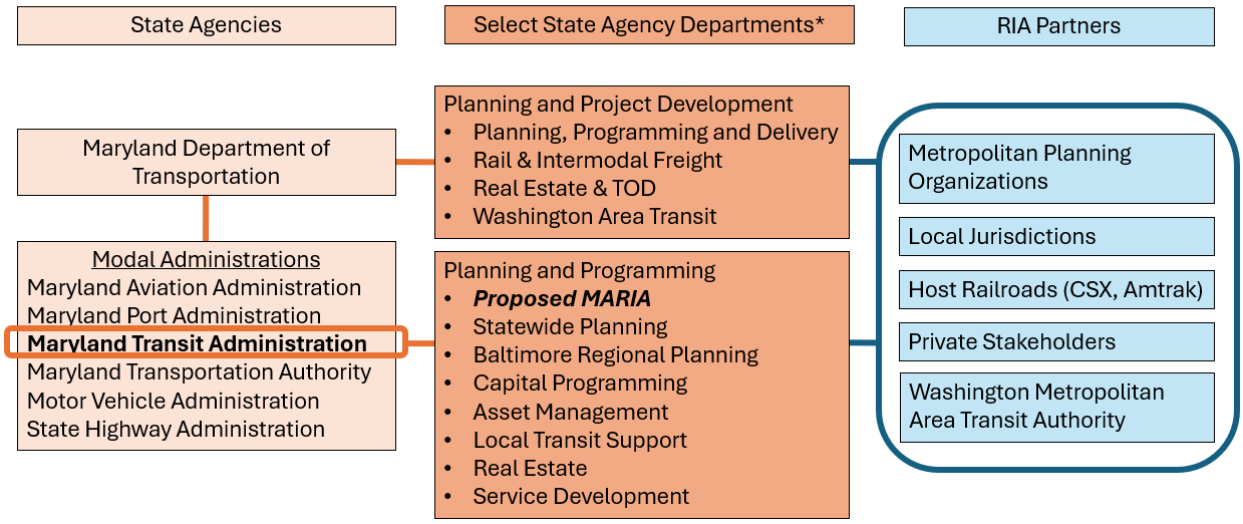

Figure 1: Existing organizational structure and relationships of MDOT, MTA, and RIA partners

Baltimore Region Planning teams, the Office of Local Transit Support, and the Capital Programming team. In addition to coordination from MTA staff, the MARIA partners also currently conduct coordination with MDOT staff related to transportation planning, capital programming, TOD initiatives, and transportation operations. A more detailed organizational chart of MARIA is included in Section 3 of the application, citing specific MTA and MDOT staff that will have significant roles in the infrastructure accelerator activities and will bring the benefit of their ongoing relationships with partners.

About MTA

Founded in 1970, MTA inherited operations from the Baltimore Transit Company, which had provided streetcar services since the 1890s. As the popularity of streetcars waned and transit ridership declined post-WWII, MTA was established to transition the city to a bus-based system. After a 1968 strike and legislative reforms, MTA developed a public transit system serving Baltimore City, Baltimore County, and Anne Arundel County. Over the following decades, MTA expanded its operations into local bus, light rail, metro subway, commuter rail, commuter bus, and paratransit services. The three existing rail transit modes operated by MTA are highlighted in Figure 2. MTA also provides technical assistance to Locally Operated Transit Systems (LOTS) across the state.

MTA is led by an administrator, Ms. Holly Arnold, who was appointed to the position in 2021. The agency is managed by a Senior Executive Team consisting of Deputy Administrators, Chiefs, Directors of key functions and projects, and Principal Counsel. Notably on the Senior Executive Team is Ms. Kate Sylvester, Deputy Administrator & Chief Program Delivery Officer. Ms. Kate Slyvester is supported by Ms. Elizabeth Gordon, the Assistant Deputy Administrator for Planning and Programming, who oversees the agency's functional areas highlighted in Figure 1. Under the leadership of Ms. Holly Arnold, the MTA completed multiple state of good repair and enhancement investments in MTA's rail modes and has identified additional needs through the agency's state of good repair, long-range, and mode-specific planning documents.

Baltimore Light Rail

Launched in 1992, this 50-mile light rail system connects Baltimore's downtown to its northern and southern suburbs, including stops at BWI Airport. The system served 425,542 riders in September 2024[1].

MARC

The 203-mile MARC system, with three lines connecting Washington, D.C., Western Maryland, Baltimore, and points beyond, ranks as the 12th largest commuter rail system in the U.S. It operates 57 daily trains on weekdays and has added weekend service on the Penn Line between Baltimore and Washington, D.C. The MARC system served 340,440 riders in September 2024[1].

Baltimore Metro Subway

Opened in 1983, this 15.4-mile subway connects Owings Mills to downtown Baltimore, providing critical access to employment, healthcare, and transit connections. In 1995, service was extended to Johns Hopkins Hospital, one of the region's large employers. The Metro Subway served 483,375 riders in September 2024[1],

Figure 2: Existing MTA Rail Modes

Qualifications

MTA and MDOT have extensive experience using innovative financing methods, providing technical assistance, and incorporating small-scale and rural projects into larger proposals. MTA and MDOT have experience in implementing innovative finance and alternative delivery approaches to accelerate completion of critical infrastructure. Below are examples of MTA and its related agencies' commitments to alternative delivery methods.

Purple Line

The 16.2-mile Purple Line, currently under construction, will improve mobility across the Capital Beltway region, providing direct connections between suburban counties and major transit systems, including Metrorail and MARC. The Purple Line financing structure leveraged both Private Activity Bonds (PABs) and a TIFIA loan. This project highlights MTA's ability to leverage innovative financing models and demonstrates recent experience utilizing public-private partnerships (P3). This has equipped MTA with lessons-learned on how to best safeguard the interest of the state while using complex funding mechanisms. Under the P3 Agreement, MTA will pay the Concessionaire availability payments during the operations and maintenance phase, subject to deductions if performance targets are not met.

The Concessionaire is comprised of three main teams, shown in Figure 3:

- Purple Line Transit Partners (PLTP) – responsible for the overall project, including financing and management.
- Maryland Transit Solutions (MTS) – responsible for the design and construction of the Purple Line.
- Purple Line Transit Operators (PLTO) – will take over to operate and maintain the Purple Line for 30 years after completion.

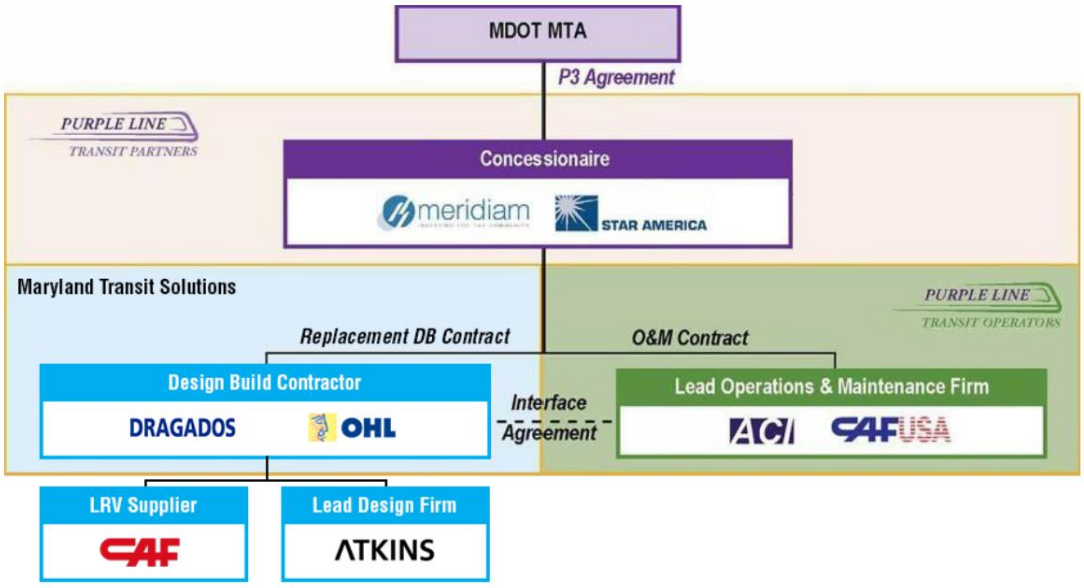

Figure 3: Purple Line P3 Organizational Chart

MARC Riverside Maintenance Facility

The MARC Riverside facility is a 32,000-square-foot building designed to improve maintenance and overhaul needs of MTA's MARC vehicle fleet. The building was completed in 2022 and includes four maintenance slots for locomotives undergoing heavy maintenance and repair that allow MTA to decrease repair time, increase fleet availability, and improve on-time performance of MARC trains. MTA utilized Construction Manager at Risk (CMAR) to complete the project, an alternative project delivery method to the typical Design-Bid-Build (DBB) method frequently used by MTA. This was MTA's second time using CMAR and the first time managing the process directly. The project was delivered within budget and on time, and MTA has incorporated lessons learned from the project into delivery of future rail projects.

North Avenue Rising

North Avenue Rising was a $27 million project to support economic revitalization along North Avenue in Baltimore City. The project included state of good repair improvements to a Metro Subway Station, customer experience improvements to a Light Rail Station, and various complete streets elements in the public right of way. The project serves as an example of local collaboration on a federal grant. MTA won funding for North Avenue Rising from the US Department of Transportation's Transportation Investment Generating Economic Recovery (TIGER) Program, with contributing funds from Baltimore City. Through implementation of the project, the MTA drafted and signed multiple Memoranda of Understanding with Baltimore City to coordinate design approvals, construction management practices, and maintenance of new assets.

Camden Station Replacement Project

The Camden Station Replacement Project was a $7.2 million initiative that improved a critical downtown Baltimore station with direct service connections to the MARC train and Light Rail. The project was driven by a memorandum of agreement (MOA) between MDOT MTA and the Maryland Stadium Authority (MSA). With Baltimore's historic Camden Yards Sports Complex adjacent to Camden Station, the replacement project was critical for improving transit and access to the sport complex. The new Camden Station was completed in September 2019 and includes an expanded seated waiting area, restrooms, new ticket vending machines, and service and informational displays. The MTA and MSA collaborated to complete this project, with MTA providing full funding and design expertise for the rail infrastructure, MSA providing management services, and both agencies agreeing on design and pre-construction contracts.

Frederick Douglass Tunnel Program/West Baltimore MARC

The Frederick Douglass Tunnel Program is an Amtrak initiative with significant MTA coordination to replace the 150-year-old Baltimore & Potomac (B&P) Tunnel which creates the largest bottleneck on the Northeast Corridor between Washington, DC and New Jersey. The Program will create a new Frederick Douglas Tunnel and a new West Baltimore MARC Station. MTA is a partner on the Frederick Douglass Tunnel Program and has made significant efforts for its advancement, including a federal grant application and subsequent award of up to $4.7 billion for the tunnel's final design and construction. While Amtrak is leading the project delivery, MTA has entered into a Program Definitive Agreement to establish the roles and responsibilities of the parties. Construction is expected to be completed in 2035.

Experience of Key Individuals

(alphabetical by last name)

Eric Beckett

Director of Capital Programming and Asset Management

Eric Beckett is the Director of Capital Programming and Asset Management for the MTA. Mr. Beckett has served as this Director, since 2024. Mr. Beckett provides oversight and guidance for the MTA capital program. These responsibilities include quarterly submittals to MDOT; application, management, and closure of federal grants; approval of fund certifications; collection, reporting, and incorporation of asset data into the capital program; and review and approval of capital invoices. Prior to joining MTA, Mr. Beckett served as Deputy Director in the Office of Planning and Preliminary Engineering at the Maryland State Highway Administration over the Program Development, Regional Planning, and Travel Forecasting and Analysis divisions.

Dean Del Peschio

Chief Strategy Officer, MARC

Dean Del Peschio is MTA's Chief Strategy Officer for MARC. Mr. Del Peschio has over 16 years of experience in financial oversight and budget management for multiple large federally funded projects. He is intimately involved with all aspects of procurement, from specification development through award and contract closeout, with comprehensive knowledge of billing processes, invoicing, compliance requirements, audit processes, and reporting requirements. He also has extensive experience with Federal Railroad Administration (FRA) oversight, coordination, regulatory compliance, waiver applications, and relations between the FRA and a commuter railroad.

Martha Gross

Executive Director of Transit Development and Delivery

Martha Gross, Ph.D., P.E., F. ASCE, is MDOT's Executive Director of Transit Development and Delivery. Dr. Gross has made significant contributions toward the development, procurement, and delivery of over $10 billion of transportation infrastructure projects throughout the United States, integrating perspectives from over 20 years of experience as contractor, consultant, academic, and owner. Major projects throughout her career include the Cooper River Bridge (South Carolina), Downtown/Midtown Tunnels (Virginia), Tappan Zee Bridge (New York), and Hampton Roads Bridge-Tunnel Expansion (Virginia). Gross is a published author in the practical implementation of alternative project-delivery methods, particularly for design-build and public-private partnership contracts. She remains closely connected with academia, having taught as an adjunct professor at The Citadel and serving on advisory boards for Virginia Tech Civil Engineering and the Cornell Program in Infrastructure Policy. Gross recently received the Construction Leadership award from ASCE Norfolk (Virginia) and has also earned national recognitions from the American Road & Transportation Builders Association (ARTBA), Women's Transportation Seminar, and Eno Center for Transportation.

Fred Lippert

Director of Baltimore Regional Planning

Fred Lippert is MTA's Director of Baltimore Regional Planning. Mr. Lippert is a professional landscape architect with over 20 years of experience ranging from transportation facility site design to city/regional planning and urban design. At MTA, he oversees project planners for studies, analysis and evaluation of projects, community engagement, and concept design for the core service area for all modes in the Baltimore region. Mr. Lippert is passionate about rethinking existing transportation systems and their influence on how we inhabit cities, towns and rural areas. Fred's broad experience and design skill, coupled with his attention to detail, enables him to move seamlessly from concepts to detailed understanding of how large-scale capital delivery programs must serve not only the transit assets, but ultimately the transit-riding public.

Michael Ollinger

Assistant Deputy Administrator, Chief of Program Management

Michael Ollinger, PMP is the Assistant Deputy Administrator/Chief of Program Management for the MTA. Mr. Ollinger has over 22 years of experience in operations/maintenance and engineering management and has served in this position since 2022. Mr. Ollinger provides oversight and guidance to the program for successful capital delivery for MTA. His responsibilities include the oversight and guidance for the development of an efficient agency program of short- and long-term projects applying asset management data for state-of-good repair, project scoping analysis, development and evaluation, and coordinating delivery of the projects. He has led the development and growth of the MTA Office of Program Management Oversight since its inception in 2022 developing various processes and procedures to implementing and integrating those needs into the MTA Capital Delivery program.

Jaclyn Hartman

Assistant Secretary for Transportation Investments

Jaclyn Hartman is MDOT's Assistant Secretary for Transportation Investments. Before her appointment to this role, Ms. Hartman served as MDOT's Chief Financial Officer and Director of the Office of Public-Private Partnerships. She has extensive knowledge in these areas as well as the ability to develop creative solutions to solve fiscal issues. Prior to joining MDOT, Ms. Hartman worked for the Maryland Transportation Authority and the Department of Legislative Services. During her career, she has worked on both the legislative and executive branch sides of Maryland's P3 projects and has served as committee staff for the Joint Legislative and Executive Commission on Oversight of Public-Private Partnerships, which created Maryland's statutory framework for P3s.

Darrell Smith

Director of Statewide Planning

Darrell Smith is MTA's Director of Statewide Planning. Mr. Smith has 33 years of experience in business planning and cost projection, passenger service planning and design, advanced passenger transportation systems, transit asset management, and inter-government and stakeholder coordination. Mr. Smith led the MTA's MARC Growth and Transformation Plan, developing service plans and investment packages for the three existing commuter rail lines and three potential extensions. He has developed route costing models used to evaluate proposed rail passenger route and service

changes and forecast the financial impact of proposed service and frequency adjustments to reduce Amtrak's federal subsidy requirements, forecast state payments for state supported services meeting PRIIA section 209 requirements, and developed the business case and cashflows for Amtrak's NextGen Acela Program RRIF loan application.

Julie Sweeney

Principal Counsel

Julie Sweeney is Principal Counsel for the MTA and an Assistant Attorney General for the Maryland Office of the Attorney General. As Principal Counsel, Ms. Sweeney leads a team of litigators, transactional attorneys, and support staff in performing legal services on behalf of MTA. Ms. Sweeney is an experienced trial lawyer in the areas of civil rights, employment/labor, and complex litigation, and represents the MTA in a variety of transactions concerning public-private partnerships, major transportation capital projects, and contracts for services and equipment. She is a key member of the MARC negotiation team that is responsible for negotiating commuter rail service contracts between the MTA, Amtrak, CSX, and Bombardier and serves as Counsel to the joint MDOT and MTA's Office of Freight Logistics and Multi-Modalism. She served as one of the lead attorneys on the Purple Line P3 Project, first in litigation in three separate actions over five years, and then throughout the re-solicitation and implementation processes from 2020 to 2023.

John Thomas

Director of Rail and Internodal Freight (MDOT)

John "JT" Thomas is MDOT's Director for Rail and Intermodal Freight in the MDOT Secretary's Office. In this role, he is responsible for leading a team in Planning, Operations, Project Development and Delivery of freight and rail programs statewide. Mr. Thomas has 20 years of transportation planning, engineering, capital programming, regional coordination and design experience with State and Local Government in Maryland and Virginia. Prior to that, he worked in the private sector specializing in Planning and Design, Fleet Management and Federal Land Management.

Edward Wilson

Chief Financial Officer

Edward Wilson is Chief Financial Officer for the MTA. Mr. Wilson has served MT as Chief Financial Officer since 2023, and prior to that as deputy Chief Financial Officer since 2017. Mr. Wilson provides oversight and guidance on fiscal and financial policies and technical activities relating to all MTA operations. These responsibilities include Accounting, Financial Planning and Analysis, Grants, Payroll, Union Pensions, Fixed Assets, Treasury and Fare Collections. His oversight includes formulation, development, and implementation of policies and procedures that maintain and improve MTA's compliance with various financial requirements including GAAP compliance, compliance with state accounting requirements, state and federal payroll compliance and compliance with pension administration requirements. Prior to joining MTA, Mr. Wilson served as Operations Engineering Director for Safeway Inc. with financial responsibilities including retail operations, distribution/warehousing and facilities maintenance.

ii. Description of Proposed Geographic/Jurisdictional Region

MARIA will serve Maryland's entire state, which includes both major metropolitan regions—the Baltimore and Washington, D.C. metro areas—and vast rural regions, especially in the western and eastern parts of the state. Maryland's rural areas represent 25% of the state's population. Due to its diversity of geographic features, metropolitan and rural areas, and population mix, Maryland has been called "America in Miniature."

Maryland's population, as of the 2020 census, stands at 6,177,224, ranking 18th in the nation. With a consistent growth rate of at least seven percent per decade, Maryland is the 22nd fastest-growing state relative to population size. This continued growth underscores the increasing demand for infrastructure and transportation solutions.

Maryland's economy excels in defense, aerospace, bio-research, and technical services, with significant infrastructure for satellite government offices in the suburban Baltimore/Washington corridor. Notably, Fort Meade hosts major agencies such as the Defense Information Systems Agency, U.S. Cyber Command, and the National Security Agency. Additionally, Maryland is home to esteemed educational and medical research institutions, including Johns Hopkins University and medical research facilities.

Maryland rail commuters consist of more than 63,000 daily commuters.[1] The state's rail system includes commuter rail (MARC), intercity passenger rail (Amtrak), light rail, and metro subway services. Although rail ridership decreased significantly post-COVID-19, it has steadily recovered in recent years. The state's existing rail lines, including both passenger and freight, are shown in Figure 4.

Figure 4: Existing Maryland Rail Lines

[1] https://drive.google.com/file/d/1FQFN4GtnJfg4lqsOzze6SF1AS0bKXwx8/view?usp=drive_link

Agencies

There are multiple agencies located in Maryland that govern or aim to improve transit and rail services in the state.

MDOT was established in 1970 as a principal executive department of the State of Maryland, consolidating independent state agencies responsible for different modes of transportation. The agency's original goal was to improve and evolve transportation spheres in the state. Today, MDOT consists of five modal administrations: the Maryland Aviation Administration (MAA), the Maryland Port Administration (MPA), the Motor Vehicle Administration (MVA), the State Highway Administration (SHA), and the Maryland Transit Administration (MTA). Additionally, MDOT houses authorities including the Maryland Transportation Authority (MDTA). MDOT aims to provide safe, reliable, accessible, equitable, and sustainable transportation options to Marylanders across the State.

MTA, as part of MDOT, aims to provide safe, efficient and reliable transit across Maryland with world-class customer service. As the applicant for this grant, MTA is one of the largest multi-modal transit systems in the United States and operates significant rail systems including the Light Rail, Metro Subway, and MARC rail. In the coming years, MTA will also operate the Purple Line, a new light rail connecting Prince George's and Montgomery counties with direct connections to Metrorail, AMTRAK, MARC, and bus networks, and the Red Line, a new light rail serving Baltimore's underserved east-west corridor.

As federally required for urbanized areas, Maryland is home to seven Metropolitan Planning Organizations (MPOs): the National Capital Region Transportation Planning Board (TPB), the Baltimore Regional Transportation Board (BRTB), the Cumberland Area Metropolitan Planning Organization (CAMPO), the Hagerstown/Eastern Panhandle MPO (HEPMPO), the Wilmington Area Planning Council (WILMAPCO), the Salisbury/Wicomico Metropolitan Planning Organization (SWMPO), and the Calvert-St. Mary's Metropolitan Planning Organization (C-SMMPO). Through the development of long-range transportation plans (LRTPs) and short-term transportation improvement programs (TIPs), these MPOs address their area's transit and rail needs where applicable.

Located in Maryland are over 20 Locally Operated Transit Systems (LOTS) that receive technical assistance from MTA. The LOTS vary around the state depending on the jurisdiction's size and population density. Some LOTS connect to MTA's rail services, extending access to the destinations served by these rail corridors.

Local jurisdictions are also invested in the improvement of rail services, especially where rail stations are located. For example, the City of Brunswick has increased interest in the Brunswick Line Improvement Project's goals to improve/expand the service and address safety issues for two at-grade crossings in Brunswick.

iii. Accelerator Proposal

Goal

MARIA will identify and develop innovative financing and project delivery strategies, including the completion of supporting technical analyses and design activities, to advance rail infrastructure projects that focus on necessary state of good repair investments and enhancements to leverage more value from existing state rail assets, as well as develop financing strategies for the Red Line which will accommodate Maryland's growth, improve connectivity, and encourage private sector investment.

Organization

As shown in Figure 5, MARIA will be housed within MTA and overseen by the Assistant Deputy Administrator for Planning and Programming. MARIA will be staffed by a Project Manager and a Project Coordinator, both dedicated to advancing rail infrastructure projects. MARIA will include existing MDOT and MTA staff members across functional areas organized into three teams: Project Planning, Modal Coordination, and Strategic Advising. The Project Planning team will provide a direct line to the staff responsible for project planning and agency capital budgets. The Modal Coordination team will provide a direct line for the rail modes responsible for implementing and integrating the capital projects. The Strategic Advising team will

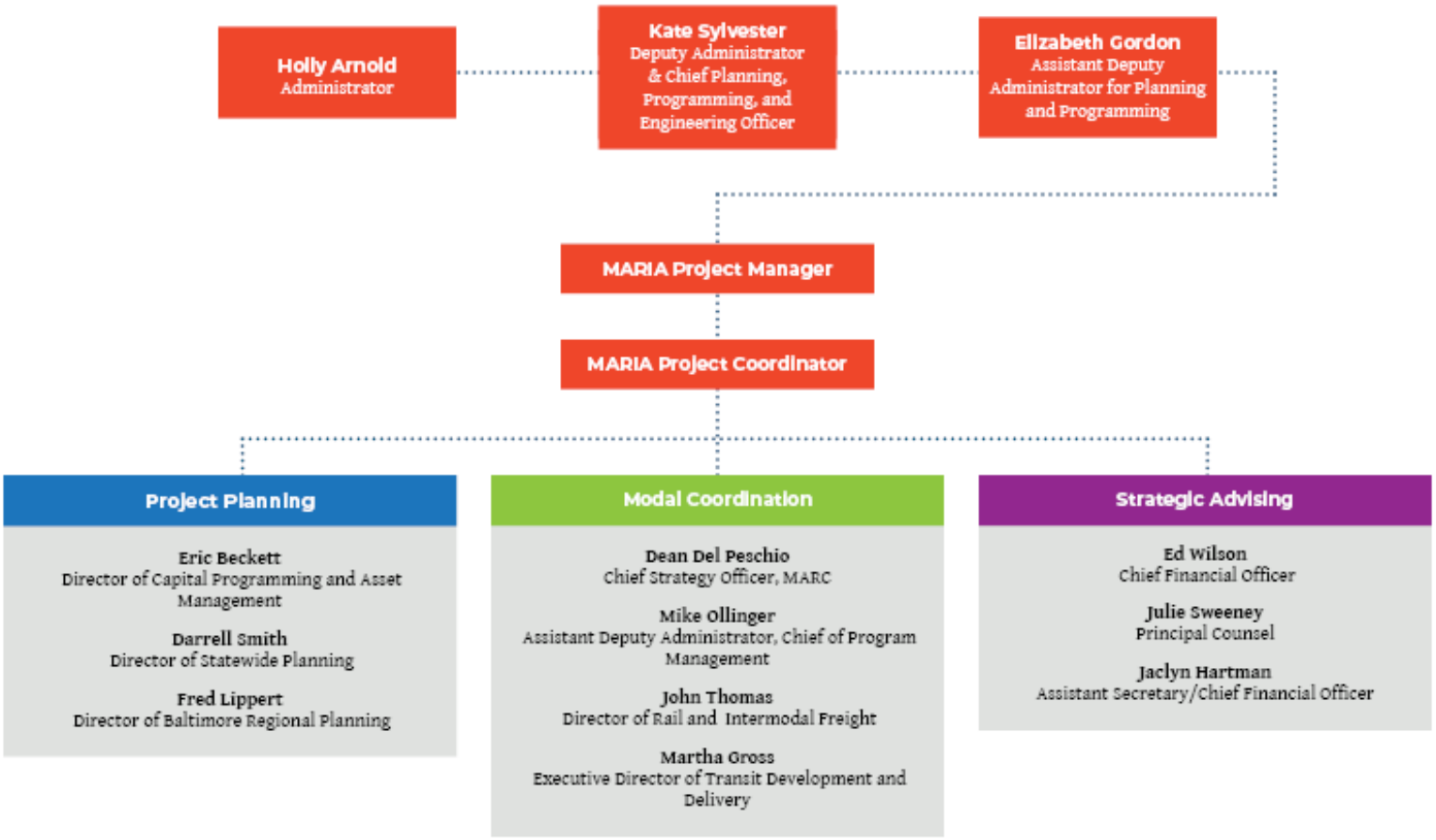

Figure 5: MARIA Organizational Chart

assist in long-term agency funding and legal matters associated with various project delivery methods and innovative financing mechanisms.

Establishment of MARIA

With funding from the Regional Infrastructure Accelerator Program, MTA will establish MARIA as a permanent division under the supervision of MTA's Assistant Deputy Administrator for Planning and Programming. Recruitment of the MARIA Project Manager and Project Coordinator will include a national search prioritizing technical experience with rail infrastructure assets and use of innovative financing mechanisms, including public-private partnerships.

Partnerships

As part of MTA, MARIA will leverage existing relationships and partnerships held by staff of MTA and MDOT to collaborate with other local agencies and jurisdictions in rural and urban areas of Maryland. Building on the existing collaboration conducted by MTA and MDOT, MARIA will establish new formal partnerships directly with the infrastructure accelerator. MARIA will formalize partnerships with relevant local jurisdictions, metropolitan planning organizations, asset owners, host railroads, and others through Memoranda of Understanding, Joint Project Agreements, and other partnering arrangements. These partners will convene to adopt a mission statement, identify formalized roles and responsibilities, and commit to a schedule and milestones documented in a memorandum of understanding.

Scope of Work

MARIA will assist in rail infrastructure projects by providing support for planning and design activities such as financial planning, feasibility studies, and market analyses, and by exploring innovative financing models such as public-private partnerships, federal credit options, and Private Activity Bonds (PABs).

Key Tasks

1. MARIA Management & Coordination
   Mobilize staff, engage consultants, and formalize partnerships with relevant stakeholders via tools like memoranda of understanding or joint project agreements. Finalize the governance structure and contributing stakeholder roles and position descriptions. Conduct monthly meetings, stakeholder engagement activities, and complete grant reporting and compliance.
2. Pipeline of Projects Assessment
   Consolidate and assess planning documents and conduct feasibility studies to evaluate planned rail projects. Further project development, including design activities, environmental impact review, and service planning scenarios associated with bringing rail infrastructure online. Review and analysis of engineering cost estimates, construction timelines, service capacity and system integration, and ridership projections in support of effective financial modeling and overall project readiness.

3. Financial Planning & Business Models
   Develop financial strategies and innovative funding mechanisms for key rail projects. Identification of potential financing strategies and business models for the pipeline of projects based on the completed assessment activities. Analysis of potential combinations of funding sources that may support large infrastructure projects. Review of equity considerations for the identified financing and project delivery options.
4. Final Report & Evaluation
   Completion of a Final Report that consolidates and summarizes all evaluations and findings, including the assessments and technical analyses of pipeline projects, identified financing and project delivery methods, and MARIA business models. The Final Report will also outline the potential next steps for financing and implementing the selected pipeline projects.

Timeline

The MARIA initiative will follow a structured timeline with key milestones for the establishment, financial planning, and project analyses, ensuring that all objectives are met efficiently and effectively. Upon grant agreement obligation, the formal MARIA governance structure will be completed within six months. This will be followed by the pipeline of projects assessment and financial analysis and planning. A summary of the MARIA milestone timeline in shown in Figure 6.

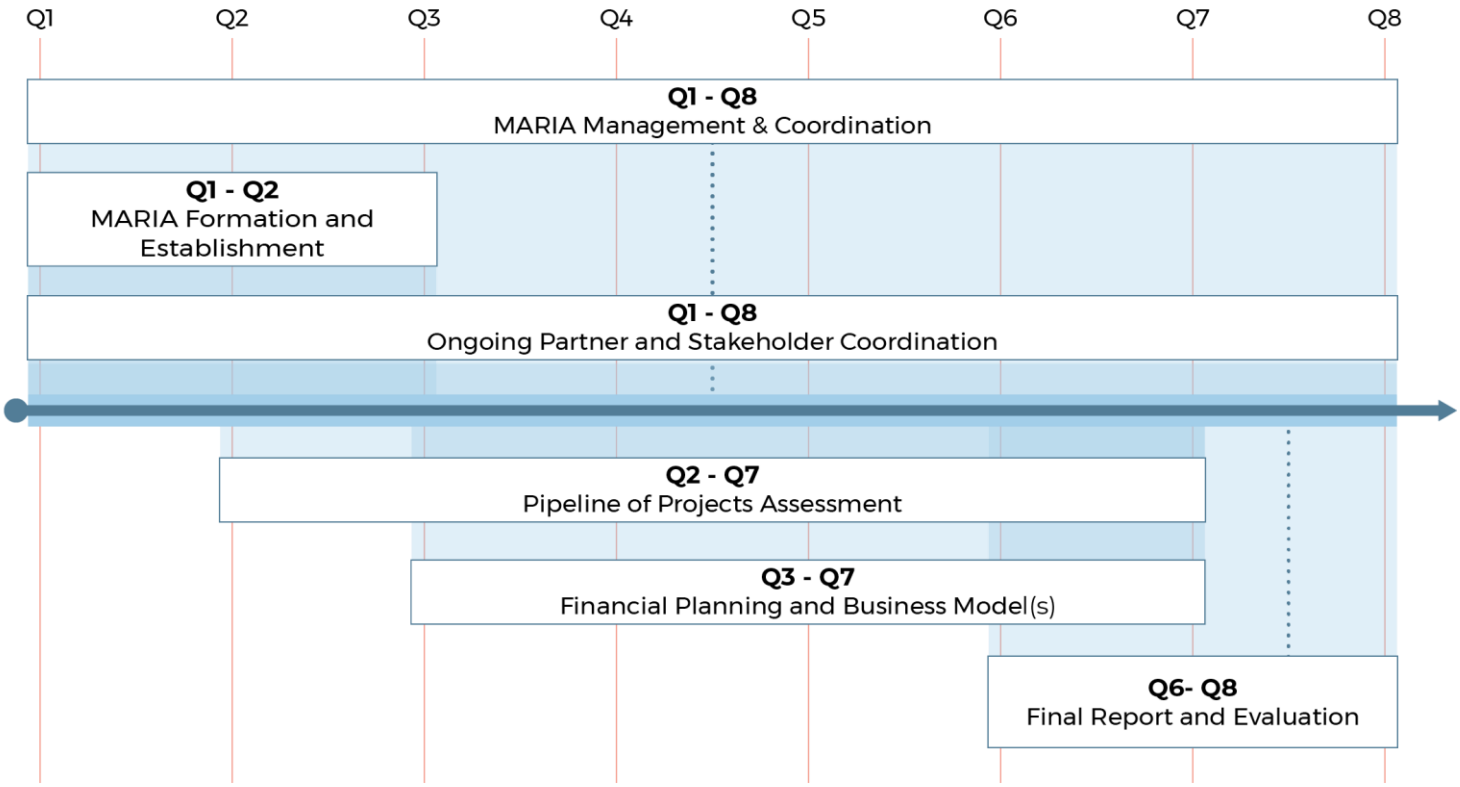

Figure 6: MARIA Milestone Timeline

iv. Budget, Sources, and Uses for Full Accelerator Funds

The MTA is requesting $2 million in RIA Grant funds to accelerate projects that will benefit the State of Maryland and region as a whole. No non-federal matching funds are included in this cost proposal. As described above, the MARIA Project Manager will be fully housed within MTA and will be responsible for the convening of partners, the enactment of the governance structure, grant compliance and reporting. The Project Coordinator will support the Project Manager tasks and ensure project deliverables are on task and completed in a timely manner. The pipeline of projects assessment and design will include engineering cost estimates and preliminary design for projects not yet advanced. The Financial Planning & Business Model funding will develop financial strategies and innovative funding mechanisms, and the final report will summarize findings and recommendations. Table 1 breaks down the RIA costs by task.

Activities	Federal Request (Current RIA Application)	Percent of Total Project Costs
MARIA Project Manager	$350,000	17.5%
MARIA Project Coordinator	$250,000	12.5%
Pipeline of Projects Assessment and Design	$300,000	15%
Financial Planning & Business Model	$1,000,000	50%
Final Report & Evaluation	$100,000	5%
Total	**$2,000,000**	**100%**

Table 1: MARIA Costs per Task

v. Business Model

MTA and its project partners have a significant record of federalized project delivery in Maryland, and MTA has delivered numerous DOT infrastructure grants. As described in the scope of services, MARIA will utilize three primary phases to implement the business model: MARIA Formation and Establishment, Pipeline of Projects Assessment, Financial Planning & Business Model.

The MARIA Business Model will advance its pipeline projects with the organizational framework shown in Figure 5. Once the organizational process is established, the MARIA team will identify opportunities for efficiency and collaboration by utilizing staff resources from various disciplines throughout the respective agencies and additional stakeholders. The various staff will provide contributions from planning, mobility,

engineering, communications, accounting, finance, and contracting. A specific timeline will be developed as an early deliverable of the project team.

The MTA and MDOT have a robust foundation of planning documentation that provides a strategic basis to identify eligible projects for support under the Maryland Area Rail Infrastructure Accelerator (MARIA). Below are key long- and short-range planning documents that guide Maryland's transportation and rail infrastructure development. A broad list of additional transportation planning documents in Maryland is shown in Figure 7.

Maryland Transportation Plan (MDOT)

MDOT develops a statewide, long-range transportation plan, which guides investments and decisions over a 20-year period. This plan is updated every five years. Currently, MDOT is operating under the 2040 Maryland Transportation Plan (MTP), with a draft of the 2050 MTP released in early 2024. These plans outline transportation trends, challenges, goals, and implementation strategies in alignment with MDOT's mission.

Maryland State Rail Plan (MDOT)

As required by the federal Passenger Rail Investment and Improvement Act of 2008 (PRIIA), MDOT publishes the Maryland State Rail Plan, updated every four years. The most recent update, in 2022, provides an overview of the state's current and future rail network, including commuter, intercity passenger, and freight rail systems. The plan also addresses public and private investment policies to guide the growth and improvement of the rail system.

Figure 7: Overview of Maryland Transportation Plans

Maryland Statewide Transit Plan (MTA)

The MTA is in the process of finalizing its Maryland Statewide Transit Plan (STP), a 50-year vision for coordinating local and regional transit across the state. The draft, published in 2021, outlines transit goals, strategies for success, and guidelines for advancing transit improvements. This plan will play a critical role in supporting regional connectivity and service enhancements.

Central Maryland Regional Transit Plan (MTA)

This plan, finalized in the fall of 2020, outlines a framework for public transportation improvements in the greater Baltimore area, encompassing Anne Arundel, Baltimore City, Baltimore, Harford, and Howard counties. Developed with input from local representatives, technical experts, the Regional Transit Plan Commission, the Baltimore Metropolitan Council, a LOTS working group and the public, this plan includes recommendations for enhancing existing rail corridors—Light Rail, Metro Subway, and MARC—to improve ridership, efficiency, and the overall rider experience. The plan also identifies new regional transit corridors and supports the region's transit goals.

Modal Investment Plans

MTA develops "Cornerstone Plans," which align with the goals set in the Statewide and Central Maryland Transit Plans. There are multiple Cornerstone Plans that relate to rail transit, including the MARC Growth and Transformation Plan, the Light Rail Cornerstone Plan, and the Metro Subway Cornerstone Plan. These plans focus on strategic priorities, policies, and initiatives for each transit mode, particularly rail.

The MARC Growth and Transformation Plan is a major update and expansion of the 2019 MARC Cornerstone Plan. Based on a market analysis conducted in late 2023 and early 2024, the Growth and Transformation Plan proposes more rural extensions of the Brunswick Line into Western Maryland and the Penn Line to Newark, DE, and an additional extension of MARC services south to Alexandria, VA. Additionally, the plan proposes more equitable and more frequent, all-day MARC services, as well as improved system connectivity between MARC lines, other MTA services, Amtrak, WMATA, and more. As of late 2024, the MARC Growth and Transformation Plan had completed its public engagement, and the plan is being finalized.

The foundational work laid out in these planning documents provides a clear roadmap for rail infrastructure investments and identifies key projects that would benefit from support through MARIA. By aligning with these strategic plans, MARIA will help advance Maryland's rail infrastructure to meet the state's evolving transportation needs.

vi. Pipeline

The MARIA Project Pipeline includes critical rail investments that have been identified in transportation planning documents and advanced in mode-specific investment plans. As displayed in Figure 8, the MARIA project pipeline includes investments within both the metropolitan areas of Baltimore and Washington D.C., as well as the rural area of Brunswick, Maryland.

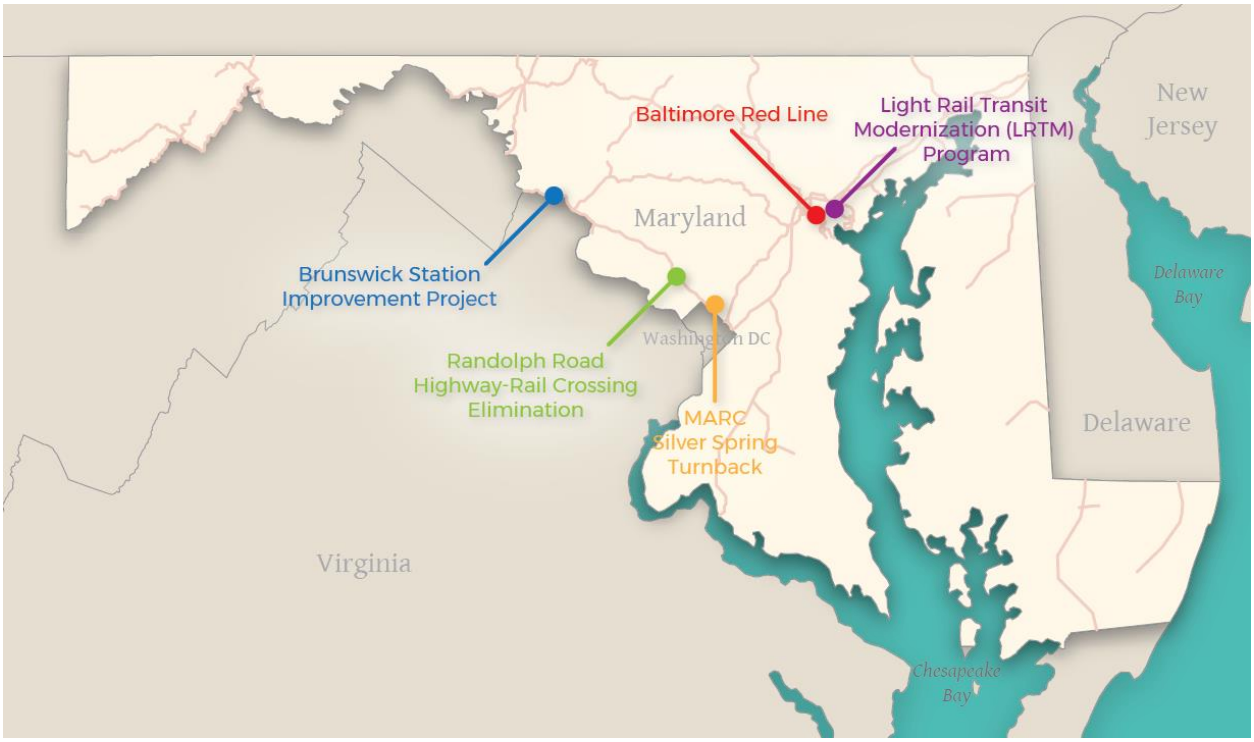

Figure 8: MARIA Pipeline Project Locations

Further details on the MARIA Project Pipeline are shown in Table 2. This table provides an illustrative list of projects across multiple rail modes and jurisdictions. For each project, the table includes the project name, location, project sponsor, project costs, timeline, and brief description. The Project Pipeline also identifies proposed MARIA activities and potential financing programs from the Build America Bureau that could be utilized to advance the projects.

MARIA Project Pipeline

Project Name	MARC Brunswick Station Improvement Project
Location	Brunswick Station
Sponsor	MTA
Description	Based on an MTA study of potential improvements to the MARC Brunswick Line, the MARC Brunswick Station Improvement Project will address several identified challenges of current conditions. In the City of Brunswick, a census-designated rural area in Western Maryland, the Project will address safety issues for two at-grade crossings via a Pedestrian/Bicycle/Lightweight Emergency Vehicle Bridge. It will also address safety and congestion at the station and on the line in general via a new center island platform at the Brunswick MARC station, separating the MARC passenger trains from CSX freight traffic. Lastly, the Project will address the limited ability for MARC to conduct inspections and heavy maintenance of vehicles with a Brunswick Yard Maintenance Facility. The project will address critical safety concerns and prepare MARC for future third track expansions.
Potential Financing Program	RRIF, PABs
MARIA Proposed Activities	Funding and financing options analyses; innovative financing/procurement; project bundling and/or phasing.
Project Costs	$150,000,000
Project Timeline	2026-2038
Project Name	**MARC Silver Spring Station Turnback**
Location	Silver Spring, Maryland
Sponsor	MTA
Description	The MARC Silver Spring Station Turnback is an enabling component that will lay the foundation for MTA to plan for a third track along the MARC Brunswick Line, which can enhance safety and alleviate congestion along the rail corridor by separating future MARC trains terminating at Silver Spring from CSX freight traffic.

MARIA Project Pipeline

Potential Financing Program	RRIF, PABs
MARIA Proposed Activities	Revenue forecasting; funding and financing options analyses; innovative financing/procurement; project bundling and/or phasing.
Project Costs	$75,000,000
Project Timeline	2026-2038
Project Name	**Light Rail Transit Modernization (LRTM) Program**
Location	Central Maryland (Baltimore City, Baltimore County, Anne Arundel County)
Sponsor	MTA
Description	As described in MTA's Light Rail Cornerstone Plan, MTA plans to retrofit all Light Rail stations to accommodate the new, low-floor vehicles. Within the LRTM Program, the Light Rail Vehicle Replacement Project received federal funding in February 2024 through the Rail Vehicle Replacement Grant, which will allow MTA to replace the fleet. While federal funding support is critical for the fleet upgrade, additional funding is needed to address other requirements, including retrofitting stations, modifying maintenance facilities, and amending standard operating practices.
Potential Financing Program	TIFIA, PABs
MARIA Proposed Activities	Supporting planning, preliminary engineering and design work; innovative financing/procurement; project bundling and/or phasing.
Project Costs	$1,300,000,000
Project Timeline	2023-2034
Project Name	**Penn-Camden Connector (PCC)**
Location	Baltimore, Maryland
Sponsor	MTA

MARIA Project Pipeline

Description	As established by the 2019 MARC Cornerstone Plan, MTA will create a rail link called the Penn-Camden Connector (PCC) to connect the MARC Penn line and the Camden Line. The Penn Line operates on Amtrak's Northeast Corridor (NEC), while the Camden Line operates on CSX Transportation's Capital Subdivision. By connecting the two lines, the PCC will enable future access from the Penn Line to downtown Baltimore and provide direct access from the Penn Line to the MARC Riverside Layover and Maintenance Facility. The project also anticipates repurposing the Mt. Clare Yard into a layover facility which will improve efficiency and allow for the storage of more MARC trains with line expansions. It was awarded a federal grant under the 2022 Consolidated Rail Investment and Safety Improvements (CRISI) Program for 30% design and National Environmental Policy Act (NEPA) processes. In 2024, MTA progressed initial design concepts, initiated environmental resource evaluation, and solicited public input on the project.
Potential Financing Program	RRIF, PABs
MARIA Proposed Activities	Funding and financing options analyses; innovative financing/procurement; project bundling and/or phasing.
Project Costs	$330,000,000
Project Timeline	2024-2032
Project Name	**The Baltimore Red Line**
Location	Baltimore Area (Woodlawn to Highlandtown, Maryland)
Sponsor	MTA
Description	Following the identification of a need for better east-west connections across the Baltimore region, MTA has collaborated with state, city, and community leaders to plan a new, 14-mile high-frequency, high-capacity light rail line. The Red Line was included in the 2020 Central Maryland Regional Transit Plan and will travel through downtown Baltimore, connecting residents to jobs, education, services, and opportunities. State funding has

MARIA Project Pipeline

	been allocated for the Red Line's full planning process. Currently, the project is in the Alternatives Analysis phase in which MTA will refine and decide between three alignment alternatives.
Potential Financing Program	TIFIA, PABs
MARIA Proposed Activities	Funding and financing options analyses; innovative financing/procurement; statutory and regulatory compliance analyses.
Project Costs	$4.7 - $9.0 billion, pending the alternative advanced
Project Timeline	2024 – TBD
Project Name	**Randolph Road Highway-Rail Crossing Elimination**
Location	North Bethesda, Montgomery County, Maryland
Sponsor	MDOT & Montgomery County DOT
Description	The Randolph Road Highway-Rail Crossing Elimination project aims to replace the current at-grade crossing of the main CSX/Amtrak/MARC tracks on Randolph Road with a grade-separated crossing. Randolph Road, also known as a Monrose Parkway, is a highly traveled two-lane highway with a center turn lane. The crossing is located near a large suburban area in North Bethesda with many retail stores, restaurants, and other commercial buildings. MTA's 2019 MARC Cornerstone Plan indicates an ongoing initiative to eliminate at-grade pedestrian crossings. The Randolph Road Highway-Rail Crossing Elimination would eliminate the safety concern of the at-grade crossing for vehicles and pedestrians.
Potential Financing Program	RRIF
MARIA Proposed Activities	Funding and financing options analyses; innovative financing/procurement; project bundling and/or phasing.
Project Costs	$50 million - $110 million, pending the alternative advanced
Project Timeline	2025-2031

Table 2: MARIA Project Pipeline

vii. Readiness

The MTA and RIA partners will complete an initial plan to develop a combination of projects that will become the Regional Infrastructure Accelerator serving the state. MTA operates one of the nation's largest and most diverse transit systems, including buses, light rail, metro subway, commuter rail, and paratransit services. The MTA can enact its own resolutions, enter into contractual agreements, and seek financing autonomously. The MTA and RIA partners will ensure the governance structure, workspaces, and facilities are available for the MARIA team. The MTA will continually review the MARIA form of governance and any potential changes to ensure the success of the collaborative. The MTA and proposed partners have an extensive history of working together to complete construction projects for the region.

viii. Underserved Communities

The USDOT Equitable Transportation Community (ETC) Explorer shows that 33% of Maryland's population lives in transportation-disadvantaged census tracts.[2] As seen in Figure 3Figure 9Figure 9, tracts identified by the ETC Explorer that have inequitable transportation systems and services are concentrated in Baltimore City and County, the Eastern Shore, Northern Maryland, Southern Maryland, and Western Maryland.

Additionally, the Climate and Economic Justice Screening Tool (CEJST) identifies over **400 disadvantaged census tracts** around the state.[3] The CEJST identifies disadvantaged tracts based on climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development burdens. The state's disadvantaged population is most concentrated in Baltimore City with over one third of Baltimore City's population considered disadvantaged.[4]

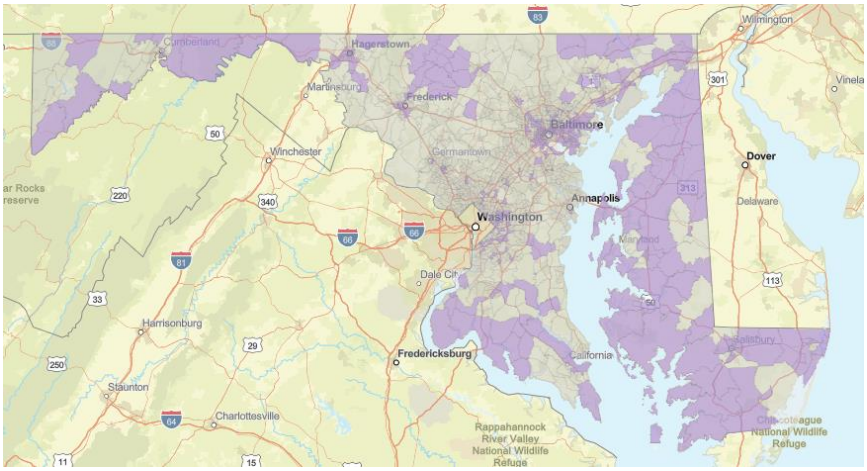

Figure 9: ETC Map of Inequitable Transportation Systems

[2] https://experience.arcgis.com/experience/0920984aa80a4362b8778d779b090723/page/ETC-Explorer---State-Results/

[3] https://screeningtool.geoplatform.gov/en/

[4] https://www.esri.com/arcgis-blog/products/bus-analyst/national-government/a-snapshot-of-disadvantage-in-the-united-states/

Figure 10: CEJST Map of Disadvantaged Tracts

As shown in Figure 10, other disadvantaged tracts are concentrated in Prince George's and Montgomery Counties (outside of Washington, DC), Western Maryland, and the Eastern Shore.

The proposed pipeline of projects will create positive outcomes that will increase affordable transportation options, improve safety, reduce pollution, connect communities with good-paying jobs, and improve access to transportation where current connections do not exist. The projects will improve access and provide economic growth opportunities for underserved communities by filling in transportation gaps across the state based on ridership demand, employment centers, transit-oriented development, and educational facilities.

For example, MTA's Baltimore Red Line Project aims to serve many of the communities identified as being transportation disadvantaged. The project's proposed light rail line will travel between Woodlawn and Bayview in the Baltimore region. Both communities, as well as many communities located along the Red Line's proposed corridors, are transportation disadvantaged. Following one of MTA's strategies for success: "Be Equitable, Accessible, and Affordable," the Red Line project will drive equity and accessibility in underserved communities in the Baltimore region.

Additionally, the Brunswick Station Improvement Project and Silver Spring Turnback are pre-requisite projects to increasing service on the MARC Brunswick Line connecting Western Maryland and West Virginia to the employment centers of Washington D.C. and the surrounding areas. As an affordable commuting option, the MARC Brunswick Line can connect people to good-paying jobs for rural areas of Maryland. Travel by train has lower emissions than automobile travel and can mitigate the acceleration of climate change. The reverse travel pattern starting in the Washington D.C. area can improve access to nature within the western areas of the State.

ix. Self-Sustainability

MTA understands the RIA grant program is a critical step to accessing financing for infrastructure needs. The MTA and partners have the financial capacity to manage the financing plans derived from this grant. As part of the RIA project implementation, a model of self-sustainability will be developed. MTA is committed to creating a financing pipeline to further develop and deliver the proposed projects for the state. The MARIA team will explore a combination of funding sources to ensure the pipeline of projects is self-sustainable. The services outlined in the above scope of work will help identify revenue-generating opportunities to support the final construction, operation, and maintenance of the services.

The following strategies will be evaluated to develop a self-sustaining set of accelerated and impactful projects:

Value Capture

High-frequency transit networks are proven assets that increase the value of adjacent real estate. This additional value can be captured in various ways, such as through increased property tax revenues in the area where the infrastructure is being developed or by creating a special tax district in the area immediately around the stations served by the new or expanded transit service. The anticipated increase in the assessed value of the surrounding properties can generate funding for these new projects through tax increment financing (TIF), where funding is leveraged by issuing bonds backed by a percentage of the increased tax revenues from the transit corridor or around the station.

Sponsorships

Another way for an agency to generate funds to develop and maintain transit services is to secure a corporate or institutional partnership for the naming rights of the newly expanded service. For example, in San Diego, CA, the Metropolitan Transit System and University of California, San Diego (UCSD) entered into a 30-year agreement for $30 million to rename one of the region's light rail lines that was extended to the UCSD campus in 2021. The UC San Diego Blue Line has multiple stations on campus, and the university continues to capitalize on this major national public transit investment by building and acquiring properties throughout the corridor that are now directly served by the light rail line. For projects considered by MARIA, sponsorship opportunities could occur with the numerous governmental agencies and universities within the vicinity of the facilities.

Private Development

The business model is grounded in the concept of developing TOD nodes with high-quality connections between them. The MTA will explore the options for private development and TOD projects that are eligible for significant federal funding in the form of low-interest TIFIA loans. The MARIA team will look to successful agencies from around the country that have leveraged TOD-related funding to build lasting public infrastructure with mutual benefits for the development industry.

Concessions

The additional infrastructure built as a part of the MARIA pipeline of projects will create opportunities for vendors to promote their brands and sell products. For the stations

and infrastructure proposed in the MARIA pipeline, many companies would be interested in leasing commercial space for retail and hospitality uses. The benefits of an improved transportation hub offer a similar opportunity to generate significant revenue through tenant space.

Fares

A small amount of revenue collected in the MARIA pipeline of projects would come from transit fares, but these are generally used to support the operations and maintenance of the system's services.

x. Risk

There is risk associated with a potential pipeline of nearly $11 billion in regional infrastructure projects. However, there is a proven market for rail services and facilities in Maryland, and the benefits with this scale of an improvement program of this scale will be transformative to the state. There are also risks related to various project phases, but risk mitigation is part of every project that the state undertakes, large or small.

xi. Alignment with Department Priorities

Safety

The pipeline of projects includes numerous safety benefits such as at-grade crossings, pedestrian bridges, and new platforms. MTA recognizes that the best transit experience is all about the individual and that no aspect of the journey is more important than safety. This unwavering attitude has resulted in MTA being consistently recognized as the safest transit agency among the top 13 agencies in the U.S. Each project will account for and incorporate enhanced safety measures and determine the impact on the traveling public. The projects will improve existing conditions with safety benefits.

Climate Change and Sustainability

The MDOT Transportation Resiliency Plan (TRIP) provides a guide for strategic investment in Maryland's critical infrastructure and proactively identifies actions to align adaptation and mitigation efforts throughout MDOT. The pipeline of projects will reduce greenhouse gas emissions by reducing single vehicle use.

The State has spent a significant amount of funding on weather-related disasters. The pipeline of projects will include an analysis of storm events and bring infrastructure not only to a State of Good Repair but also enhance resiliency through mitigation. The increasing damages and costs from weather-related disasters in Maryland can be seen in Table 3.

Time Period	Number of Billion-Dollar Disasters	Events per Year	Cost	Percent of Total Cost
1980s (1980–1989)	7	0.7	$1.0–$2.0 billion	11.2%
1990s (1990–1999)	13	1.3	$2.0–$5.0 billion	17.5%
2000s (2000–2009)	10	1.0	$2.0–$5.0 billion	25.9%
2010s (2010–2019)	27	2.7	$5.0–$10.0 billion	38.9%
Last 5 years (2017–2021)	19	3.8	$2.0–$5.0 billion	13.0%
Last 3 years (2019–2021)	11	3.7	$500 million–$1.0 billion	6.2%
Last Year (2021)	5	5.0	$250–$500 million	2.5%

Table 3: Damages and Costs from Weather-Related Disasters

The MARIA team will consider statewide resilience planning initiatives to ensure mitigation efforts are incorporated. The project planning will include:

- Improved community design and land-use planning
- Increased options to travel more efficiently
- Bicycle and Pedestrian Safety
- State Hazard Mitigation plans
- Accounting for travel demand, carpool parking, operational improvements, and economic impact.

Document	Published	Planning Timeframe
Maryland Transportation Plan	2024	2025-2050 (25 years)
Maryland Consolidated Transportation Program	2022	FY 2023–FY 2028 (6-year capital budget)
Maryland Statewide Transportation Improvement Program	2021	FY 2022–FY 2025 (4-year, fiscally constrained, prioritized projects)
State Report on Transportation	2023	2023 (AR, CTP, and MTP)
Attainment Report on Transportation System Performance	2023	2023
Bicycle and Pedestrian Master Plan	2024	2025-2050 (25 years)
Transportation Systems Management & Operations Plan	2018	2018
State Hazard Mitigation Plan	2021	N/A

FY = fiscal year

Table 4: MDOT Resilience Planning Documents and Timeframes

MDOT planning documents related to resilience initiatives and their timeframes can be seen in Table 4: MDOT Resilience Planning Documents and Timeframes. One way the MTA has advanced initiatives from resilience planning documents is through the Adaptation and Resiliency Toolbox (ARToolbox). The ARToolbox identifies vulnerable assets for each mode as well as potential adaptation and resiliency measures. One project that is applying measures from the ARToolbox is the Shot Tower Metro Station Flood Mitigation Feasibility Study. This study, supported by federal grant funding, identifies flood risk reduction alternatives at a conceptual engineering level, and serves as a model for future studies on Maryland rail assets.

Transit Oriented Development

MDOT works in partnership with state, local, and private partners to support Transit-Oriented Development (TOD) throughout Maryland. The TOD team has two areas of focus: joint development of State-owned land and support for local jurisdictions leading their own TOD.

MDOT has partnered with many other state agencies to develop an interactive site, the State TOD Hub, which is a springboard for local jurisdictions, planners, elected officials, non-profit organizations, educational institutions, real estate professionals and the general public interested in advancing TOD or TOD principles in their jurisdictions. MDOT actively promotes TOD as an approach to help increase transit ridership, support economic development, and maximize the efficient use of transportation infrastructure.

Local jurisdictions or multicounty agencies with land use and planning responsibility for a relevant area are eligible to apply for state Transit-Oriented Development (TOD) Designation. Aas shown in Figure 11, there are currently 14 state-designated TODs in Maryland.

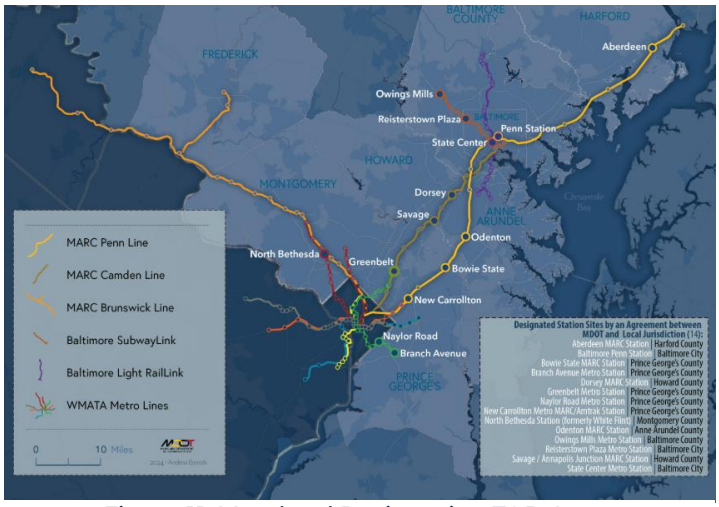

Figure 11: Maryland Designation TOD Areas

A key example of MDOT's TOD efforts is the Penn Line TOD Study which identified goals for TOD along the MARC Penn Line. In partnership with the Maryland Economic Development Corporation (MEDCO), MDOT launched a strategic plan for TOD around the MARC Penn Line stations. Specifically, the Bowie and Odenton Stations were identified as priority stations to pursue an increased focus on promoting TOD in Prince George's and Anne Arundel Counties. A Request for Qualifications (RFQ) is currently available for teams interested in developing a 12.85-acre parcel of state-owned land used for parking at the Odenton Station in Anne Arundel County. MDOT aims for the new Odenton Station development to be a dense, mixed-use development with a particular focus on housing.

With the improvements to the MARC Brunswick Line included in the MARIA Project Pipeline, MDOT is poised to utilize its TOD tools to provide technical assistance to advance TOD projects in rural stations of the Brunswick Line. Access improvements associated with TOD at MARC stations combined with the service improvements enabled by the MARIA projects can combine to make a significant positive impact to the unique challenges faced by rural areas.

Equity and Accessibility

The development of the MARIA Project Pipeline is guided by long rang planning documents and annual report mechanisms of the state that include equity measure to promote projects that expand access to underserved or disadvantaged communities, improve access to jobs, healthcare, and other critical destinations; and proactively address barriers to opportunity.

MDOT's new 2050 long-range transportation plan, the Playbook, includes equity as a guiding principle to ensure no one is left behind. It emphasizes the importance of

access to affordable and accessible transit for overburdened and underserved communities, particularly for individuals who rely on it as their primary means of travel.

For projects within the capital program, the 2024 Consolidated Transportation Program (CTP) annual attainment report includes equity performance measures such as access to transit and percentage of investments in underserved areas. The report also evaluates three equity-related toolkits, namely the Comprehensive Statewide Needs Assessment (CSNA), the Climate and Economic Justice Screening Tool (CEJST), and the Equitable Transportation Community (ETC) Explorer. The report conducts a detailed investigation into which performance measures are most critical and which performance measures are imperatively associated with equity-related issues.

By drawing from the long-range planning efforts of MDOT and MTA and upholding the standards of equity performance measurement included in the annual attainment report, the MARIA Project Pipeline will build on Maryland's continued efforts to develop more equitable transportation investments across the state.

Innovative Strategies

Innovative Technology

The MTA has a track record of incorporating innovative technology into capital projects as a way to improve safety, environmental sustainability, quality of life, and state of good repair. The agency will continue to include innovative technologies in the scopes of the rail projects advanced by MARIA and will use the grant funding from the Build America Bureau to prepare for innovative project delivery and financing mechanisms. Some examples of recent experience using innovative technologies on rail projects are listed below.

Safety: MTA is implementing a Wayside Track Intrusion System on the Baltimore Subway that will use Light Detection and Ranging (LiDAR) heads mounted under platforms to send radio alerts to the rail car mounted systems in the current and new rail cars alerting the operator immediately so that they may stop the train or collect evidence proving the train could not be stopped in time. MTA also has some Harsco Protran wayside alert systems at pedestrian crossings that notify pedestrians and hikers of an incoming train and to clear the area.

Environmental Sustainability: Within the Metro Subway system, the MTA installed a Wayside Energy Storage System (WESS) at the Rogers Avenue Station that stores energy from braking incoming trains that can then be used to help outbound trains accelerate. MTA has moved to expand the use of WESS in the Metro Subway station through the ongoing Mondawmin Transit Hub project that is currently in design.

Quality of Life: Within the Light Rail system, the MTA has installed Transit-Signal Priority (TSP) equipment and infrastructure to improve the efficient and safe movement of light rail vehicles within a mixed traffic environment. The MTA has previously implemented TSP within the bus system, and this technology was recently deployed along the Howard Street corridor through downtown Baltimore. This project included in-depth coordination with the local jurisdiction responsible for the signals and signal systems. Through active management of this technology, the quality of transit service and safe traffic operations are both improved.

State of Good Repair (SGR): MTA implemented an asset management system that collects condition-based data for each system to help prioritize the systems and projects most in need of SGR. This used a version of TERMlite with MTA inputs for five major categories used to evaluate and grade projects for recommendations to be awarded for capital projects.

Innovative Project Delivery

As demonstrated by the rigorous business case analysis leading to the procurement of the Purple Line Light Rail project as a P3, MTA has experience with analyzing innovative project delivery methods to design and construct projects. Based on a qualitative and quantitative assessment of the project goals and risks presented by the proposed pipeline of projects weighed against the opportunities and considerations of each available delivery method, MTA may, for example, identify progressive design-build (PDB) as the most viable delivery method for one or more of the projects.

In an ideal scenario, MTA would procure and construct certain of the more complex projects in multiple construction phases. When possible, MTA would utilize progressive design-build (PDB) to allow for this flexibility. After procuring a PDB entity, during preconstruction phase, MTA and the PDB entity would collaboratively advance design and, at major design milestones, develop estimates and construction schedules for the project. This would give MTA (i) cost and schedule certainty early in the design process, (ii) insight into the required cash flow for the project, and (iii) the opportunity to make design decisions and increase or decrease scope to meet the overall project budget.

Additional benefits of the PDB delivery method for suitable projects include:

- Having one lead designer and lead contractor for the entire project will ensure consistency across segments (messaging, signage, and user expectancy), resulting in a safer and more user-friendly asset.
- MTA retains design decision-making responsibility; however, the PDB entity would own the design and constructability risk of the project.

During the preconstruction phase of the PDB, MTA and the PDB entity would explore a range of funding options including soliciting philanthropic stakeholders willing to enter into public-private partnership agreements to sponsor aspects of the pipeline of projects. As the partnerships materialize, more funding will be made available, permitting additional sections of the projects to advance through the PDB process.

Innovative Project Financing

Maryland has a strong history of implementing innovative financing for vital infrastructure projects, including the use of Public-Private Partnerships (P3) to leverage the expertise and efficiencies of the private sector while prioritizing the interests and fiduciary responsibility of the state to mitigate risk for large transportation projects such as the following:

Inter-County Connector (ICC): MDOT issued two tranches of Grant Anticipation Revenue Vehicles (GARVEEs) and secured TIFIA financing as part of the plan of finance for the completed and operational ICC design-build project.

Seagirt Marine Terminal: A 50-year P3 agreement was signed between the Maryland Port Administration and Ports America Chesapeake, LLC in November 2009. Private capital investments under this agreement have resulted in significant expansion of port capacity, including construction of a 50-foot deep container berth and installation of four super-post-Panamax cranes, completed in 2014.

I-95 Travel Plazas: A 35-year P3 agreement was signed between MDTA and Areas USA in March 2012. Under this agreement, the private partner is responsible for the redevelopment, including financing, and longterm operations and maintenance of the two I-95 Travel Plazas. Using a phased replacement approach, the new Maryland House opened to the public on January 16, 2014, and the new Chesapeake House opened to the public on August 5, 2014.

State of Good Repair

As laid out in MTA's most recent draft of the Maryland Statewide Transit Plan, investing in state of good repair is recommended as part of two of the report's strategies for success: "Ensure a safe and healthy transit environment" and "Invest wisely and sustainably." The following are examples of how potential projects identified for MARIA support will keep MTA's transit systems in a state of good repair.

MARC Brunswick Station Improvement Project: MTA's 10-Year Capital Needs Inventory (CNI) & Prioritization document from 2022 and asset management data indicate the MARC Brunswick station as an asset in imminent need of repair and replacement. Particularly, the MARC Brunswick station's platform and shelter structures need replacement. As part of the Improvement Project's design of a new Center Island Platform, the current station platform and shelters will be improved as well, returning the station to a state of good repair.

Light Rail Transit Modernization (LRTM) Program: MTA's Light RailLink Cornerstone Plan emphasizes the importance of keeping the Light Rail's assets in a state of good repair. The LRTM Program includes a full light rail vehicle fleet overhaul to maintain a state of good repair. Additional improvements will be made to stations and tracks to ensure compatibility with the new vehicles, and overall safety of the Light Rail system. Additionally, MTA's most recent 10-Year CNI document identifies both the Light Rail vehicles and stations as assets in need of repair. The CNI also identifies grade crossing replacements and catenary system rehabilitation as required investments that may also be incorporated into the project.

Penn-Camden Connector (PCC): To maintain a state of good repair for MARC trains, MTA must relocate six MARC trains in storage at Baltimore Penn Station as it is redesigned by Amtrak. Recently, two new MARC storage tracks were developed after a 2020 Federal-State Partnership for State of Good Repair grant. This will provide storage for two of the four MARC trains. To solve this problem, the PCC Project proposes access to an existing rail yard that will be repurposed into a storage and layover facility using the proposed connecting track. Relocating the MARC trainset storage facility will enable Amtrak to advance its plans for the redevelopments of Penn Station and Union Station. While the stations are redeveloped to provide further intercity connectivity and access to opportunities, the PCC Project will simultaneously ensure a state of good repair for all MARC trains in storage.