Baltimore Regional Transportation Board

BALTIMORE REGION TRANSPORTATION IMPROVEMENT PROGRAM 2022-2025

DEVELOPED BY THE BALTIMORE METROPOLITAN PLANNING ORGANIZATION

CITY OF ANNAPOLIS ◆ ANNE ARUNDEL COUNTY ◆ BALTIMORE CITY ◆ BALTIMORE COUNTY

CARROLL COUNTY ◆ HARFORD COUNTY ◆ HOWARD COUNTY ◆ QUEEN ANNE'S COUNTY ◆ ANNAPOLIS TRANSIT

MD DEPARTMENT OF TRANSPORTATION ◆ MD DEPARTMENT OF THE ENVIRONMENT ◆ MD DEPARTMENT OF PLANNING ◆ MD TRANSIT ADMINISTRATION

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https://www.baltometro.org/sites/default/files/bmc_documents/general/transportation/tip/22-25/22-25TIP.pdf

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I. INTRODUCTION

A. Summary

The Baltimore Region Transportation Improvement Program (TIP) documents the anticipated timing, cost, and rationale for federally-funded transportation improvements to be made in the Baltimore region[1] over the next four years. It is a program of specific projects, not a plan. In accordance with federal guidelines, the TIP is a translation of recommendations from the long-range transportation plan (LRTP), *Maximize2045*, for the Baltimore region into a short-term program of improvements. This includes specific capacity improvements that have been identified in the LRTP, as well as system preservation projects and operational initiatives that are supported in the LRTP but have not been previously detailed. As such, the TIP ensures consistency between LRTP recommendations and project implementation in the region.

[1] As shown in Exhibit I-1, the Baltimore region is composed of Baltimore City, Annapolis and Anne Arundel, Baltimore, Carroll, Harford, Howard and Queen Anne's counties. As a result of Census 2010, there are three federally recognized urbanized areas in the region. One includes the City of Baltimore and portions of Anne Arundel, Baltimore, Carroll, Howard and Queen Anne's County. The second includes Westminster in Carroll County. The third is Aberdeen – Havre de Grace – Bel Air in Harford County and portions of Cecil County.

The TIP also serves as a multi-modal listing of transportation projects in the region for which federal funding requests are anticipated between fiscal years 2022-2025.[2]

Chapter II provides a summary of the key federal requirements for the TIP, followed by several sections detailing the requirements in key areas. Chapter III describes the relationship between the TIP and other transportation plans and programs in the region, its fulfillment of federal requirements, and its regional review function. Chapter IV explains the terms and symbols used in the project listings. Chapter V presents the financial plan supporting the projects in the four year program. It also details the amount and source of federal funds to be requested for the coming fiscal year, FY 2022.

Chapter VI includes environmental justice maps and detailed project listings. The detailed project listings include all federally funded and regionally significant projects. The projects are grouped first according to the local jurisdiction or state agency responsible for their implementation. Within those sections

[2] The Baltimore Region TIP follows the Maryland state fiscal year: July 1 to June 30

they are then grouped by category in the following order: commuter rail capacity, commuter rail preservation, enhancement program, environmental/safety, emission reduction strategy, highway capacity, highway preservation, transit capacity, transit preservation, ports, and miscellaneous. A timetable for anticipated federal funding requests is presented for each project.

The 2022-2025 TIP programs a total of $4.04 billion. Federal funds account for $2.45 billion of this total, with matching funds accounting for the remaining $1.59 billion. In almost all cases, matching funds are provided by the local or state agency sponsoring the project. Rare circumstances where matching funds are provided by a private source or another local or state agency are noted in the project description in Chapter VI.

Exhibit I-1: The Baltimore Region

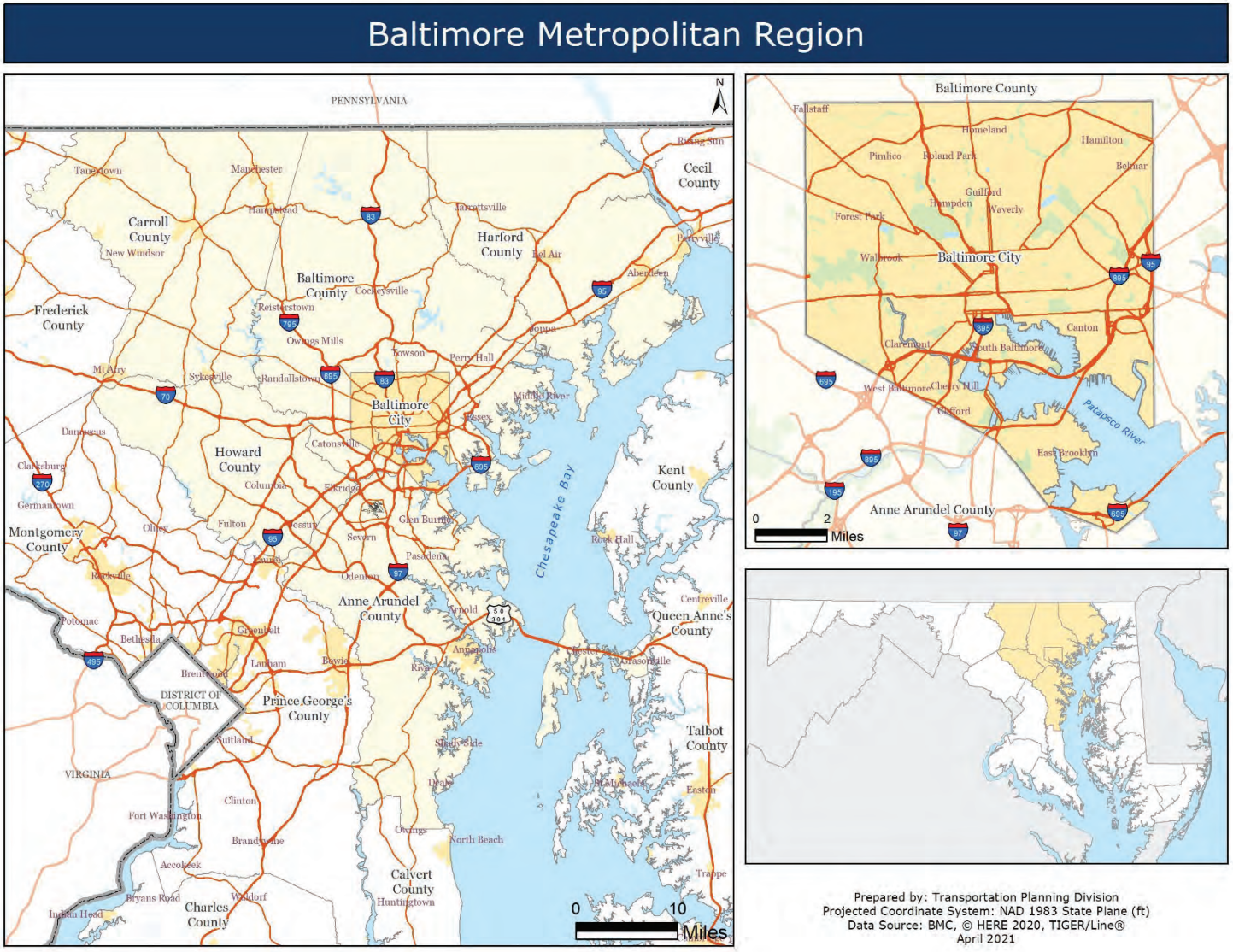
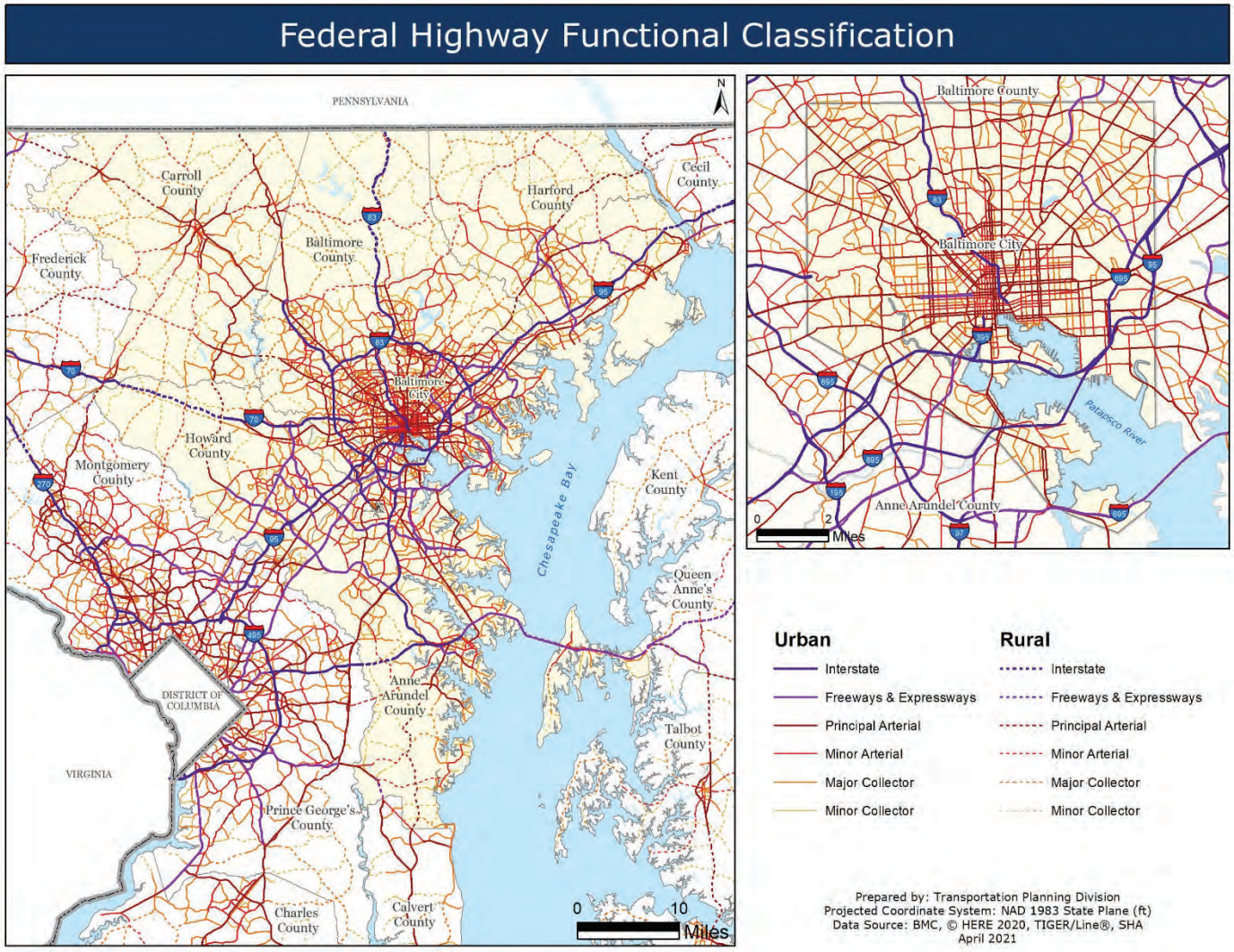
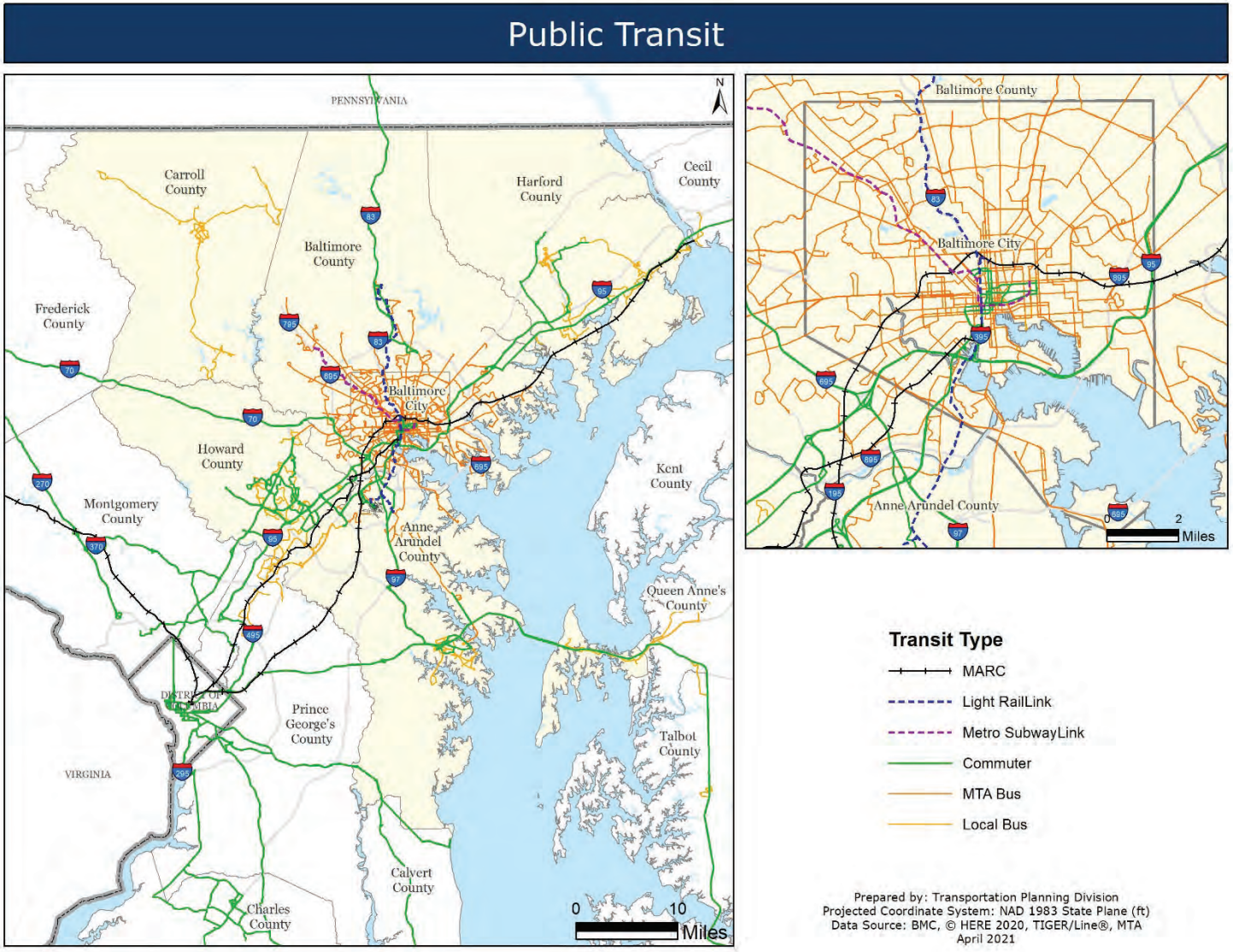


Exhibit I-2: The Baltimore Region Federal Highway Functional Classification*



*See page 62 for a description of Federal Highway Functional Classifications

Exhibit I-3: The Baltimore Region – Transit



B. Metropolitan Planning Organization Self-Certification

At the time the metropolitan TIP, and the projects requesting funds in the coming fiscal year, are endorsed for funding out of the U. S. Department of Transportation (DOT), a Metropolitan Planning Organization (MPO) is required to certify that projects selected through the transportation planning process conform with all applicable federal laws and regulations. The Baltimore Regional Transportation Board (BRTB), in its capacity as the MPO for the Baltimore region, certifies via Resolution #22-2 that the transportation planning process is conducted in a manner that complies with the requirements of 23 USC 134, 49 USC 5303, 23 CFR Part 450 and 49 CFR Part 613, and Sections 174 and 176(c) and (d) of the Clean Air Act. The certification requirement directs members of the BRTB to review the planning process that has been under way and ascertain that the requirements are being met. The review serves to maintain focus on essential activities. Members of the BRTB are listed in Appendix A of this document.

The BRTB's commitment to comply with applicable federal transportation planning requirements is evidenced by the following: ❶ the BRTB has a continuing, cooperative and comprehensive (3-C) transportation planning process that results in plans and programs consistent with the general land use and master plans of the local jurisdictions in the urbanized area; ❷ the BRTB has adopted a public participation process that fulfills the requirements and intent of public participation and outreach as defined in the Metropolitan Planning Regulations; ❸ the BRTB adopted a financially constrained long-range transportation plan, *Maximize2045*, for the Baltimore region consistent with the metropolitan planning factors in the Fixing America's Surface Transportation (FAST) Act; ❹ the BRTB maintains a Congestion Management Process (CMP); ❺ the BRTB has determined that conformity (8-hour ozone) of *Maximize2045* and the 2022-2025 TIP for the Baltimore region has been conducted under the U.S. Environmental Protection Agency's (EPA's) final rule as amended; and ❻ the BRTB adheres to the federal Disadvantaged Business Enterprises (DBE) requirements set forth in 49 CFR Part 26.

C. Consistency with Maximize2045

In an effort to plan for future regional transportation needs and to comply with the intention of the FAST Act and the Clean Air Act Amendments of 1990 (CAAA), the BRTB endorsed *Maximize2045: A Performance-Based Transportation Plan*, the long-range transportation plan, in July 2019. The factors that guided development of *Maximize2045* are listed in the Metropolitan Planning Regulations effective May 27, 2016. These regulations continue and strengthen the emphasis on performance-based planning and programming.

Maximize2045 includes a set of overarching regional goals, specific implementation strategies that support these goals, and a series of performance measures and targets. These measures and targets are consistent with the performance-based approach to planning and programming set forth in MAP-21, the FAST Act, and corresponding regulations. These measures and targets help the BRTB and operating agencies gauge progress relative to regional goals and strategies.

The BRTB has developed and adopted performance measures for transit asset management, transit safety, roadway safety, roadway and bridge conditions, and system performance. Target selection was coordinated with the State and public transportation providers to ensure consistency. All required measures and targets were adopted in compliance with federal due dates. The measures and targets will guide the Maryland Department of Transportation and metropolitan planning organizations in carrying out the requirements of the applicable FHWA and FTA laws and regulations.

Section II.G summarizes the performance measures and targets as well as the anticipated impact of investments in the TIP on these performance measures and targets. Appendix B includes a table connecting TIP projects to *Maximize2045* goals and performance measures.

In addition to performance measures and targets, *Maximize2045* reports on forecasted regional growth in population, households and employment to the year 2045 and the projected travel demand resulting from this forecasted growth. It demonstrates how the existing and committed transportation network will likely struggle to accommodate future travel demand based on projected increases in congested VMT and vehicle hours of delay. The region may need to apply additional transportation demand management strategies to meet future performance targets related to regional mobility.

To address the projected demands on the transportation system, *Maximize2045* includes a range of projects through the year 2045. It outlines a multimodal array of transportation improvements along with the requisite funding scenario needed to support the program. Non-motorized transportation alternatives are included, as well as intermodal and transportation demand management strategies. The transportation demand management strategies are particularly important to complement the infrastructure improvements and ensure the region meets the conformity requirements for transportation plans and programs by way of national air quality goals and objectives.

The capacity projects in the 2022-2025 TIP "flow" from *Maximize2045*, resulting in a prioritized subset of projects for implementation. In this way, long-range policy recommendations are translated into short-range transportation improvements.

II. FEDERAL REQUIREMENTS AND REGIONAL REVIEW FUNCTION

A. Requirements of the Fixing America's Surface Transportation (FAST) Act

The Fixing America's Surface Transportation (FAST) Act was signed into law on December 4, 2015. Below is a discussion of key federal requirements that are in place regarding development of the TIP. Requirements of the FAST Act include:

• Prioritized list of financially constrained improvements: The BRTB, in cooperation with state and local agencies and transit operators, have developed a prioritized and fiscally constrained TIP. Fiscal constraint means that the funds programmed in the 2022-2025 TIP are reasonably expected to be available over the timeframe covered by the TIP. Projects included in the 2022-2025 TIP have been cooperatively determined by members of the BRTB. The project selection process considered air quality implications and regional mobility enhancement prior to inclusion in the final TIP document.

Priority is reflected by the year in which a project is shown. Priorities and financial analysis are provided for all four years of the TIP. Financial reasonableness is evaluated on three fronts: ❶ MDOT ensures that federal funding requests during the TIP planning process are reasonable for our region; ❷ MDOT provides documentation of the state's capacity to meet the match requirements associated with state-sponsored projects in the TIP; and ❸ Local governments also provide documentation of the same financial reasonableness requirements to match the federal funds requested for locally sponsored projects.

• Flexing Funds: The TIP is required to take full advantage of the increased flexibility of Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) capital funds. MDOT provides a "statement of concurrence" that consideration of this provision (flexing funds) has been utilized in the development of all state initiatives. Documentation of project prioritization, financial reasonableness and flexible funding is included in Appendix B.

• Financial Plan: FAST requires that the TIP include a financial plan that demonstrates that the fiscal resources required to construct projects proposed in the TIP are reasonably expected to be available within the timeframe specified. The financial plan in Chapter V demonstrates that the region, through public and private funding, is reasonably able to generate the projected resources needed to carry out the projects in the TIP.

• Congestion Management Process: FAST states that for "transportation management areas classified as nonattainment for ozone or carbon monoxide. . . , Federal funds may not be advanced in such area for any highway project that will result in a significant increase in the carrying capacity for single-occupant vehicles unless the project is addressed through a congestion management process (CMP)". CMP guidelines were adopted by the BRTB in October, 1997. As potential capacity projects enter the state planning process, the BRTB is invited to participate in interagency discussions. This process allows the BRTB to offer recommendations during the process to address congestion prior to building additional lane capacity. At three stages in this interagency process the BRTB adopts a resolution approving the analysis to date. The BRTB also conducts ongoing data collection and monitoring to assess conditions and ascertain the effectiveness of a range of strategies to relieve congestion.

• Public Involvement: The public must have an opportunity to review and comment on the TIP in the early stages of preparation with at least one public meeting. The BRTB updated formal public participation procedures governing metropolitan transportation planning activities in June 2018. These guidelines reaffirmed a framework for public participation and information dissemination.

The BRTB offered members of the public, affected public agencies, private providers of transportation and other interested parties reasonable opportunities to comment on a draft list of projects.

The draft TIP was made available on the Baltimore Metropolitan Council (BMC) website. A public meeting was held for the public to comment on the draft TIP. This meeting was held virtually due to public health concerns presented by the Coronavirus (COVID-19). Opportunities to comment on the draft TIP were advertised on the BMC website and on BMC social media accounts, with outreach work undertaken by public involvement staff. In addition, the public was able to address the BRTB at its June and July 2021 meetings. Written comments by mail, email, fax or social media were accepted during the public review period. In addition, members of the public could submit comments directly via an interactive TIP project map. A summary of all comments received, both verbal and written, BRTB responses, and the public participation notices is included in Appendix G of the final TIP document.

The public participation process for the TIP also meets the FTA public participation requirements for the MDOT Maryland Transit Administration's (MDOT MTA) program of projects. MDOT MTA, in lieu of a separate mandated public comment period for federal funding assistance under 49 USC Sections 5307, 5310, and 5311 has exercised its option to use the procedures of the BRTB's public involvement process for the 2022-2025 TIP to satisfy the public participation requirements associated with development of the MDOT MTA Program of Projects (POP).

- Listing of Obligated Projects: MPO's must publish an annual listing of projects for which federal funds have been obligated in the preceding year. The list must be consistent with projects identified in the TIP, with the intent of improving the transparency of transportation spending decisions. The FY 2020 obligated listing includes all federal funds obligated in the Baltimore region from July 1, 2019 – June 30, 2020.[3]
- Performance-Based Planning and Programming (PBPP): The U.S. DOT published updated Metropolitan Planning Regulations on May 27, 2016 following the enactment of the FAST Act. These updated regulations continue and strengthen the emphasis on PBPP. The intent of PBPP is to aid MPOs in gauging progress relative to regionally established goals, strategies, and performance measures and targets. Federal rulemaking requires MPOs to adopt a series of 25 performance measures and targets and to link investment priorities in the TIP and LRTP to the achievement of these performance measures and targets. Section II.G provides further details on PBPP.
- TIP Changes: The project schedules and funding breakdowns for projects in the TIP represent the best estimates by project sponsors at the time the TIP is developed. However, project schedules and funding can change. As a result, the TIP is frequently updated throughout the year through the TIP change process. There are two types of TIP changes. TIP amendments involve major changes to a project such as the addition or deletion of a project or a major change in project cost, timeline, or scope. Administrative modifications

[3] The full obligated listing is available here: https://www.baltometro.org/sites/default/files/bmc_documents/general/transportation/tip/20-23/2020_FederalAidObligations.pdf

involve minor revisions to project costs, fund sources or project timelines.

The BRTB Public Participation Plan[4] details procedures for TIP amendments and administrative modifications. All amendments are presented to the BRTB Technical Committee and the BRTB for consideration and approval. In addition, any project that requires a new regional emissions analysis, such as roadway or transit capacity expansions, automatically triggers a 30-day public review and public meeting. Administrative modifications are reviewed and approved by the BRTB Executive Committee.

Appendix F lists all amendments and administrative modifications to the previous TIP, the 2021-2024 TIP.

[4] The BRTB Public Participation Plan is available here: https://baltometro.org/sites/default/files/bmc_documents/general/transportation/advisory/PPP2018.pdf

B. Environmental Justice

Environmental Justice (EJ) seeks to ensure that the benefits and burdens of transportation investments are shared as equitably as possible among all affected communities. Specifically, EJ considers whether low-income and minority populations bear disproportionate impacts resulting from governmental decisions. Historically, EJ was borne out of civil rights and environmental complaints from low-income and minority communities. Concerns were raised, showing that these communities may suffer disproportionately from exposure to toxic chemicals and the siting of industrial plants and waste facilities.

In February 1994, President Clinton signed Executive Order 12898 entitled *Federal Action to Address Environmental Justice in Minority and Low-Income Populations*. In 1997, the U.S. Department of Transportation (DOT) issued an "Order to Address Environmental Justice in Minority Populations and Low-income Populations."

The DOT Order directs consideration of two groups: low-income persons and minorities. Low-income is defined as a person whose household income is at or below the U.S. Department of Health and Human Services poverty guidelines. Minorities are defined as a person belonging to any of the following groups:

- Person of origin in any of the black racial groups of Africa;
- Person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin;
- Person having origins in any of the original peoples of the Far East, Southeast Asia, Indian subcontinent, or Pacific Islands; or
- Person having origins in any of the original people of North America (American Indian, Alaskan Native) and who maintains cultural identification through tribal affiliation or community recognition.

The DOT Order applies to all policies, programs and other activities undertaken, funded or approved by the DOT, including metropolitan planning. There are three fundamental DOT environmental justice principles:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.

- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

Metropolitan planning organizations (MPOs) are responsible for assessing the benefits and burdens of transportation system investments for different socio-economic groups. This includes both a data collection effort and engagement of minority and low-income populations in public involvement activities.

EJ Populations in the Baltimore Region

Low-income Populations

As stated previously, low-income is defined as persons whose household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines. The primary source of data on low-income persons is the Census Bureau's American Community Survey (ACS). The Census Bureau uses a set of income thresholds that vary by household size and composition to determine poverty. If a household's total income is less than the threshold, then that household and every individual in it is considered to be in poverty. For example, the 2020 threshold for a four-person household with two dependents is $26,246. The HHS poverty guidelines are a simplified version of the poverty thresholds utilized by the Census Bureau.

While low-income is defined as persons living at or below the poverty line, the BRTB utilizes households in poverty to identify low-income populations due to data constraints. EJ analysis for the LRTP relies on BMC's travel demand model to predict travel times and distances for persons living in the Baltimore region. The ACS does not provide poverty data for individuals at the level of granularity required by the travel demand model, but does for households in poverty. Households in poverty proves to be a suitable proxy for individuals living in poverty as the data yields similar results for the region as a whole. According to the ACS, 9.9% of households in the Baltimore region fall below the poverty line compared to 10.1% of individuals.

Table 1 summarizes low-income households by jurisdiction. Households at or below the poverty line are not evenly distributed throughout the region, ranging from 5.0% of

households in Howard County to 20.0% of households in Baltimore City. In total, 103,674 out of the 1,049,909 households in the Baltimore region, or 9.9%, have household incomes at or below the poverty line.

Table 1. Low-Income Households by Jurisdiction

Jurisdiction	Total Households	At or Below 100% of Poverty Line	
		Households	Share
Anne Arundel	209,814	11,515	5.5%
Baltimore City	239,116	47,709	20.0%
Baltimore Co	313,519	27,182	8.7%
Carroll	60,758	3,350	5.5%
Harford	93,955	7,099	7.6%
Howard	114,170	5,706	5.0%
Queen Anne's	18,577	1,113	6.0%
BRTB Region Total	**1,049,909**	**103,674**	**9.9%**

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates (Table B17017)

Minority Populations

The ACS also serves as the primary data source for identifying minority populations. Minorities include individuals who are members of several population groups including Hispanic persons and non-Hispanic persons who are Black, American Indian or Alaskan Native, and Asian or Pacific Islander. Non-minorities are defined as those that are both white and non-Hispanic.

Table 2 summarizes minority individuals by jurisdiction. As with low-income populations, minorities are not evenly distributed throughout the region. According to the latest 5-year estimates from the ACS, the share of minorities in BRTB jurisdictions ranges from 11.0% in Carroll County to 72.5% in Baltimore City. In total, minorities make up 43.5% of the Baltimore region population while white, non-Hispanics make up the remaining 56.5%. Exhibit II-1 at the end of this section summarizes minority individuals by Hispanic or Latino origin and race.

Table 2. Minorities by Jurisdiction

Jurisdiction	Minority Population	White, non Hispanic Population	Minority Share	White, non Hispanic Share
Anne Arundel	181,525	389,750	31.8%	68.2%
Baltimore City	441,602	167,430	72.5%	27.5%
Baltimore Co	353,779	474,239	42.7%	57.3%
Carroll	18,366	149,333	11.0%	89.0%
Harford	60,329	191,893	23.9%	76.1%
Howard	152,993	165,862	48.0%	52.0%
Queen Anne's	6,687	42,945	13.5%	86.5%
BRTB Region Total	**1,215,281**	**1,581,452**	**43.5%**	**56.5%**

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates (Table B03002)

Mapping EJ Populations in the Baltimore Region

The BRTB uses Transportation Analysis Zones (TAZ) as a basis for identifying EJ areas. TAZs are a basic unit of geography used to predict travel behavior in the BRTB's travel demand model. They are constructed using census block information and are smaller than census tracts. Having established that TAZs will be the geographic unit of analysis, we need a way to identify EJ and non-EJ TAZs. This is done through the use of a regional threshold. A TAZ is identified as an EJ area if it has a concentration of households living in poverty or minorities greater than their respective regional averages.

The percentage of households with incomes at or below the poverty line in the Baltimore region is 9.9%. Thus, TAZs with a concentration of households in poverty greater than 9.9% are considered low-income TAZs for EJ purposes. Similarly, TAZs with a concentration of minorities greater than the regional average of 43.5% are considered minority TAZs for EJ purposes. Exhibits II-2 and II-3 show household poverty and minority populations, respectively, by TAZ. Exhibit II-4 shows all EJ TAZs, breaking EJ TAZs into those exceeding the regional average for households in poverty, those exceeding the regional average for minority concentration, and those exceeding both regional averages.

Additional EJ maps are available in Section VI.A: Project and Environmental Justice Maps by Jurisdiction. These maps show the locations (by jurisdiction) of specific TIP projects in relation to EJ TAZs. When these and other transportation projects enter project planning, consideration of EJ is undertaken. These studies are conducted by the appropriate state agency (e.g. MDOT SHA, etc.) or a local jurisdiction during the project planning phase. Opportunities for public participation are central to these efforts.

The LRTP, *Maximize2045*, includes an extensive environmental justice analysis. BMC staff utilized several measures to compare the effects on EJ and non-EJ TAZs of projects in the preferred alternative of *Maximize2045*, including all nonexempt projects in the TIP. These measures include accessibility to jobs and shopping, travel times for commuting and for other purposes, and proximity to key destinations such as supermarkets and hospitals. The BRTB continues to evaluate methods used by other MPOs as well as guidance issued by FHWA for additional environmental justice analysis of the TIP.

Exhibit II-1: BRTB Region Minority Populations by Race and Hispanic or Latino Origin

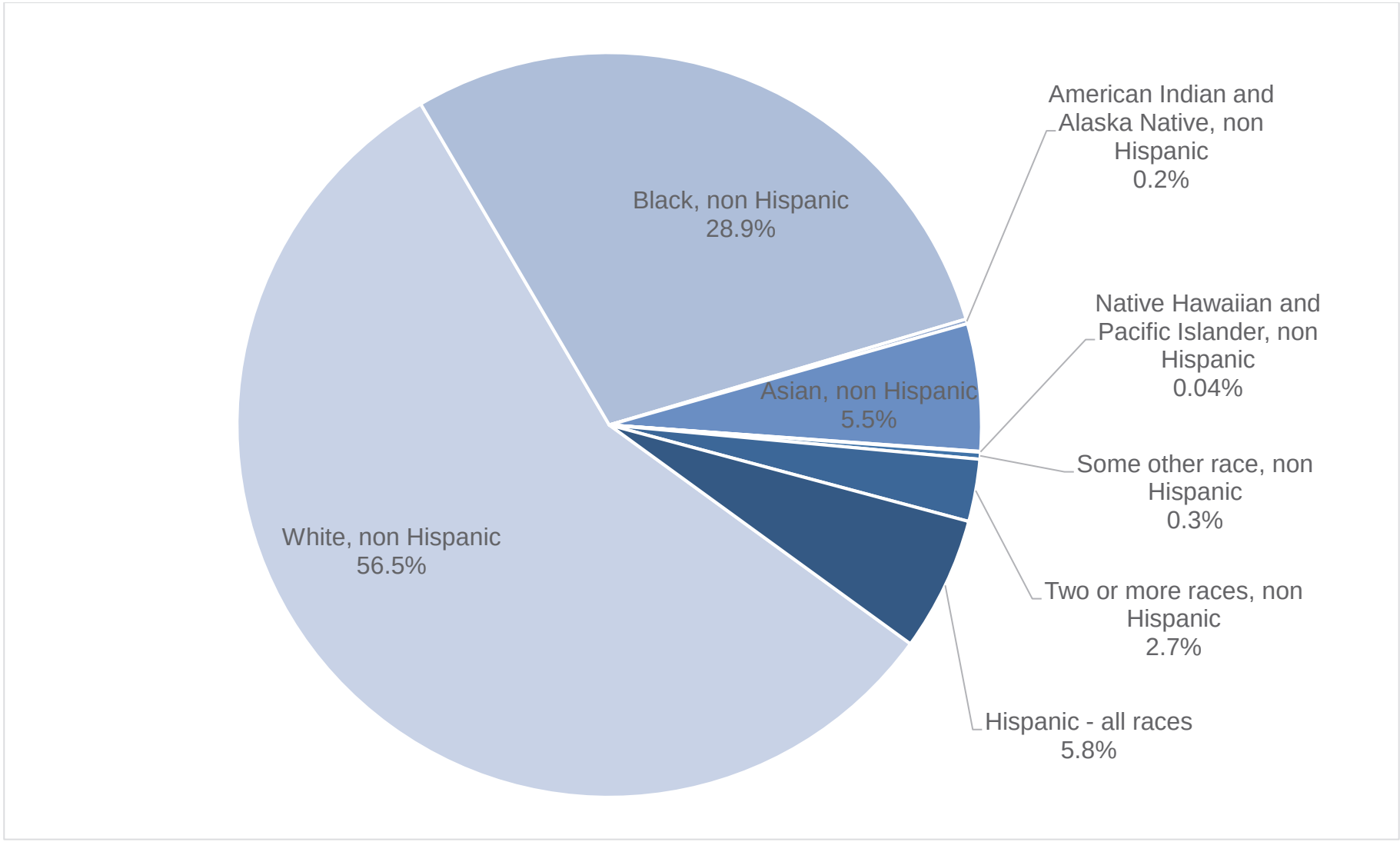


Exhibit II-2: Household Poverty by TAZ

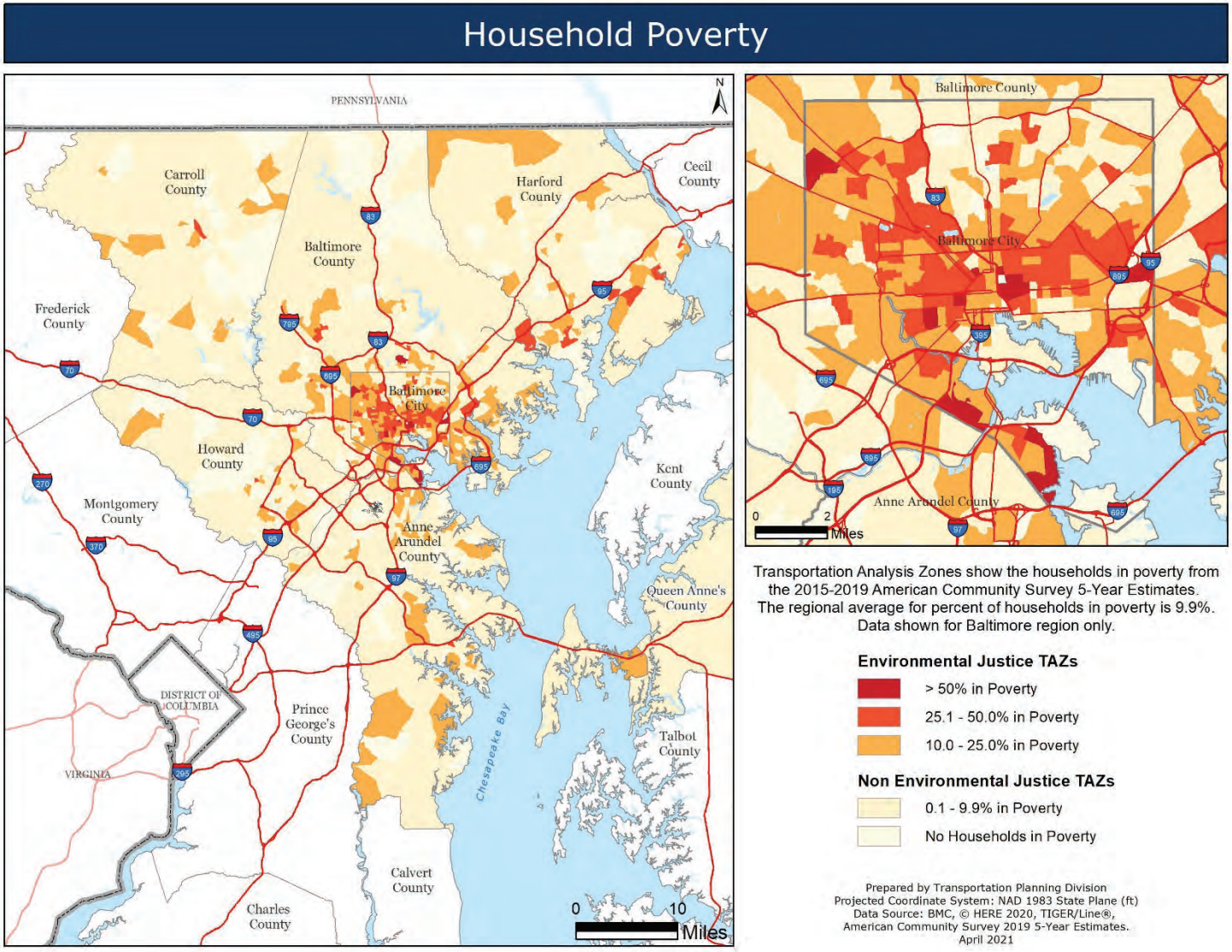


Exhibit II-3: Minority Population by TAZ

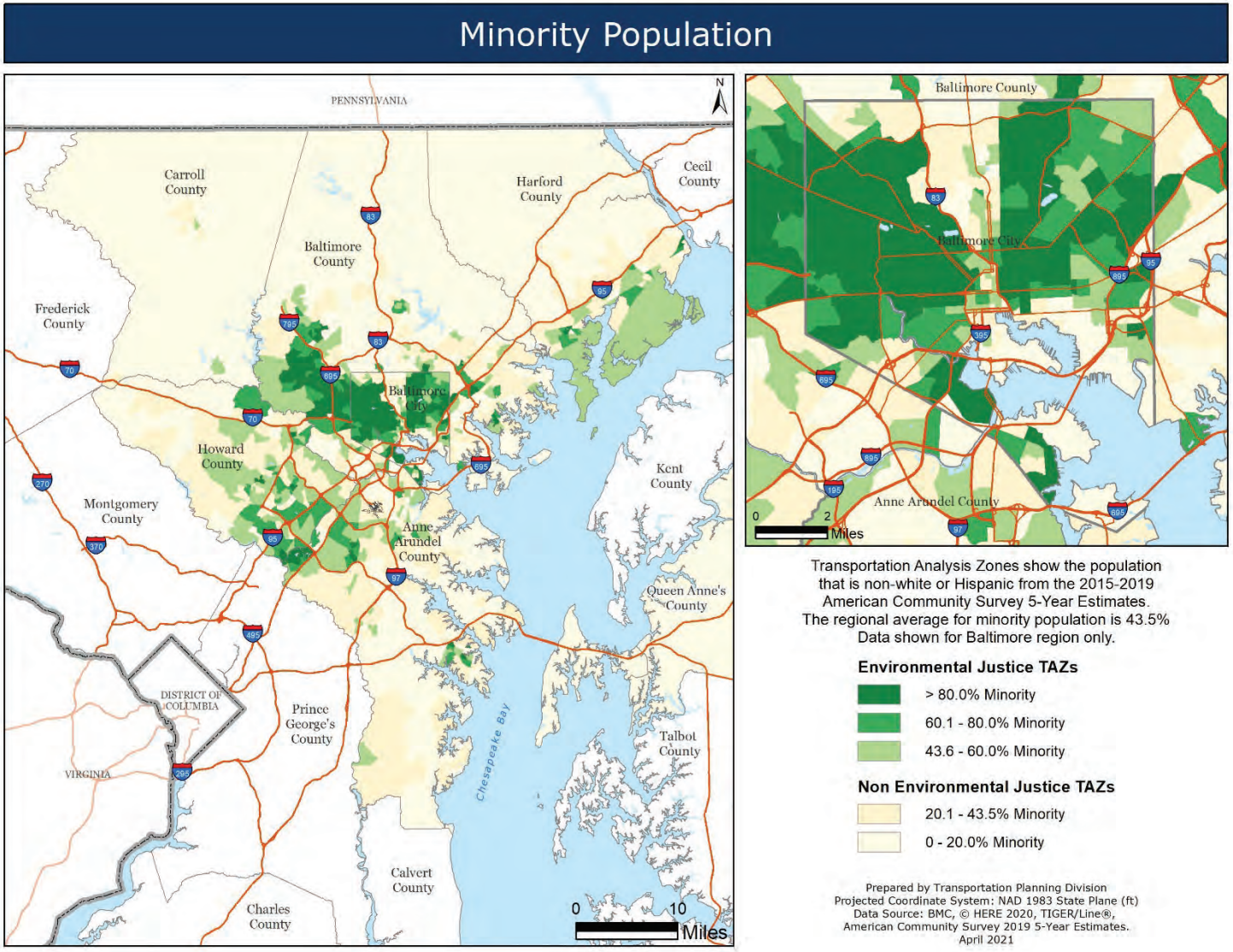
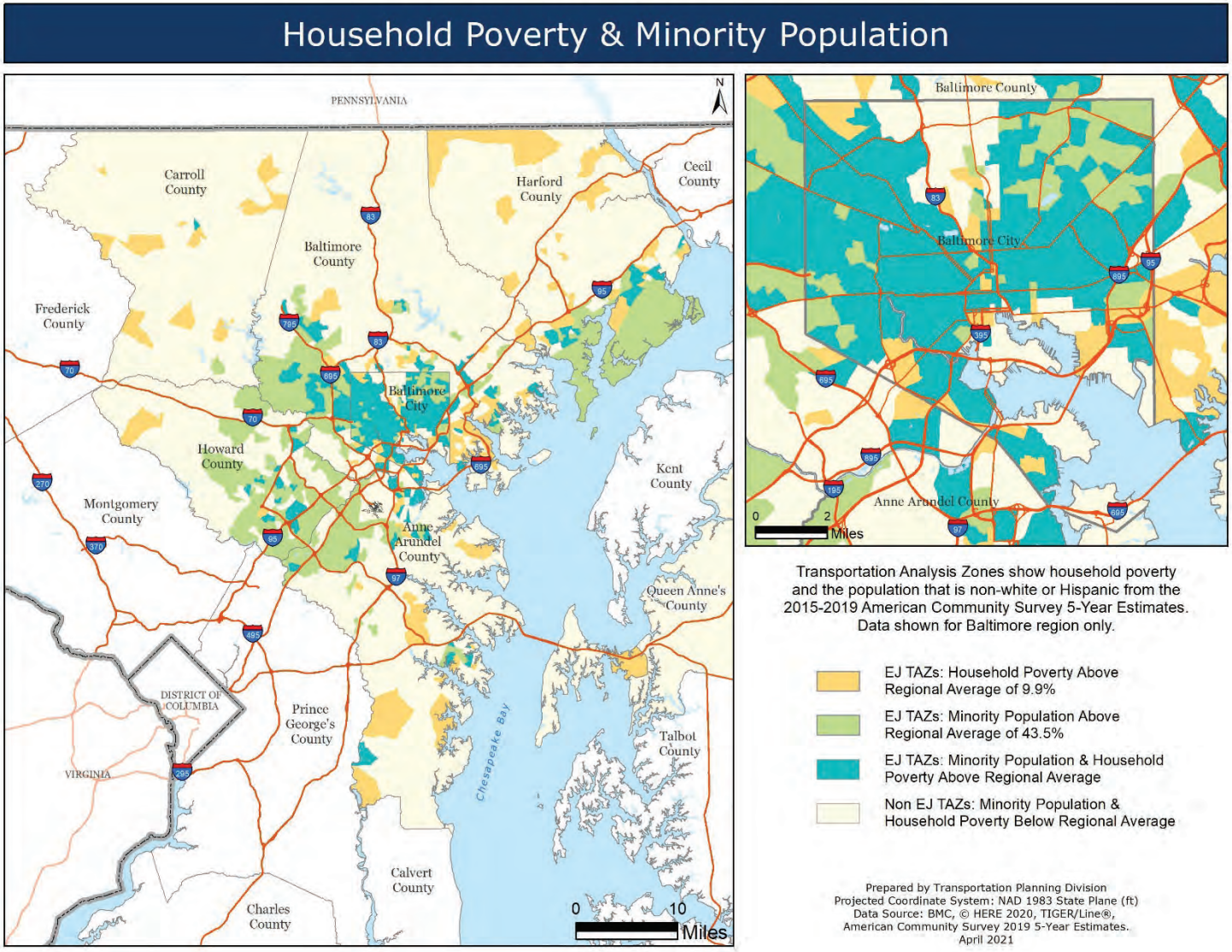


Exhibit II-4: Environmental Justice TAZs by Type



C. Coordinating Human Service Transportation

The FAST Act continues to support transportation initiatives for elderly and disabled populations through the FTA Section 5310 Capital Grant Program and low-income populations through the eligibility of job access and reverse commute projects under FTA's Urbanized Area Formula Grants (Section 5307) and Formula Grants for Rural Areas (Section 5311) programs. The MDOT Maryland Transit Administration (MDOT MTA) is the administrator for all three programs, and consults with the BRTB on program implementation.

Grant recipients must certify that projects funded through these programs "are included in a locally developed, coordinated public transit-human services transportation plan". The coordinated plan identifies the transportation needs of individuals with disabilities, older adults, and people with low incomes; provides strategies for meeting those local needs; and prioritizes transportation services for funding and implementation. The BRTB takes the lead, with assistance from MDOT MTA, for development of the Baltimore Region Coordinated Public Transit-Human Services Transportation Plan. MDOT MTA and the BRTB last updated the Baltimore Region Coordinated Transportation Plan in December 2019.

The Maryland Job Access Reverse Commute Program (MD-JARC) was passed by the General Assembly in 2018.

Modeled after the former FTA grant program of the same name, MD-JARC is designed to connect target populations with employment areas that have experienced significant growth in employment opportunities, by funding transportation services. Target populations reside in low-income areas, have limited or no access to a personal vehicle, and have limited access to fixed route transit service. Up to $400,000 each year will be available for grants, with 70 percent of the funds for use in urbanized areas and 30 percent for rural areas. The minimum request is $10,000 and must be matched by a 25% local contribution.

Sample projects include 1) Extension of service hours on local fixed route systems, 2) Vanpool services, 3) Employer-provided transportation services, and 4) Demand Response / Deviated Fixed Route service. Baltimore Region projects must be endorsed by the BRTB to be considered. The BRTB last endorsed applications in April 2019. Applications are considered every two years.

D. Additional Programs for Seniors and Persons with Disabilities

In addition to administering the FTA Section 5310 and MD-JARC Programs, MDOT MTA provides paratransit service for the elderly and persons with disabilities. MDOT MTA also operates a fleet of buses that is fully accessible to the elderly and persons with disabilities. All new bus purchases are lift-equipped.

As part of their training program, bus drivers receive disability awareness/passenger assistance technique training for passengers with special needs. The needs of the elderly and disabled customers, those with hidden disabilities and blind, deaf and mentally disabled travelers are discussed. The training emphasizes Americans with Disabilities Act (ADA) service requirements and techniques for communicating with the elderly and people who are disabled. Drivers also learn how to operate lift equipment and assist riders who are disabled.

MDOT MTA operates Mobility and a Reduced Fare Program for the elderly and persons with disabilities. Mobility provides comparable ADA service for those who cannot use fixed-route bus service. The Reduced Fare Program provides a 50% discount for the elderly and persons with disabilities in accordance with requirements for recipients of federal operating assistance from FTA (49 CFR 609.23).

In addition to these programs, MDOT MTA initiated two programs: MDOT MTA Taxi Access II Service and the Senior Ride Program.

MDOT MTA Taxi Access II Service

The MDOT MTA Taxi Access II Service is open to eligible MDOT MTA Mobility customers. This program offers program participants same day transportation options through a network of taxi and sedan providers. Participants in the program can use the service for any purpose and take it to anywhere within the service area of Mobility. There is a fee of $3.00 for each ride. MDOT MTA will pay the fare up to $20, and the participant is responsible for the balance of the fare that exceeds the $20 limit. Participants may be accompanied by up to 3 people per trip if all passengers start and end the ride at the same location. A limited number of wheelchair accessible taxis and sedans are available to individuals with mobility impairments who use motorized or non-folding wheelchairs. A list of participating companies is available to users.

Senior Ride Program

Since FY 2006, MDOT MTA has awarded grants to qualified applicants statewide to encourage and facilitate the development of volunteer transportation services for low-income and moderate-income seniors. MDOT MTA has offered approximately $180,000 in State funds each year to be matched by 25% local contributions. The projects must provide door-to-door transportation service, use primarily volunteer drivers, and have a dispatching system.

FY 2022 awards went to the following organizations in the Baltimore Region:

- Action in Maturity (AIM)
- Grace Memorial Church in Deer Creek Parish/Wilson Ministries (Getting There Ride Share)
- Neighbor Ride
- Partners in Care Maryland

E. Status of Projects from the 2021-2024 TIP and New Projects in the 2022-2025 TIP

As mandated by the federal regulations for metropolitan planning, major projects from the previous TIP, the 2021-2024 TIP, must be tracked and any significant delays in the planned implementation of these major projects must be explained. In order to meet this guideline, Table II-1 lists all projects from the 2021-2024 TIP by jurisdiction including the TIP ID, year of operation in the 2021-2024 TIP, year of operation in the 2022-2025 TIP (if any), and status of the project.

Table II-1 sometimes lists the year of operation in the 2022-2025 TIP as XX. This means the project is not in the new TIP either because funds have been received, the project is complete, the project is between funding stages, the project is on hold, or the project is not being pursued. The reason is noted in the project status. Ongoing means that this project continues year after year. NA means not applicable, usually used for a study where the year of operation has yet to be determined.

Table II-2 lists projects that are new to the 2022-2025 TIP. Additional details on these projects are available in Chapter VI.

Table II-1: Status of Projects from the 2021-2024 TIP

Project	TIP ID	Year of Operation 21-24 TIP	Year of Operation 22-25 TIP	Project Status
Anne Arundel County				
Hanover Road Corridor Improvement	11-1801-42	TBD	TBD	The project is at 90% design, with land acquisition in progress
MD 2: US 50 to Baltimore Annapolis Boulevard	11-2102-41	TBD	TBD	SHA has finalized the purpose and need to be used to analyze the proposed improvements. MOU has been agreed upon and is currently in the signature process. A draft project task agreement is currently under review.
MD 3: Saint Stephens Church Road to MD 175	11-2103-41	TBD	TBD	SHA has finalized the purpose and need to be used to analyze the proposed improvements. MOU has been agreed upon and is currently in the signature process. A draft project task agreement is currently under review.
MD 214: MD 468 to east of Loch Haven Road	11-2104-41	TBD	TBD	The Purpose and Need has been approved and SHA is currently analyzing proposed improvements. A formal letter was sent to SHA to manage design and a project task agreement is being developed to complete design. Once the project task agreement is approved, cost estimates and design details will follow.
Furnace Avenue Bridge over Deep Run	11-1103-13	2025	TBD	Design was initiated in December 2020 and is in the pre-NEPA phase. Consultant is beginning survey for Right of Way acquisition. Construction funds are programmed beyond the timeframe covered by this TIP. Project completion is TBD depending on the process for obtaining permits and approvals associated with impacts to the Patapsco Valley State Park.
Harwood Road Bridge over Stocketts Run	11-1208-13	2022	2023	The year of operation was delayed to 2023 due to delays in Right of Way acquisition. Construction advertisement is anticipated in July 2021.
Magothy Bridge Road Bridge over Magothy River	11-1402-13	2022	2024	Construction advertisement anticipated in fall 2021. Project completion has been delayed to 2024 due to delays in design review and a two year construction schedule.
O'Connor Road Bridge over Deep Run	11-1403-13	2024	2026	Project is in the process of obtaining NEPA approval. The year of operation was delayed to 2026 due to delays caused by numerous design changes and Right of Way acquisition.
McKendree Road Culvert over Lyons Creek	11-1601-19	2023	2023	NEPA is complete and SHA has approved manhours for final design. Construction advertisement is anticipated in October 2022, with project completion in December 2023.

Table II-1: Status of Projects from the 2021-2024 TIP

Project	TIP ID	Year of Operation 21-24 TIP	Year of Operation 22-25 TIP	Project Status
Polling House Road Bridge over Rock Branch	11-1602-13	2025	2026	The project is in the preliminary design/pre-NEPA phase. Construction funds will be included in a future TIP. Project completion has been delayed to 2026 due to delays in starting preliminary design.
Hanover Road Bridge over Deep Run	11-2105-13	2026	2026	Contract initiation in progress. Preliminary engineering has not yet begun and is anticipated to begin in 2021.
Conway Road Bridge over Little Patuxent River	11-2106-13	2025	2027	Contract initiation in progress. Preliminary engineering has not yet begun and is anticipated to begin in 2021. The year of operation has been updated to reflect a realistic design and construction schedule.
Jacobs Road Bridge over Severn Run	11-2107-13	2027	2027	Contract initiation in progress. Independent manhours have been sent to SHA. Preliminary engineering is anticipated to begin in FY 2022.
Parole Transportation Center	11-2101-66	2025	2025	The location is now identified as the Westfield Mall. Engineering is anticipated to begin in August 2021, with construction advertisement in September 2022.
Baltimore City				
Frederick Avenue Slope Stabilization Wall	12-2105-39	2022	XX	Project advertised for construction 12/2020 and is not requesting further funds. Construction is anticipated to be complete in fall 2021.
Citywide Traffic Signals, Intelligent Transportation System and Safety Improvements	12-1218-07	Ongoing	Ongoing	Signal upgrades at 28 intersections are at 95% design and preparing for SHA submittal. Traffic signal timing optimization is in the approval process from SHA. Construction of CCTV cameras and signal rewiring is preparing for advertisement in the 3rd quarter of FY 2021. PS&E package for the installation of fiber optic and copper communications was sent to SHA for review 12/2018 and BCDOT is preparing to resubmit to SHA. ITS deployment and upgrades of 5 new CCTV cameras is at 95% design. Plans sent to SHA 11/2019 and BCDOT is preparing to resubmit to SHA.
Transportation Management Center Upgrade	12-1701-04	2022	2025	BCDOT is currently working with SHA on sole-source approval for the project. The project is now anticipated to be complete in 2025 due to delays in construction advertisement and an updated schedule to roll out all of the in-field signal controllers.

Table II-1: Status of Projects from the 2021-2024 TIP

		Year of Operation		
Project	**TIP ID**	**21-24 TIP**	**22-25 TIP**	**Project Status**
Bush Street Bike Facility	12-2101-03	2023	XX	This project is no longer included in the TIP because it is not using federal funds. Project is using local funds only for expediency and because federal grant funding is not anticipated to be available. Construction is anticipated to be complete in 2023.
Greenway Middle Branch Phase 2	12-2102-03	2025	2025	30% design and NEPA are complete, with engineering completion anticipated 12/2022. BCDOT is working with SHA to establish procurement of an engineering consultant through SHA contract. Construction advertisement anticipated in spring 2023.
Eutaw Place Bike Facility	12-2103-03	2023	XX	This project is no longer included in the TIP because it is not using federal funds. Project is using local funds only for expediency and because federal grant funding is not anticipated to be available. Construction is anticipated to be complete in 2023.
Wolfe/Washington Street Bike Facility	12-2104-03	2024	XX	This project is no longer included in the TIP because it is not anticipated to use federal funds. Project location on Wolfe or Washington has not been finalized. Engineering completion anticipated by the end of 2022. Project is anticipated to be complete in 2024.
Perring Parkway Ramp over Herring Run	12-1215-13	2022	2023	95% design stage, with construction advertisement anticipated in December 2021. Year of operation delayed due to delays in advertisement for construction.
Sisson Street Bridge over CSX Railroad	12-1216-13	2024	2024	Construction advertisement anticipated 9/2021, with project completion in 2024
Wilkens Avenue Bridge over Gwynns Falls	12-1403-13	2024	2024	Construction advertisement anticipated 1/2022, with project completion in 2024
Belair Road Complete Streets	12-1404-11	2025	2025	Phase I completed in February 2021. Preliminary design stage for Phase II, with construction advertisement anticipated in FY 2023. The year of operation reflects the completion of Phase II. Phase III (intersection with Fleetwood Ave) is not currently funded.
Orleans Street Bridge over I-83 and City Streets	12-1601-13	2028	XX	Project is between funding stages as construction funding is anticipated beyond the timeframe covered by this TIP. Initiation of engineering is pending approval and activation of a new federal aid design contract. Engineering is anticipated to be authorized in FY 2021.

Table II-1: Status of Projects from the 2021-2024 TIP

		Year of Operation		
Project	**TIP ID**	**21-24 TIP**	**22-25 TIP**	**Project Status**
Remington Avenue Bridge over Stony Run	12-1602-13	2024	2024	65% Design Stage. The project has been value engineered to reduce the overall project cost. Construction advertisement anticipated in summer 2022, with completion in 2024.
Radecke Avenue and Sinclair Lane over Moores Run	12-1603-13	2026	2026	Initiation of engineering is pending approval and activation of a new federal aid design contract. Engineering funds were authorized in FY 2021. Construction advertisement is anticipated in FY 2024.
I-83 Concrete Deck Mill and Resurface	12-1604-13	2025	2025	Engineering funds were authorized in FY 2020 but design has not yet begun. Construction advertisement anticipated in FY 2024.
Moravia Road Ramp Bridge over Pulaski Highway	12-1605-13	2026	2026	Initiation of engineering is pending approval and activation of a new federal aid design contract. Engineering is anticipated to be authorized in FY 2022.
MLK Boulevard and Howard Street Intersection Improvements	12-1706-11	2023	2023	Engineering completed 5/2021. Construction advertisement anticipated 9/2021, with project completion in 2023.
25th Street Rehabilitation from Greenmount Avenue to Kirk Avenue	12-2001-11	2025	2026	Preliminary design stage, with construction advertisement anticipated in spring 2024. Project delayed by one year due to funding delays.
41st Street over I-83, MTA Light Rail Tracks, and Jones Falls	12-2002-13	2030	2030	Future project. Engineering is anticipated to be initiated in FY 2023.
Citywide Asset Management	12-2003-19	Ongoing	Ongoing	A citywide ADA ramp analysis and an ADA self-compliance report were completed in FY 2021. BCDOT is finalizing its citywide GIS asset inventory. Programmed funds will be used for a pavement management system including the collection of pavement condition data and the creation of an optimized six-year maintenance and Capital Improvement Plan. BCDOT will utilize federal aid funding for eligible roads and local funding for the remaining roads of the network.
Brehms Lane over Herring Run	12-2005-13	2027	XX	Project is between funding stages as construction funding is anticipated beyond the timeframe covered by this TIP. Initiation of engineering is pending approval and activation of a new federal aid design contract. Engineering is anticipated to be authorized in FY 2021.
Fremont Avenue Rehabilitation from Lafayette Avenue to Presstman Street	12-2007-11	2025	2025	Preliminary design stage, with construction anticipated to start in fall 2023

Table II-1: Status of Projects from the 2021-2024 TIP

		Year of Operation		
Project	**TIP ID**	**21-24 TIP**	**22-25 TIP**	**Project Status**
Hanover Street over CSX	12-2008-13	2027	2027	Initiation of engineering is pending approval and activation of a new federal aid design contract. Engineering is anticipated to be authorized in FY 2022.
Howard Street over I-83, CSX, Amtrak, and Jones Falls	12-2009-13	2030	XX	Project is between funding stages as construction funding is anticipated beyond the timeframe covered by this TIP. Initiation of engineering is pending approval and activation of a new federal aid design contract. Engineering is anticipated to be authorized in FY 2021.
Madison Street Rehabilitation from North Milton Avenue to Edison Highway	12-2010-11	2025	2025	Preliminary design stage, with construction anticipated to start in fall 2023
Park Heights Avenue from West Rogers Avenue to Strathmore Avenue	12-2011-11	2028	2026	Preliminary design stage, with construction anticipated to start in spring 2024. The year of operation has been moved forward to 2026 because construction funds are available earlier than anticipated.
Patapsco Avenue from Magnolia Avenue to Patapsco River Bridge	12-2012-11	2028	2026	Preliminary design stage, with construction anticipated to start in spring 2024. The year of operation has been moved forward to 2026 because construction funds are available earlier than anticipated.
Pennington Avenue Rehabilitation from Birch Street to East Ordnance Road	12-2013-11	2026	2026	Preliminary design stage, with construction anticipated to start in spring 2024
Waterview Avenue over Ramp to 295	12-2015-13	2027	XX	Project is between funding stages as construction funding is anticipated beyond the timeframe covered by this TIP. Initiation of engineering is pending approval and activation of a new federal aid design contract. Engineering is anticipated to be authorized in FY 2021.
Harford Road Bridge over CSX	12-2106-13	2024	2024	65% design stage. CSX is leading and funding design. Construction advertisement is anticipated in FY 2022.
Capital Project Delivery Services	12-1901-99	Ongoing	Ongoing	BCDOT continues its design efforts for the project management tool, Oracle's Unifier. Initial rollout is expected in FY 2022. Following implementation, Unifier will be used to enhance project management capacity in BCDOT's workforce.
Citywide Transportation Studies	12-2014-99	Ongoing	Ongoing	A study focusing on the realignment of Druid Park Lake Drive is being pursued under this TIP ID. Traffic analysis and community engagement efforts are underway.

Table II-1: Status of Projects from the 2021-2024 TIP

Project	TIP ID	Year of Operation 21-24 TIP	Year of Operation 22-25 TIP	Project Status
Baltimore County				
Dogwood Road Bridge No. B-0072 Over Dogwood Run	13-0001-13	2023	2024	Engineering is nearly complete. Project delayed by Right of Way (ROW) acquisition that includes land swap with State of MD. Once ROW is cleared, some re-engineering will be required due to changes in stream alignment. Current design based on 20 year old surveys. Year of Operation assumes 4/2023 construction ad date.
Mohrs Lane Bridge No. B-0143 over CSX Railroad	13-0803-13	2024	2025	Engineering is nearly complete, with a summer 2023 construction advertisement anticipated. This project has been delayed due to Right of Way acquisition. The advertisement date is contingent on clearing Right of Way.
Gunpowder Road Bridge No. B-0409	13-1005-13	2026	XX	Project is not being pursued, as it does not meet Federal Highway Administration criteria per National Bridge Inspection Standards
Hammonds Ferry Road Bridge No. B-0100 over CSX Railroad	13-1012-13	2023	2024	Project delayed due to other projects having higher priority. Construction advertisement anticipated 11/23.
Lansdowne Boulevard Bridge No. B-0113 over CSX Railroad	13-1105-13	2026	2028	Future project. No work has been undertaken. Project delays are due to other projects having a higher priority.
Piney Grove Road Bridge No. B-0140 over CSX railroad	13-1107-13	2031	2032	Future project. No work has been undertaken. Project delays are due to other projects having a higher priority.
Peninsula Expressway Bridge No. B-0119 over CSX Railroad	13-1108-13	2029	2030	Future project. No work has been undertaken. Construction advertisement anticipated beyond the timeframe covered by this TIP. Project delays are due to other projects having a higher priority.
Old Ingleside Avenue Bridge No. B-0096 over Dead Run	13-1202-13	2027	XX	Project is not being pursued, as it does not meet Federal Highway Administration criteria per National Bridge Inspection Standards
Old Court Road Bridge No. B-0237 over Bens Run	13-1204-13	2022	XX	Project advertised for construction in October 2020, with project completion anticipated in 2022. No additional funds are being requested.
Sparks Road Bridge No. B-0018 over Gunpowder Falls	13-1206-13	2023	2024	No work has been undertaken. Project delays are due to other projects having a higher priority and need as this project involves no structural modifications.
Golden Ring Road Bridge No. B-0110 over Stemmers Run	13-1208-13	2027	2027	Future project. No work has been undertaken.
Rolling Road Bridge No. B-0358 over Branch of Dead Run	13-1209-13	2028	2031	Future project. No work has been undertaken. Project delays are due to other projects having a higher priority.

Table II-1: Status of Projects from the 2021-2024 TIP

Project	TIP ID	Year of Operation 21-24 TIP	Year of Operation 22-25 TIP	Project Status
Rossville Boulevard Bridge No. B-0132 over Amtrak & Orems Road	13-1701-13	2027	2029	Future project. No work has been undertaken. Project delays are due to other projects having a higher priority.
Phoenix Road Bridge No. BC6507 over Gunpowder Falls & NCR Trail	13-2001-13	2023	XX	Construction advertisement anticipated prior to July 1, 2021, with project completion in 2023. No additional funds are being requested.
Bridge Inspection Program	13-8901-14	Ongoing	Ongoing	Ongoing program
Carroll County				
Shepherds Mill Road Bridge over Little Pipe Creek	14-1102-13	2022	2022	Structural/final design submitted April 2020. Plans, Specifications, and Estimates (PS&E) is due April 2021, with construction advertisement anticipated in FY 2022.
Stone Chapel Road Bridge over Little Pipe Creek	14-1103-13	2023	2025	Engineering was delayed due to lengthy negotiations with the MDOT SHA supplied consultant for the design study proposal. Engineering will begin in FY 2021 and will continue into FY 2022. The year of operation was delayed to 2025 to reflect a more realistic construction ad date.
Babylon Road Bridge over Silver Run	14-1601-13	2023	2026	Project is in the Type, Size, and Location (TS&L) engineering phase. An additional bridge alternative is being considered to reduce hydrologic and environmental impacts. The year of operation was delayed to 2026 due to the additional alternatives analysis and land acquisition issues.
Gaither Road Bridge over South Branch Patapsco River	14-1602-13	2023	2029	Administrative preliminary paperwork to be completed at a later date due to reorganization of priorities, with engineering planned to begin in FY 2025. Anticipated year of operation extended to 2029.
McKinstrys Mill Road Bridge over Sam's Creek	14-1603-13	2023	2025	Engineering was delayed due to lengthy negotiations with the MDOT SHA supplied consultant for the design study proposal. Engineering will begin in FY 2021 and will continue into FY 2022. The year of operation was delayed to 2025 to reflect a more realistic construction ad date.
Hughes Shop Road Bridge over Bear Branch	14-1802-13	2023	2025	Engineering was delayed due to lengthy negotiations with the MDOT SHA supplied consultant for the design study proposal. Engineering will begin in FY 2021 and will continue into FY 2022. The year of operation was delayed to 2025 to reflect a more realistic construction ad date.
Old Kays Mill Culvert over Beaver Run	14-2101-13	2027	2028	Planning for preliminary engineering will start in FY 2025
Brown Road Culvert over Roaring Run	14-2102-13	2027	2026	Planning for preliminary engineering will start in FY 2024
McKinstrys Mill Road over Little Pipe Creek	14-2103-13	2027	2027	Planning for preliminary engineering will start in FY 2025

Table II-1: Status of Projects from the 2021-2024 TIP

Project	TIP ID	Year of Operation 21-24 TIP	Year of Operation 22-25 TIP	Project Status
Bridge Inspection Program	14-9401-14	Ongoing	Ongoing	Ongoing program. Biennial cycle will begin in April 2021.
Harford County				
Abingdon Road Bridge #169 over CSX Railroad	15-1001-13	2022	2025	Working with consultant to complete Type, Size, and Location/NEPA approval. Construction anticipated in FY 2024. Project completion has been delayed to 2025 due to the need to reconfigure bridge design.
Stafford Road Bridge #24 over Deer Creek	15-1501-13	2022	2023	Project is at 90% design. Construction advertisement is anticipated in winter 2021/2022, with completion in 2023 due to delays in the design review process and Right of Way acquisition. Construction will be scheduled so that the bridge is closed between Labor Day and Memorial Day to limit the impact to summer traffic in Susquehanna State Park.
Glenville Road Bridge #30 over Mill Brook	15-1601-13	2024	2025	Engineering began in fall 2020, with construction scheduled for FY 2024. The delay is due to adjusting the year of operation to reflect the calendar year of operation.
Grier Nursery Road Bridge #43 over Deer Creek	15-2001-13	2024	2025	The installation of the bridge overlay was completed in September 2020. SHA has issued a Notice to Proceed and the consultant is beginning to work on preliminary design and field investigations. The delay is due to adjusting the year of operation to reflect the calendar year of operation.
Hookers Mill Road Bridge #13 over Bynum Run	15-2002-13	2023	2024	Preliminary design will begin summer 2021. Construction advertisement is anticipated in FY 2023, with project completion in 2024. The delay is due to adjusting the year of operation to reflect the calendar year of operation.
Madonna Road Bridge #113 over Deer Creek	15-2101-13	2024	2025	Engineering scheduled to begin in summer 2021, with construction advertisement anticipated in FY 2025. The delay is due to adjusting the year of operation to reflect the calendar year of operation.
St. Clair Bridge Road Bridge #100 over Deer Creek	15-2102-13	2027	2028	Engineering scheduled to begin in FY 2025. The delay is due to adjusting the year of operation to reflect the calendar year of operation.
Stafford Road Bridge #162 over Buck Branch	15-2103-13	2026	2027	Engineering scheduled to begin in FY 2023. The delay is due to adjusting the year of operation to reflect the calendar year of operation.
Trappe Church Road Bridge #161 over Hollands Branch	15-2104-13	2025	2027	Engineering scheduled to begin in FY 2022. The delay in the year of operation to 2027 is due to delays in the construction schedule.

Table II-1: Status of Projects from the 2021-2024 TIP

Project	TIP ID	Year of Operation 21-24 TIP	Year of Operation 22-25 TIP	Project Status
Bridge Inspection Program	15-9411-14	Ongoing	Ongoing	Ongoing
Howard County				
Dorsey Run Road: MD 175 to CSX Railroad Spur	16-1403-41	2024	XX	Project is between funding stages, with completion delayed to 2028 due to delays in the availability of construction funds. Engineering is at 65% design. Final plans and land acquisition are anticipated to be complete in 2023.
Guilford Road: US 1 to Dorsey Run Road	16-1405-41	2024	XX	Project is between funding stages, with completion delayed to 2028 due to delays in the availability of construction funds. Engineering for improvements at the intersection of Guilford Road and US 1 is at 15%.
MD 175 at Oakland Mills Road Interchange	16-1407-46	2023	XX	Project is between funding stages, with completion delayed to 2029 due to delays in the availability of construction funds. Engineering is nearly complete.
Snowden River Parkway: Broken Land Parkway to Oakland Mills Road	16-1410-41	2025	2025	Breakout project at Broken Land Parkway and Snowden River Parkway is complete. Design for increased queue lengths from westbound Snowden River Parkway onto southbound Oakland Mills Road is in design.
US 29/Broken Land Parkway Interchange and North South Connector Road	16-1901-42	2023	2023	This is a developer project. The project is at 60% design and is expected to be complete in 2023.
Marriottsville Road and I-70 Bridge Improvements	16-2101-41	2022	XX	Project is between funding stages. Phase I (widening from I-70 to MD 99) and Phase II (improvements to the ramp for I-70 eastbound) are complete. Phase III (widening from US 40 to I-70) is anticipated to start construction in spring 2022, with completion in 2023. Phase III is a developer project, with funds appropriated prior to FY 2022. Phase IV (construction of the I-70 bridge) is at 65% design, with construction delayed to FY 2026 due to budget shortfalls. The overall project is anticipated to be complete in 2028.
Bridge Repairs and Deck Replacement	16-0436-13	Ongoing	Ongoing	River Road over Rockburn Branch, Henryton Road over a tributary to the Patapsco River, and Daisy Road over Little Cattail Creek anticipated to advertise in FY 2022. Twelve structures anticipated to advertise in FY 2023.
Maryland Port Administration				
Dundalk Marine Terminal Resiliency and Flood Mitigation Improvements	30-2101-82	2026	2026	The NEPA process is ongoing. Construction is anticipated to begin in FY 2023.

Table II-1: Status of Projects from the 2021-2024 TIP

Project	TIP ID	Year of Operation 21-24 TIP	Year of Operation 22-25 TIP	Project Status
Seagirt Marine Terminal Modernization: Berth Improvements	32-2001-83	2022	2022	Construction is ongoing. The access channel to Berth 3 will be deepened to 50 feet by July 2022.
Howard Street Tunnel	32-2101-83	2024	2025	Pre-construction activities are ongoing. The Environmental Assessment for NEPA approval was issued on Feb. 26, 2021. A Categorical Exclusion is anticipated in late FY 2021. Construction is anticipated to begin in FY 2022 after agreements are signed with Federal Rail Administration and CSX Railroad. Construction completion delayed to early 2025 as a result of delays in obtaining NEPA approval.
Maryland Transportation Authority				
I-95 Fort McHenry Tunnel: Port Covington Access	22-1901-45	2029	2029	The first phase of this project was MDTA's funding and oversight of the project's planning, with a NEPA study that is anticipated to be complete in 2021. A timeline for design will be established once the private developer secures grant funding.
I-95 Express Toll Lane Northbound Extension	25-1801-41	2026	2027	The I-95 ETL Northbound Extension (part of Section 200) is being developed in two phases. Phase I includes new ETL facilities from MD 43 to south of MD 152 and safety improvements between MD 152 and MD 24. Several sections of Phase I construction are complete including the Bradshaw Road and Joppa Road overpasses and the Section 100 NB and SB noise walls. The MD 152 and MD 24 Auxiliary lanes are expected to be complete in July 2021. All of Phase I is anticipated to be complete in summer 2024. Phase II includes new ETL facilities from south of MD 152 to north of MD 24 and reconstruction of the interchanges at MD 152 and MD 24. Phase II contracts under construction include the Clayton Road and Abingdon Road overpasses as well as the MD 24/MD 924 Park and Ride. The remaining Phase II contracts are in design.
I-95 Southbound Part-Time Shoulder Use	25-2101-41	2024	2025	Engineering was delayed by one year due to COVID-19 related funding cuts. As a result, the year of operation was delayed to 2025. Engineering resumed in October 2020.

Table II-1: Status of Projects from the 2021-2024 TIP

Project	TIP ID	Year of Operation 21-24 TIP	Year of Operation 22-25 TIP	Project Status
MTA - Transit				
MDOT MTA Transportation Alternatives Program Grants	40-2104-29	Ongoing	Ongoing	Engineering for Belair Road and Garrison Boulevard Transit Priority Initiatives anticipated to begin 11/2021, with completion 11/2022. Engineering for the Patapsco bike/ped bridge anticipated to begin 7/2021, with completion 11/2022.
Urban Transit Systems – Capital Assistance	40-1602-05	Ongoing	Ongoing	Projects are ongoing and on schedule
Bus and Paratransit Vehicle Overhaul and Replacement	40-1802-05	Ongoing	Ongoing	Project is ongoing. FY 2022 procurements include 70 forty-foot buses.
Low or No Emission (Low-No) Bus Program	40-2101-05	2023	XX	Discretionary grant funds were obligated in FY 2021, with no further funds programmed
Buses and Bus Facilities Discretionary Grant	40-2105-05	Ongoing	XX	Discretionary grant funds for Carroll, Harford, and Howard Counties were obligated in FY 2021, with no further funds programmed
Rural Transit Systems - Capital Assistance	40-9501-05	Ongoing	Ongoing	Projects are ongoing and on schedule
Small Urban Transit Systems – Capital Assistance	40-9502-05	Ongoing	Ongoing	Projects are ongoing and on schedule
Ridesharing - Baltimore Region	40-9901-01	Ongoing	Ongoing	Projects are ongoing and on schedule
Small Urban Transit Systems – Operating Assistance	40-0104-61	Ongoing	Ongoing	Projects are ongoing and on schedule
Kirk Bus Facility Replacement - Phase 1 & 2	40-1203-65	2020	2021	Project completion anticipated May 2021. Landscaping was on hold for planting season and began March 2021. Interior finishes, drywall finishing/painting, ACT ceilings, floor & wall tile, bathroom fixtures, and mill work are nearing completion.
Bus and Rail Preventive Maintenance	40-1204-64	Ongoing	Ongoing	Preservation project ongoing
Seniors and Individuals with Disabilities	40-1502-69	Ongoing	Ongoing	Projects are ongoing and on schedule
Urban Transit Systems – Operating Assistance	40-1603-61	Ongoing	Ongoing	Projects are ongoing and on schedule
Agencywide System Preservation and Improvement	40-1801-64	Ongoing	Ongoing	Various projects ongoing
Bus System Preservation and Improvement	40-1803-64	Ongoing	Ongoing	Project is ongoing. Boiler and other miscellaneous facility preservation improvement projects in the future. No funding programmed until FY 2023.
Metro and Light Rail Rolling Stock Overhauls and Replacement	40-1804-63	Ongoing	Ongoing	27 of 53 Light Rail Vehicles accepted for revenue service. Projected delivery of final car is 6/25/2022.
Metro and Light Rail System Preservation and Improvement	40-1805-64	Ongoing	Ongoing	Various projects are ongoing

Table II-1: Status of Projects from the 2021-2024 TIP

Project	TIP ID	Year of Operation 21-24 TIP	Year of Operation 22-25 TIP	Project Status
Light Rail LiDAR Track Survey Discretionary Grant	40-2102-64	2021	XX	Discretionary grant funds were obligated in FY 2021, with no further funds programmed. LiDAR survey anticipated to be complete 9/2021, with final report completion 12/2021.
Metro Subway Track Intrusion Detection and Alert System	40-2103-62	2023	XX	Discretionary grant funds were obligated in FY 2021, with no further funds programmed. Project completion anticipated 4/2023.
Rural Transit Systems - Operating Assistance	40-9204-61	Ongoing	Ongoing	Project is ongoing and on schedule
Building Blocks: Inclusive Transportation Planning Mobility Hubs	42-2101-64	2025	XX	Discretionary grant funds were obligated in FY 2021, with no further funds programmed. Design for the mobility hub along Fayette Street at Caroline Street anticipated to be complete 4/2023.
Towson Circulator	43-2101-67	2021	XX	Discretionary grant funds were obligated in FY 2021, with no further funds programmed. Baltimore County has chosen two routes, hours of service, and anticipated headways. The service is anticipated to open 9/2021.
MTA - Commuter Rail				
MARC Rolling Stock Overhauls and Replacement	70-1501-53	Ongoing	Ongoing	The first seven overhauled cars have been delivered to MTA and are operating in revenue service. Two additional overhauled cars have been delivered to MTA and are undergoing testing and commissioning prior to revenue service.
MARC Improvements	70-1502-54	Ongoing	Ongoing	Funds for this project are split 50/50 between the Baltimore and Washington region TIPs as commuter rail funds can be used anywhere MARC runs. Construction on the Brunswick and Camden lines began late 2019. MARC Positive Train Control (PTC) is ready to begin testing on the Penn Line pending Amtrak readiness. The MARC Penn-Camden Connector has completed design. Partial procurement scheduled and funded in FY 2025.
MARC Facilities	70-1503-55	Ongoing	Ongoing	Various projects ongoing
MARC Martin's Yard Power Switch	70-2101-54	Ongoing	XX	Discretionary grant funds were obligated in FY 2021, with no further funds programmed
MARC Martin's Storage Yard	70-2102-54	Ongoing	XX	Discretionary grant funds were obligated in FY 2021, with no further funds programmed
MDOT – Office of the Secretary				
State Safety Oversight	90-1401-39	Ongoing	Ongoing	Ongoing project

Table II-1: Status of Projects from the 2021-2024 TIP

Project	TIP ID	Year of Operation 21-24 TIP	Year of Operation 22-25 TIP	Project Status
Baltimore-Washington Superconducting Maglev (SCMAGLEV) Project	90-1901-99	NA	NA	Planning activities are underway. The Draft Environmental Impact Statement and Draft Section 4(f) Evaluation were released for public comment in January 2021.
State Highway Administration				
Areawide Transportation Alternatives Projects	60-9903-29	Ongoing	Ongoing	Ongoing
Areawide Environmental Projects	60-9506-38	Ongoing	Ongoing	Ongoing
Areawide Congestion Management	60-9504-04	Ongoing	Ongoing	Ongoing
Areawide Bridge Replacement And Rehabilitation	60-9310-13	Ongoing	Ongoing	Ongoing
Areawide Resurfacing And Rehabilitation	60-9501-11	Ongoing	Ongoing	Ongoing
Areawide Safety And Spot Improvements	60-9508-19	Ongoing	Ongoing	Ongoing
Areawide Urban Reconstruction	60-9511-19	Ongoing	Ongoing	Ongoing
Morgan State University Transportation Research Program	60-0702-99	Ongoing	Ongoing	Ongoing
MD 175: Mapes Road and Reece Road Intersection Reconstruction	61-1402-39	2019	XX	Project opened to service in 2019 and is complete
MD 175: Disney Road to Reece Road	61-1601-41	2020	XX	Project opened to service 9/2020 and is complete
MD 175: Sellner Road/Race Road to McCarron Court	61-1701-41	2024	2024	Utility relocation underway. Engineering is anticipated to be complete 6/2021. The project is scheduled to re-advertise in fall 2021 after significant utility realignment delays resulted in the termination of the original contract.
MD 173: Bridge Replacement over Rock Creek	61-2101-13	TBD	TBD	Currently in design with a potential ad date of 10/2022. Construction is not currently funded.
I-695 at Cromwell Bridge Road – Drainage Improvement	63-1801-38	2020	2021	Construction complete 4/2021. Project completion was delayed by Right of Way acquisition, which continues beyond completion of the construction phase.
MD 140: Painters Mill Road to Owings Mills Boulevard – Phase 2	63-0802-41	2025	XX	Project on hold
MD 140: Garrison View Road to Painters Mill Road – Phase 1	63-1203-41	2020	XX	Project opened to service 2/2021 and is complete
I-695: US 40 to MD 144	63-1601-41	2021	2021	Construction ongoing, with the project anticipated to be open to traffic in fall 2021
I-695: I-70 to MD 43	63-1802-41	2024	2024	This is a Design Build project. Project advertised 5/2019, with construction anticipated to begin in summer 2021.

Table II-1: Status of Projects from the 2021-2024 TIP

Project	TIP ID	Year of Operation 21-24 TIP	Year of Operation 22-25 TIP	Project Status
I-83: Bridge Replacement over Padonia Road	63-1701-13	2022	2022	Construction ongoing with completion anticipated in summer 2022
US 1: Bridge Replacement over CSX	63-1704-13	2021	2022	Construction ongoing with completion now anticipated in fall 2022 due to utility delays
US 40: Bridge Replacements over Little & Big Gunpowder Falls	63-1706-13	2021	2022	Construction ongoing with completion anticipated in fall 2022. The year of operation was delayed from 2021 to 2022 due to issues related to an undermined pier.
MD 45: Padonia Road to Wight Avenue	63-1707-11	2021	2021	Construction ongoing, with completion anticipated in fall 2021
MD 151/MD 151B: Bridge Replacements	63-2001-13	2023	2024	Construction ongoing with completion anticipated in 2024. The year of operation was delayed from 2023 to 2024 due to maintenance of traffic issues.
I-695: Bridge Replacement on Putty Hill Avenue	63-2002-13	2023	2023	Utility relocation underway, but complications in the relocation have resulted in a delay in the year of operation to 2023. Bridge construction is anticipated to begin in spring 2022 with open to traffic in fall 2023.
MD 30 Business: North Woods Trail to CSX Railroad (Hampstead Community Safety & Enhancement)	64-1401-19	2021	2020	Project opened to traffic 12/2020. Remaining funds will complete Right of Way acquisition.
MD 86: Bridge Replacement over Gunpowder Falls	64-1701-13	2021	XX	Project is complete and opened to traffic 6/2020
MD 24: South of Stirrup Run Culvert to Deer Creek Bridge, Section G	65-1601-12	TBD	TBD	Engineering ongoing, with 30% design complete
US 1: Bridge Replacements at Tollgate Road and Winters Run	65-2101-13	2025	2025	Engineering ongoing, with 30% design complete
MD 32: MD 108 to Linden Church Road	66-1602-41	2019	XX	Project is complete and opened to traffic 6/2019
MD 32: Linden Church Road to I-70, Capacity & Safety Improvements	66-1703-41	2022	2022	Construction ongoing, with completion anticipated in summer 2022
I-95: Active Traffic Management	66-1801-41	TBD	XX	Project on hold in order to evaluate/integrate into Traffic Systems Management and Operations Master Plan
MD 835C Sidewalk: Cockey Lane to Old Love Point Road	67-2101-03	TBD	TBD	Engineering ongoing. Project is not yet funded for construction.

Table II-2: New Projects in the 2022-2025 TIP

Agency	Project	TIP ID	Project Category	Year of Operation
Baltimore City	Monroe Street Ramp over CSX and Russell Street over CSX	12-1801-13	Highway Preservation	2031
Baltimore City	East-West Bus Corridor	12-2201-64	Transit Preservation	2025
Harford County	Moores Road Bridge #78 over a Tributary to Gunpowder Falls	15-2201-13	Highway Preservation	2027
Harford County	Hess Road Bridge #81 over Yellow Branch	15-2202-13	Highway Preservation	2029
MDOT – Maryland Transportation Authority	I-895/Baltimore Harbor Tunnel Toll Plaza and Interchange Improvements	22-2201-19	Highway Preservation	2027
MDOT – Maryland State Highway Administration	I-695: Reconstruction of Interchange at I-70	63-2201-12	Highway Preservation	2027

F. Conformity with Air Quality Planning

The Clean Air Act Amendments require careful evaluation of the conformity between transportation plans and programs against the applicable State Implementation Plan (SIP) for attaining air quality standards. The procedures for performing this evaluation have been documented and issued by the U.S. Environmental Protection Agency (EPA) in the final rule, "Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs and Projects Funded or Approved under Title 23 USC or the Federal Transit Act", hereafter termed Final Rule.

The Baltimore region is designated as a nonattainment area with regard to the 8-hour ozone National Ambient Air Quality Standard (NAAQS). The BRTB has conducted a comprehensive analysis of conformity for the 2022-2025 TIP with air quality goals as a pre-condition of its acceptance by federal funding agencies. The results of this work, as summarized below and in an accompanying report entitled *Conformity Determination of the 2022-2025 Transportation Improvement Program and Maximize 2045*, concluded that the region's transportation plan and program are in conformity with air quality goals.

The conformity determination referred to above is founded upon technical analyses of the impact on areawide emissions of air pollutants associated with building, or not building, projects contained in the TIP. These air quality analyses are based upon Round 9A cooperative socio-economic forecasts, which were approved by the BRTB in Resolution #21-1 on July 28, 2020. All projects that serve as emission reduction strategies (ERS) in the TIP are identified as such by the ERS heading on the top right corner of the page. ERS-related projects are documented in the conformity determination report.

Many of the projects contained in the TIP involve non-capacity improvements such as bridge replacement, bridge rehabilitation, streetscaping, road reconstruction, road resurfacing, road rehabilitation, traffic engineering, safety projects, and bicycle and pedestrian facilities. These improvements do not alter the functional traffic capacity of the facilities being improved and are “exempt” from the requirement to determine conformity according to the Final

Rule. Therefore they were not included in the travel demand model-based technical analysis.

Projects in the TIP that are not identified as exempt in the Final Rule are identified in the conformity document as “non-exempt.” They are not exempt from the requirement to determine conformity. These projects in the TIP typically involve capacity changes such as building a new roadway or adding lanes to an existing roadway. Non-exempt projects which are regionally significant were included in the travel demand model. Non-exempt, non-regionally significant projects were evaluated to determine whether they were suitable to be included in the travel demand model. Non-exempt, non-regionally significant projects which were not able to be evaluated in the travel demand model were reviewed through a manual quantitative analysis.

Upon completion of the travel demand forecasting task, the results were analyzed by the Maryland Department of Environment (MDE) to estimate the emission effects of the highway based transportation system. The results are portrayed in tons per day of NO_x and VOC for future horizon years.

Conformity determinations by the BRTB were made with input from the local jurisdictions and modal administrations. All projects were assessed by the Interagency Consultation Group (ICG) to determine conformity status for testing. Through coordination with the submitting agencies, the BRTB made a determination of conformity by testing projects in the model or performing quantitative analyses.

G. Performance Based Planning and Programming

The U.S. DOT published updated Metropolitan Planning Regulations on May 27, 2016 following the enactment of the FAST Act. These updated regulations continue and strengthen the emphasis on performance-based planning and programming. The intent of performance-based planning and programming is to aid MPOs in gauging progress relative to regionally established goals, strategies, performance measures, and performance targets.

- **Goals** are broad aspirations or guiding principles for the region (e.g. “Improve system safety”)
- **Strategies** are specific approaches or policies aiding the implementation of goals (e.g. “Eliminate hazardous or substandard conditions in high-crash locations and corridors”)
- **Performance Measures** are specific metrics the region can use to assess progress towards achieving a goal (e.g. “Decrease number of highway fatalities”)
- **Performance targets** are specific levels to be reached within a certain time frame (e.g. “Decrease the number of highway fatalities to 121 by 2030”)

Federal rulemaking requires MPOs to adopt a series of 25 performance measures and targets and to link investment priorities in the TIP and LRTP to the achievement of these performance measures and targets. The BRTB coordinated target selection with the State and public transportation providers to ensure consistency. All 25 of the federally mandated performance targets have been adopted by the BRTB.

Performance measures and targets cover several broad categories including transit asset management, transit safety, highway safety, traffic congestion, on-road mobile source emissions, pavement and bridge condition, and travel time reliability.

The following paragraphs summarize each of these performance measures and targets as well as the anticipated impact of investments in the TIP towards their achievement. The BRTB will continue to work to improve the methods utilized to analyze the linkage between TIP investments and regional progress towards performance measures and targets.

Transit Asset Management: Performance Measures and Targets

FTA's final rule on transit asset management (TAM) requires transit agencies receiving FTA funding to develop asset management plans and monitor performance for public transportation assets, including: vehicles, facilities, equipment, and other infrastructure. The BRTB adopted the four required transit asset management targets in June 2017, with an update in February 2019:

1) Percentage of revenue vehicles within an asset class that have either met or exceeded their Useful Life Benchmarks (ULBs). Table 1 summarizes these targets.

Table 1. MDOT MTA Revenue Vehicle Performance Targets

% of vehicles at or past their ULB				
Mode	Asset Class	2017 Target	2018 Target	2019 Target
Bus	bus (40-ft)	4.7%	4.7%	0.0%
Bus	bus (60-ft)	0.0%	0.0%	0.0%
Light Rail	light rail vehicle	0.0%	0.0%	0.0%
Metro	heavy rail vehicle	88.9%	88.9%	88.9%
MARC	locomotive	0.0%	0.0%	0.0%
MARC	passenger coach	0.0%	0.0%	0.0%
Mobility	cutaway bus	0.0%	0.0%	0.0%
Mobility	vans	0.0%	0.0%	0.0%
Mobility	automobile	4.4%	4.4%	4.4%

2) Percentage of non-revenue vehicles that have either met or exceeded their ULBs. Table 2 summarizes these targets.

Table 2. MDOT MTA Non-Revenue Vehicle Performance Targets

% of vehicles at or past their ULB			
Asset Class	2017 Target	2018 Target	2019 Target
Steel wheel vehicles	61.1%	61.1%	61.1%
Other rubber tire vehicles	54.4%	54.4%	54.4%

3) Infrastructure (rail fixed-guideway, track, signals, systems): percentage of track segments with performance restrictions. Table 3 summarizes these targets.

Table 3. MDOT MTA Guideway Performance Targets

% of guideway under performance restriction			
Mode	2017 Target	2018 Target	2019 Target
MARC	3.5%	3.5%	3.5%
Metro	3.5%	3.5%	3.5%
Light Rail	5.8%	5.8%	5.8%

4) Facilities: Percentage within an asset class rated below condition 3 on the FTA Transit Economic Requirements Model (TERM) scale. Table 4 summarizes the TERM scale and Table 5 summarizes the facilities targets.

Table 4. FTA Transit Economic Requirements Model (TERM) Scale

General Condition Assessment Rating Scale		
Rating	**Condition**	**Description**
5	Excellent	No visible defects, new or near new condition, may still be under warranty
4	Good	Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional
3	Adequate	Moderately deteriorated or defective components but has not exceeded useful life
2	Marginal	Defective or deteriorated component(s) in need of replacement; exceeded useful life
1	Poor	Critically damaged component(s) or in need of immediate repair; well past useful life

Table 5. MDOT MTA Facilities Performance Targets

% of facilities rated below condition 3 on the TERM scale *			
Asset Class	2017 Target	2018 Target	2019 Target
administrative facility	21%	21%	21%
maintenance facility	65%	65%	50%
passenger facility	17%	17%	17%
parking lot	58%	58%	50%

In addition to the TAM targets for MDOT MTA listed above, there are separate performance targets for Tier II agencies. Tier II agencies include Locally Operated Transit Systems (LOTS) in the Baltimore region. MDOT MTA is a Tier 1 agency and Maryland's direct recipient of federal funds. Tier 1 providers are those transit operators with 101 or more vehicles in revenue service during peak regular service or operators of rail fixed-guideway public transportation systems. MDOT MTA is also overseeing asset management for 22 sub-recipients (two Tier I agencies and 20 Tier II agencies). Tier II providers are those transit operators that do not operate rail fixed-guideway public transportation systems and have 100 or fewer vehicles in service during peak regular service. Table 6 summarizes Tier II targets.

Table 6. Tier II Performance Targets

% of vehicles at or past their ULB		
Asset Class	Current Performance	2019 Target
bus	40.7%	40.7%
cutaway bus	52.3%	52.3%
automobile	66.7%	66.7%
van	85.4%	85.4%
trucks and other rubber tire vehicles	50.0%	50.0%
administrative facility	40.9%	40.9%
combined administrative/maintenance facility	11.1%	11.1%
maintenance facility	21.1%	21.1%
passenger/parking	25.0%	25.0%

The 2022-2025 TIP includes fourteen projects related to the purchase, maintenance and rehabilitation of transit assets. MDOT MTA is the project sponsor for all TAM related projects except for the Anne Arundel County sponsored Parole Transportation Center. Table 7 summarizes these projects. The 2022-2025 TIP includes a total of $985.8 million in TAM related investments. Federal sources such as

CMAQ and FTA sections 5307, 5337, and 5339 account for $777.3 million of this total. Matching funds account for the remaining $208.5 million. This investment represents 24.4% of the $4.04 billion programmed in the 2022-2025 TIP.

Table 7. 2022-2025 TIP Projects Related to Transit Asset Management

Project	TAM Target	Federal	Matching	Total TIP Funds
MARC Rolling Stock Overhauls and Replacement	Vehicles	$21,062	$5,265	$26,327
Bus and Paratransit Vehicle Overhaul and Replacement	Vehicles	$113,498	$28,377	$141,875
Metro and Light Rail Rolling Stock Overhauls and Replacement	Vehicles	$245,095	$61,275	$306,370
Bus and Rail Preventive Maintenance	Vehicles and Infrastructure	$153,785	$38,447	$192,232
MARC Improvements	Infrastructure	$49,825	$12,458	$62,283
MARC Facilities	Facilities	$49,358	$12,340	$61,698
Bus System Preservation and Improvement	Facilities	$4,222	$1,056	$5,278
Kirk Bus Facility Replacement - Phase 1 & 2	Facilities	$8,128	$2,032	$10,160
Agencywide System Preservation and Improvement	Facilities and Infrastructure	$42,429	$10,608	$53,037
Metro and Light Rail System Preservation and Improvement	Facilities and Infrastructure	$82,931	$20,734	$103,665
Parole Transportation Center (Anne Arundel County)	Tier II Facilities	$0	$14,141	$14,141
Rural Transit Systems - Capital Assistance	Tier II Facilities and Vehicles	$195	$49	$244
Small Urban Transit Systems - Capital Assistance	Tier II Facilities and Vehicles	$3,253	$813	$4,066
Urban Transit Systems - Capital Assistance	Tier II Facilities and Vehicles	$3,522	$879	$4,401
Funding Total (in $1,000s)		**$777,303**	**208,474**	**985,777**

Transit Safety: Performance Measures and Targets

FTA's final rule requires transit agencies to develop four transit safety performance measures and targets. MDOT, regional LOTS and the BRTB coordinated on a methodology to develop measures to be tracked annually. The BRTB adopted the four required transit asset management targets in January 2021. The adopted performance measures include:

1) Fatalities: The total number of reportable fatalities and rate per total vehicle revenue miles (VRM) by mode

2) Injuries: The total number of reportable injuries and the rate per total VRM by mode

3) Safety Events: The total number of reportable events and the rate per total VRM by mode

4) System Reliability: The mean distance between major mechanical failures by mode

The thresholds for reportable fatalities, injuries, and safety events are defined in the National Transit Database (NTD) Safety and Security Reporting Manual. Reportable major mechanical failures are defined in the NTD Glossary as "a failure of some mechanical element of the revenue vehicle that prevents the vehicle from completing a scheduled revenue trip

or from starting the next scheduled revenue trip because actual movement is limited or because of safety concerns."

Tables 8 and 9 summarize the required transit safety performance measures and targets for MDOT MTA and the regional LOTS. Targets for these measures can be found in columns two, four, six and eight respectively. Fatalities, injuries, and safety events also include performance measures for the rate per total VRM by mode. These targets are listed in columns three, five, and seven respectively. System Reliability is shown in column eight.

Table 8. Transit Safety Performance Measures and Targets – MDOT MTA

Mode of Transit Service	Fatalities	Fatalities (per 1 million VRM)	Injuries	Injuries (per 1 million VRM)	Safety Events	Safety Events (per 1 million VRM)	System Reliability (VRM/Failures)
Local Bus	3	0.1	184	8.7	143	6.8	5,727
Light Rail	1	0.3	15	5.1	15	5.1	1,383
Metro Subway	1	0.2	37	8.1	38	8.3	2,820
Mobility	0	0.0	107	4.8	90	4.1	14,000
Commuter Bus	0	0.0	0	0.0	0	0.0	14,975

Table 9. Transit Safety Performance Measures and Targets - LOTS

Performance Measure	Fatalities	Fatalities (per 1 million VRM)	Injuries	Injuries (per 1 million VRM)	Safety Events	Safety Events (per 1 million VRM)	System Reliability (VRM/Failures)
Annapolis Transit							
Demand Response (Paratransit)	0	0	0	0	0	0	NA
Fixed Route	0	0	0	0	0.6	0.1	NA
Baltimore County							39,614 miles
Demand Response (Paratransit)	0	0	0	0	0	0	between failures
Carroll Transit							
Demand Response	0	0	1	0.15	15	2.30	>265,000
Fixed Route	0	0	1	0.53	5	2.66	>82,000
Queen Anne's County							
Demand Response	0	0	0	0	0	0	95%
Fixed Route	0	0	0	0	0	0	95%
Anne Arundel OOT							
Demand Response	0	0	2	0	2	0	25,000
Fixed Route	0	0	1	0	1	0	75,000
Harford Link							
Demand Response		0		0.25		<5	98%
Fixed Route		0		1		<10	98%
Deviated Fixed Route		0		0.5		0	98%
Charm City Circulator							5,000 miles between
Fixed Route	0	0	0	0	4 or fewer	1.0	breakdowns
RTA (Howard)							Miles bw failures
Fixed Route	0	0	20	1.5	20	1.5	6,000
Demand Response (Paratransit)	0	0	3	0.25	5	0.40	6,000
Demand Taxi	0	0	0	0	0	0	0

The 2022-2025 TIP includes eleven projects related to the transit safety performance measures and targets. MDOT MTA is the project sponsor for all of these projects aside from the East-West Bus Corridor (Baltimore City) and State Safety Oversight (MDOT Office of the Secretary). Table 10 summarizes these projects. The 2022-2025 TIP includes a total of $755.8 million in transit safety related investments. Federal sources account for $604.3 million of this total. Matching funds account for the remaining $151.5 million.

This investment represents 18.7% of the $4.04 billion programmed in the 2022-2025 TIP.

Table 10. 2022-2025 TIP Projects Related to Transit Safety

Project	Federal	Matching	Total TIP Funds
East-West Bus Corridor (Baltimore City)	$10,080	$2,520	$12,600
MARC Improvements	$49,825	$12,458	$62,283
MARC Rolling Stock Overhauls and Replacement	$21,062	$5,265	$26,327
Bus and Paratransit Vehicle Overhaul and Replacement	$113,498	$28,377	$141,875
Bus and Rail Preventive Maintenance	$153,785	$38,447	$192,232
MDOT MTA Transportation Alternatives Program Grants	$2,384	$596	$2,980
Metro and Light Rail Rolling Stock Overhauls and Replacement	$245,095	$61,275	$306,370
Rural Transit Systems - Capital Assistance	$195	$49	$244
Small Urban Transit Systems - Capital Assistance	$3,253	$813	$4,066
Urban Transit Systems - Capital Assistance	$3,522	$879	$4,401
State Safety Oversight (MDOT TSO)	$1,600	$800	$2,400
Funding Total (in $1,000s)	$604,299	$151,479	$755,778

Highway Safety: Performance Measures and Targets

The FHWA's final rule established five performance measures for state DOTs and MPOs to use to carry out the Highway Safety Improvement Program (HSIP). MDOT and the BRTB coordinated on a methodology using crash data to develop regional targets. The source for all fatality data is the most recently available NHTSA Fatality Analysis Reporting System (FARS) data. Serious injury data were obtained through the state's crash data system. Compliant with the final rule, the methodology uses 5-year rolling averages for each of the measures.

Table 11 summarizes the five required highway safety performance measures and targets. The table reflects targets adopted by the BRTB in January 2021. The rightmost column in Table 11 shows 2030 TZD goals. This refers to the state's and the region's continued commitment to the concept of "Toward Zero Deaths." While MDOT and the BRTB have adopted short-term yearly highway safety targets in accordance with regulatory guidance and advice from the FHWA, both organizations nonetheless maintain their long-term commitment to achieving zero deaths on the state's and the region's highways. Consistent with the state's Highway Safety Improvement Plan, the 2030 TZD targets are half the 2008 baseline targets.

Table 11. Highway Safety Performance Measures and Targets

Measures related to funding under the Highway Safety Improvement Program (HSIP)					
Measure	2008 Baseline	2018 Actual	2019 Actual	2017-2021 Target	2030 TZD Goal
Number of fatalities	242	223	207	179	121
Number of serious injuries	1,868	1,566	1,509	1,203	934
Fatality rate per 100 million VMT	0.93	0.81	0.74	0.68	0.47
Serious injury rate per 100 million VMT	7.21	5.66	5.42	4.55	3.60
Number of non-motorized (ped/bike) fatalities and serious injuries	286	363	343	223	143

Table 12 summarizes the three MDOT State Highway Administration (MDOT SHA) projects programming HSIP funds. HSIP funds are programmed in three MDOT SHA areawide projects focusing on environmental improvements, resurfacing and rehabilitation, and safety and spot improvements. Areawide projects group together many smaller projects throughout the region that do not affect air quality, otherwise known as exempt projects. The complete project list is not available from MDOT SHA, but Appendix D lists known projects that MDOT SHA will pursue as a part of these areawide projects in FY 2022. The 2022-2025 TIP includes $74.92 million in federal HSIP funds along with $18.73 million in matching funds for a total of $93.65 million. This investment represents 2.32% of the $4.04 billion programmed in the 2022-2025 TIP.

Table 12. 2022-2025 TIP Projects Programming HSIP Funds

Agency	**Project**	**HSIP Federal**	**HSIP Matching**	**Total TIP Funds**
MDOT SHA	Areawide Environmental Projects	$2,320	$580	$2,900
MDOT SHA	Areawide Resurfacing And Rehabilitation	$16,760	$4,190	$20,950
MDOT SHA	Areawide Safety And Spot Improvements	$55,840	$13,960	$69,800
Funding Total (in $1,000s)		**$74,920**	**$18,730**	**$93,650**

While the FHWA-required highway safety performance measures and targets are focused specifically on implementation of the HSIP, the 2022-2025 TIP includes many other projects identified by project sponsors as supporting the BRTB's highway safety goals. Examples include the provision of bicycle and pedestrian facilities along roadways as well as other cost effective safety countermeasures (e.g. rumble strips, signal phasing, etc.). These projects program a variety of funds including other federal sources, state funds, and local funds. Appendix B includes a complete table relating 2022-2025 TIP projects to LRTP goals and performance measures.

In addition to TIP investments, the BRTB has lead or participated in the development and completion of several major projects related to safety throughout the Baltimore region in recent years. Most notably among these are the development and implementation of local Strategic Highway Safety Plans (SHSP), the adoption of Complete Streets policies, and the staffing of pedestrian/bicycle coordinators in local Departments of Transportation or Public Works.

In addition, the BRTB is updating a Congestion Management Process, encouraging traffic incident management training for all first responders through the Traffic Incident Management for the Baltimore Region (TIMBR) committee, and promoting use of the MDOT SHA Transportation Systems Management and Operations (TSMO) Strategic Deployment Plan to ensure that safety is considered for all roadway projects. BMC is also supporting non-motorist safety projects including the Look Alive regional pedestrian and bicycle safety campaign and the Maryland Highway Safety Office's Pedestrian Fatality Review.

Traffic Congestion and Emissions: Performance Measures and Targets

The Baltimore region is classified as a nonattainment area for the 8-hour ozone standard. As such, the region must work to ensure it maintains conformity with the state's air quality plan. The Congestion Mitigation and Air Quality Improvement (CMAQ) program provides funding for transportation programs and projects that reduce air pollution and mitigate congestion in the transportation system in nonattainment areas.

The FHWA's final rule established three performance measures for state DOTs and MPOs to use to report on traffic congestion to carry out the CMAQ program. This final rule requires state DOTs and MPOs to coordinate and report on a single unified set of performance targets for each of the measures for the urbanized area. These measures are:

1) Annual hours of peak-hour excessive delay (PHED): This measure presents the annual hours of PHED that occur within an urbanized area on the National Highway System (NHS). The threshold for excessive delay is either 20 miles per hour or 60% of the posted speed limit travel time, whichever is greater, and is measured in 15-minute intervals. Peak travel hours are defined as 6-10 a.m. local time on weekday mornings and either 3-7 p.m. or 4-8 p.m. local time on weekday afternoons.

2) Percentage of non-single-occupancy vehicle (SOV) travel: This measure is the percentage of non-SOV vehicles traveling within an urbanized area, calculated using American

Community Survey (ACS) commuting (journey to work) data from the U.S. Census Bureau.

3) On-road mobile source emission reductions: This measure tracks the total emission reductions attributed to projects funded through the CMAQ program. Total emissions reductions are calculated by summing 2- and 4-year totals of emissions reductions of an applicable criteria pollutant and precursor, in kilograms per day, for all projects funded with CMAQ funds. The applicable pollutants for 8-hour ozone are Volatile Organic Compounds (VOCs) and nitrogen oxides (NOx).

Table 13 summarizes the traffic congestion and emissions performance measures and targets. The BRTB adopted initial traffic congestion targets in May 2018 and the emissions target in June 2018, with an update approved in October 2020.

Table 13. Traffic Congestion and Emissions Performance Targets

Measures related to funding under the Congestion Mitigation and Air Quality Improvement (CMAQ) Program			
Measure	Baseline (Year)	2-year Targets (2018-2019)	4-Year Targets (2018-2021)
Annual per capita hours of peak-hour excessive delay (PHED)	20.2 hours (2017)	<21.8 hours	<22.6 hours
Percentage of non-SOV travel	25.1% (2016)	24.8%	24.8%
Reduction of VOC (kg/day)	12.825 (2014-2017)	6.589	7.874
Reduction of NOx (kg/day)	139.478 (2014-2017)	88.571	123.390

Table 14 summarizes the TIP projects programming CMAQ funds. The 2022-2025 TIP includes $191.3 million in federal CMAQ funds along with $47.1 million in matching funds for a total of $238.4 million. This investment represents 5.9% of the $4.04 billion programmed in the 2022-2025 TIP.

MDOT MTA accounts for nearly 92% of CMAQ funds programmed in the TIP, with MDOT SHA accounting for the remainder. MDOT MTA sponsored projects include two projects focused on the overhaul and replacement of bus, metro, and light rail vehicles as well as funding for ridesharing in the Baltimore region. MDOT SHA sponsored projects include two areawide projects focused on congestion

management and safety and spot improvements. As mentioned previously, Appendix D lists known projects that MDOT SHA will pursue as a part of these areawide projects in FY 2022.

Table 14. 2022-2025 TIP Projects Programming CMAQ Funds

Agency	Project	CMAQ Federal	CMAQ Matching	Total TIP Funds
MDOT MTA	Bus and Paratransit Vehicle Overhaul and Replacement	$75,176	$18,795	$93,971
MDOT MTA	Metro and Light Rail Rolling Stock Overhauls and Replacement	$97,823	$24,457	$122,280
MDOT MTA	Ridesharing - Baltimore Region	$2,672	$0	$2,672
MDOT SHA	Areawide Congestion Management	$5,880	$1,470	$7,350
MDOT SHA	Areawide Safety And Spot Improvements	$9,700	$2,425	$12,125
Funding Total (in $1,000s)		**$191,251**	**$47,147**	**$238,398**

Pavement and Bridge Condition: Performance Measures and Targets

The FHWA's final rule established six performance measures for state DOTs and MPOs to use to assess the performance of the NHS under the National Highway Performance Program (NHPP). These include four measures of pavement condition and two measures of bridge condition.

Pavement condition is based on a calculation using measures of international roughness index (IRI), cracking, and rutting or faulting. Bridge condition is based on National Bridge Inventory (NBI) condition ratings for the bridge deck, superstructure, substructure, and culvert. Pavement sections and bridges are assigned a rating of good, fair, or poor based on the worst score among the rated elements. For example, if the bridge deck is rated poor while the other elements are rated fair, the bridge condition will be rated poor.

The pavement and bridge condition targets adopted by the BRTB are based on projecting current conditions out to the target years, considering planned and programmed maintenance. However, the targets do not necessarily represent what the BRTB would like to accomplish with respect to pavement and bridge conditions. The results of this target setting may be considered as a factor in redirecting funds if deemed appropriate.

Table 15 summarizes the six required performance measures and targets for pavement and bridge condition. The BRTB adopted these measures and targets in October 2018.

Table 15. Pavement and Bridge Condition Performance Measures and Targets

Measure	Baseline	2-Year Targets (2018-2019)	4-Year Targets (2018-2021)
% of NHS interstate pavement in good condition (2016 baseline)	63.8%	60.0%	60.0%
% of NHS interstate pavement in poor condition (2016 baseline)	0.4%	2.0%	2.0%
% of NHS non-interstate pavement in good condition (2016 baseline)	29.7%	30.0%	30.0%
% of NHS non-interstate pavement in poor condition (2016 baseline)	8.6%	7.0%	8.0%
% of NHS bridges by deck area in good condition (2017 baseline)	29.7%	20.0%	20.0%
% of NHS bridges by deck area in poor condition (2017 baseline)	5.0%	3.0%	5.0%

Table 16 summarizes funds programmed in the 2022-2025 TIP for projects related to pavement condition. Projects are categorized as interstate or non-interstate NHS for consistency with the required performance measures and targets. Project scopes vary and include many elements that do not affect pavement condition. As a result, only a small portion of the funds listed may be utilized to improve pavement condition. The year of operation for each project is listed in parenthesis after the project name.

In addition to the projects listed in Table 16, MDOT SHA's areawide projects for resurfacing and rehabilitation, safety and spot improvements, and urban reconstruction include funds applicable to pavement condition, though not all of the funds will contribute to improved pavement condition and those that do may not be used on the NHS. Known projects that will be pursued under these areawide projects in FY 2022 are listed in Appendix D. These areawide TIP projects program $469.4 million in federal funds along with $117.3 million in matching funds for a total of $586.7 million. $225.4 million of the funds in these projects are programmed under the National Highway Performance Program, which is used on NHS facilities.

Table 16. 2022-2025 TIP Projects Related to Pavement Condition

Agency	Project Name (Year of Operation)	Federal	Matching	Total TIP Funds
NHS Interstate Projects				
MDOT SHA	I-695: I-70 to MD 43 (2024)	$131,153	$5,337	$136,490
MDOT SHA	I-695: US 40 to MD 144 (2021)	$6,626	$20,469	$27,095
NHS Interstate Subtotal (In $1,000s)		**$137,779**	**$25,806**	**$163,585**
Agency	**Project Name (Year of Operation)**	**Federal**	**Matching**	**Total TIP Funds**
Non-Interstate NHS Projects				
Anne Arundel County	MD 2: US 50 to Baltimore Annapolis Boulevard (TBD)	$0	$1,256	$1,256
Anne Arundel County	MD 3: Saint Stephens Church Road to MD 175 (TBD)	$0	$1,269	$1,269
Baltimore City	Belair Road Complete Streets (2025)	$6,840	$1,710	$8,550
Baltimore City	Madison Street Rehabilitation from North Milton Avenue to Edison Highway (2025)	$5,536	$1,384	$6,920
Baltimore City	MLK Boulevard and Howard Street Intersection Improvements (2023)	$4,800	$1,200	$6,000
Baltimore City	Patapsco Ave. from Magnolia Ave. to Patapsco River Bridge (2026)	$11,600	$2,900	$14,500
Baltimore City	Pennington Ave. Rehabilitation from Birch St. to East Ordnance Rd (2026)	$7,720	$1,930	$9,650
MDOT SHA	MD 32: Linden Church Road to I-70, Capacity & Safety Improvements (2022)	$28,003	$1,392	$29,395
MDOT SHA	MD 45: Padonia Road to Wight Avenue (2021)	$194	$2,205	$2,399
Non-Interstate NHS Subtotal (In $1,000s)		**$64,693**	**15,246**	**$79,939**
Interstate and Non-Interstate NHS Funding Total (In $1,000s)		**$202,472**	**$41,052**	**$243,524**

Table 17 summarizes the funds programmed in the 2022-2025 TIP for bridge projects on the NHS. The programmed funds listed are for various project phases including engineering, right-of-way, and construction. The year of operation for each project is listed in parenthesis after the project name. The 2022-2025 TIP includes a total of $229.6 million in federal funds for these projects along with $26.9 million in matching funds for a total of $256.5 million. The reconstruction of the interchange at I-695 and I-70 accounts for 56.4% of this total.

Table 17. 2022-2025 TIP Bridge Projects on the NHS

Agency	Project Name (Year of Operation)	Federal	Matching	Total TIP Funds
Baltimore City	Hanover Street over CSX (2027)	$735	$185	$920
Baltimore City	Harford Road Bridge over CSX (2024)	$9,000	$3,500	$12,500
Baltimore City	I-83 Concrete Deck Mill and Resurface (2025)	$10,720	$2,680	$13,400
Baltimore City	Monroe Street Ramp over CSX and Russell Street over CSX (2031)	$23,520	$5,880	$29,400
Baltimore City	Moravia Road Ramp Bridge over Pulaski Highway (2026)	$960	$240	$1,200
Baltimore City	Perring Parkway Ramp over Herring Run (2023)	$8,000	$2,000	$10,000
Baltimore City	Wilkens Avenue Bridge Over Gwynns Falls (2024)	$11,040	$2,760	$13,800
Baltimore County	Rolling Road Bridge No. B-0358 over Branch of Dead Run (2031)	$400	$100	$500
MDOT SHA	MD 173: Bridge Replacement over Rock Creek (TBD)	$565	$0	$565
MDOT SHA	I-695: Reconstruction of Interchange at I-70 (2027)	$137,249	$7,397	$144,646
MDOT SHA	I-83: Bridge Replacement over Padonia Road (2022)	$2,610	$135	$2,745
MDOT SHA	US 1: Bridge Replacement over CSX (2022)	$7,700	$62	$7,762
MDOT SHA	US 40: Bridge Replacements over Little & Big Gunpowder Falls (2022)	$6,030	$1,186	$7,216
MDOT SHA	US 1: Bridge Replacements at Tollgate Road and Winters Run (2025)	$11,053	$780	$11,833
Funding Totals (in $1,000s)		**$229,582**	**$26,905**	**$256,487**

In addition to the projects listed in Table 17, the TIP also includes a number of additional investments in bridges including:

- I-95 Express Toll Lanes Northbound Extension: This Maryland Transportation Authority project will add two express toll lanes on I-95 northbound from north of MD 43 to north of MD 24. The project includes the reconstruction of several overpasses over I-95 and the widening of several bridges along I-95 northbound. The project is anticipated to be complete in 2027.
- Areawide Bridge Replacement and Rehabilitation: This MDOT SHA TIP project programs funds for major upgrades and maintenance of structures on state highways. The project programs $196 million in federal funds along with $49 million in matching funds for a total of $245 million. These funds include both NHS and non-NHS structures. $139.4 million of the funds in this project are programmed under the National Highway Performance Program, which is used on NHS facilities.
- Local and state bridge projects not on the NHS: The TIP also includes 45 additional local and state sponsored non-NHS bridge rehabilitation and replacement projects. The 2022-2025 TIP includes $107.4 million in federal funds for these projects along with $37.3 million in matching funds for a total of $144.7 million.

Travel Time Reliability: Performance Measures and Targets

The FHWA's final rule established three performance measures for state DOTs and MPOs to use to assess the performance of the NHS under the National Highway Performance Program (NHPP). These include two measures related to Level of Travel Time Reliability (LOTTR) as well as a Truck Travel Time Reliability (TTTR) Index. The specific performance measures are:

1) Percentage of person-miles traveled on the Interstate System that are reliable

2) Percentage of person-miles traveled on the non-interstate NHS that are reliable

3) Ratio of Interstate System mileage indicating reliable truck travel times

Level of Travel Time Reliability (LOTTR) is defined as the ratio of travel times in the 80th percentile to a "normal" travel time (50th percentile), using data from FHWA's National Performance Management Research Data Set (NPMRDS) or

equivalent. Data are collected in 15-minute segments during all time periods between 6 a.m. and 8 p.m. local time. The measures are the percent of person-miles traveled on the relevant portion of the NHS that are reliable. Segments are considered reliable if the 80th percentile travel time divided by the 50th percentile travel time is less than 1.5. Person-miles take into account the users of the NHS, including bus, auto, and truck occupancy levels.

The TTTR index is a measure comparing the time it takes trucks to travel segments of the NHS in congested conditions (as shown by the 95th percentile time) relative to the time it takes to make a trip in "normal" conditions (as shown by the 50th percentile time). For example, say the 95th percentile truck travel time is 56 minutes for a segment of the NHS that normally takes 30 minutes. This translates into a ratio of 56 minutes / 30 minutes, or 1.87.

Table 18 summarizes the travel time reliability performance measures and targets. The BRTB adopted these targets in October 2018.

Table 18. Travel Time Reliability Performance Measures and Targets

Measures related to travel time reliability			
Measure	2017 Baseline	2-year Targets (2018-2019)	4-Year Targets (2018-2021)
LOTTR (Interstate) measure: Percentage of person-miles traveled on the Interstate System that are reliable	71.5%	72.1%	72.1%
LOTTR (non-Interstate) measure: Percentage of person-miles traveled on the non-Interstate NHS that are reliable	82.0%	not applicable *	81.7%
TTTR Index: Ratio of Interstate System mileage indicating reliable truck travel times	1.87	1.87	1.88

* For the first performance period only, FHWA does not require state DOTs and MPOs to set a 2-year target for the LOTTR non-interstate measure

There are no federal funding sources tied directly to travel time reliability on Interstate and non-Interstate NHS facilities. However, a number of projects in the TIP have the potential to improve travel time reliability. Example projects include:

- Baltimore City's Traffic Signals and Intelligent Transportation System project (TIP ID 12-1218-07)
- MDOT SHA's implementation of hard shoulder running on I-695 during peak travel periods between I-70 and MD 43 (TIP ID 63-1802-41)
- MDOT SHA's Areawide Congestion Management project (TIP ID 60-9504-04)

• MDTA's I-95 Southbound Part-Time Shoulder Usage project (TIP ID 25-2101-41)

In addition to investments in the TIP, BMC staff are working on the development of an analysis tool for congestion in the Baltimore region. This tool overlays project data from the TIP and *Maximize2045*, the Baltimore region's top 25 bottlenecks, traffic speed data, and a travel time index. This tool will be useful in analyzing the effectiveness of transportation investments in mitigating congestion in the Baltimore region.[5]

Future Performance Monitoring

In cooperation with MDOT and its modal agencies, as well as its other state agency partners, the BRTB will continue to monitor how investments in the TIP are influencing the performance of the region's transportation systems. This includes improving the methods utilized to analyze the anticipated effect of TIP investments towards achieving the performance targets discussed in this section. In addition, the BRTB will use the established targets to help in identifying strategies and in making investment decisions about programs and projects.

For more information on performance measures and targets, please see the System Performance Report in Chapter 5 of *Maximize2045*.[6]

[5] More information on the BRTB Congestion Management Process, including the Congestion Management Process Analysis Tool, is available here: https://www.baltometro.org/transportation/planning-areas/congestion-management-process

[6] More information on *Maximize2045*, including the system performance report, is available here: https://www.baltometro.org/transportation/plans/long-range-transportation-plan/maximize2045

III. PROGRAM DEVELOPMENT

A. Integration with Federal, State and Local Programs

The projects contained in the 2022-2025 TIP flow from *Maximize2045* with detailed information extracted from the capital programs of state and local agencies responsible for implementing transportation projects in the region. Project information was provided by these agencies from the 2022-2025 portions of their respective multi-year improvement programs.[7] For a surface transportation project to be eligible for inclusion in the State TIP (STIP), and thus to receive federal aid, it must first be listed in the TIP.

Because the TIP must reflect regional priorities and be consistent with recommendations contained in the LRTP, it is important that a "regional voice" be expressed in the preparation of individual agencies' capital programs. Meetings that take place as part of the effort to produce a short-range element begin to accomplish this. The meetings foster a more fully coordinated project selection process for the TIP, providing for sound technical analysis early in the programming process, full discussion among local and state agencies and avoidance of unrealistic over-programming.

[7] A list of contributing agencies can be found in Appendix A.

B. Federal Fund Sources for Surface Transportation Projects

Federal regulations require that certain highway and transit projects inside or serving the urbanized area be included in the TIP to gain federal approval. Projects proposed to be funded through the following programs in the current or following fiscal years must be included in the TIP:

- 1702 High Priority Projects
- Congestion Mitigation and Air Quality Improvement Program (CMAQ)
- FTA Capital and Operating – Sections 5307, 5307 flexed from STBG, 5310, 5311, 5329, 5337, and 5339
- Better Utilizing Investments to Leverage Development (BUILD) grants
- Highway Safety Improvement Program
- Infrastructure for Rebuilding America (INFRA) grants
- National Highway Performance Program
- Surface Transportation Block Grant Program
- Transportation Alternatives Program

The BRTB endorsement of the TIP is a DOT requirement and is an opportunity for the BRTB to support or oppose proposed projects in the above program categories.[8] Inclusion of these projects in the TIP indicates endorsement by the BRTB for federal funding of the proposed project phase(s).

[8] Endorsement of projects for planning or engineering does not imply any commitment of funds for later phases (right-of-way acquisition, construction).

IV. EXPLANATION OF TERMS AND SYMBOLS

The TIP covers a four year period. It includes projects for which federal funds are expected to be requested in Fiscal Years 2022, 2023, 2024, and 2025. The full project listing is contained in Chapter VI. A project index is included at the end of the document.

Projects in Chapter VI are listed first by sponsoring agency - Baltimore City and the six counties in alphabetical order, the MDOT Office of the Secretary, and the MDOT modal administrations, included as the Maryland Transportation Authority (MDTA), the Maryland Port Administration (MPA), MTA – Transit, MTA – Commuter Rail, and the State Highway Administration (MDOT SHA). Projects implemented by MDOT SHA are broken down further by county in alphabetical order. While a portion of Queen Anne's County is now a part of the Baltimore urbanized area, there are no local projects for Queen Anne's County in the 2022-2025 TIP.

Within these groups, projects are listed by category in the following order: commuter rail capacity, commuter rail preservation, enhancement program, environmental/safety, emission reduction strategy, highway capacity, highway preservation, transit capacity, transit preservation, ports and miscellaneous.

The project numbers (TIP ID) printed below each project name show the project's location and type according to the following codes: **AB-CCCC-DD**, where:

A Implementing Agency
- 0 - Other State Agencies
- 1 - Local Project
- 2 - Maryland Transportation Authority
- 3 - Maryland Port Administration
- 4 - Maryland Transit Administration (Transit)
- 5 - Maryland Aviation Administration
- 6 - State Highway Administration
- 7 - Maryland Transit Administration (Commuter Rail)
- 8 - Baltimore Metropolitan Council
- 9 - Office of the Secretary

B Location / Jurisdiction selected
- 0 - Regional
- 1 - Anne Arundel County
- 2 - Baltimore City
- 3 - Baltimore County
- 4 - Carroll County
- 5 - Harford County
- 6 - Howard County
- 7 - Queen Anne's County
- 8 - City of Annapolis

CCCC The first two digits display the fiscal year the project first appeared in the TIP; the last two digits are a unique count of the number of projects for that agency, jurisdiction, and fiscal year.

DD Project Type by Category:

EMISSION REDUCTION STRATEGY (ERS)
- 01 - Ridesharing
- 02 - Park-and-ride lots
- 03 - Bicycle/pedestrian facilities
- 04 - Traffic engineering
- 05 - Fleet improvement
- 06 - System expansion
- 07 - ITS
- 09 - Other (ERS)

HIGHWAY PRESERVATION
- 11 - Road resurfacing/rehabilitation
- 12 - Road reconstruction
- 13 - Bridge repair/deck replacement
- 14 - Bridge inspections
- 19 - Other

ENHANCEMENT PROGRAM
- 21 - Archaeology
- 22 - Acquisition/preservation of easements or sites
- 23 - Rehabilitation/operation of historic transportation structures/facilities
- 24 - Landscaping
- 25 - Bicycle/pedestrian facility
- 29 - Other

ENVIRONMENTAL/SAFETY
- 31 - Noise barriers
- 32 - Lighting, signs
- 33 - Wetland mitigation
- 34 - Scenic beautification, reforestation
- 38 - Environmental other
- 39 - Safety other

HIGHWAY CAPACITY
- 41 - Roadway widening
- 42 - New or extended roadways
- 43 - Bridge widening
- 44 - New bridge/elimination of at-grade crossing
- 45 - Interchange ramp added or widened
- 46 - New interchange

COMMUTER RAIL CAPACITY
- 57 - Commuter rail capacity expansion

COMMUTER RAIL PRESERVATION
- 51 - Operating assistance
- 52 - Operations support equipment
- 53 - Fleet improvement
- 54 - Preservation and improvements
- 55 - Rehabilitation of facilities
- 56 - New rail facilities
- 59 - Other

TRANSIT CAPACITY
- 67 - Transit capacity expansion

TRANSIT PRESERVATION

61 - Operating assistance
62 - Operations support equipment
63 - Fleet improvement
64 - Preservation and improvements
65 - Rehabilitation
66 - New bus facilities
69 - Other

AIRPORTS

71 - Facility maintenance
72 - Facility rehabilitation
73 - Facility expansion
79 - Other

PORTS

81 - Facility maintenance
82 - Facility rehabilitation
83 - Facility expansion
89 - Other

MISCELLANEOUS

99 - Miscellaneous

Conformity Status reflects one of two classifications: Exempt (for projects which are exempt from the requirement to determine conformity) or Not Exempt (for capacity type projects evaluated using the travel demand model or evaluated off-model) in accordance with meeting the Clean Air Act Amendments. Wherever possible, local Capital Improvement Program (**CIP**) or state Consolidated Transportation Program (**CTP**) page numbers are provided to assist in finding projects in their respective capital improvement or development programs.

Year of Operation indicates the calendar year the facility or service will be open to traffic or for public use. For road and bridge projects, the **Functional Class** of the existing facility as specified by the FHWA functional classification system is given. Functional classes are:

- Interstate
- Freeway
- Principal arterial
- Minor arterial
- Collectors, major or minor
- Local

The **Physical Data** line, which pertains to road and bridge projects, indicates the project length in **Miles** and the present/future number of **Lanes**. The **Estimated Total Cost** lists the entire cost of the project. This is useful as projects in the TIP are often long-term phased projects that began before or extend beyond the four fiscal years covered by the TIP.

Also included for road projects is an indication if the project is part of the **National Highway System**. The National Highway System Designation (NHS) was signed into law on November 28, 1995. The NHS designates key road segments that provide improved access to work and markets; to ports, airports, and rail stations; to our national parks; and to bordering countries. Principal contributions of the NHS are to facilitate sustainable economic growth by enhancing intermodal and highway system connections, improving productivity and efficiency of commercial vehicle operations, facilitating the movement of agricultural produce, advancing safety, alleviating congestion, supporting national defense, and improving system performance. Nationally, the total mileage is about 164,000 miles and includes the Interstate Highway System, as well as other roads important to the nation's economy, defense and mobility.

As called for in the Moving Ahead for Progress in the 21st Century Act (MAP-21), Section 1104 expanded the NHS to include urban and rural principal arterials that were not included in the NHS before October 1, 2012.

The project **Description** and **Justification** provide a detailed project scope and reason(s) that the project deserves funding over others. The **Connection to Long-Range Transportation Planning Goals** connects TIP projects to the long-range plan goals and strategies that the project helps the region to achieve.

Funding Source indicates the source of federal aid. Project funding source(s) are designated in the funding table on the second page of the project summary. Funding sources are abbreviated as follows:

Federal Highway Administration Funds:

- 1702 Section 1702 High Priority Project
- BUILD Better Utilizing Investment to Leverage Development Grants
- CMAQ Congestion Mitigation and Air Quality
- HSIP Highway Safety Improvement Program
- INFRA Infrastructure for Rebuilding America Grants
- NHPP National Highway Performance Program (National Highway System, Interstate Maintenance, Bridge (on-system))
- STBG Surface Transportation Block Grant Program
- TAC Transportation Alternatives (including Safe Routes to School)

Federal Transit Administration Funds:

- 5307C Section 5307 Urbanized Area Formula Program (funding for capital projects)
- 5307F Section 5307 Flex (STBG funds flexed to Section 5307)

- 5307O Section 5307 Urbanized Area Formula Program (funding for operating projects)
- 5310 Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Program
- 5311O Section 5311 Non-urbanized Area Formula Program (funding for operating assistance in non-urbanized areas)
- 5329 Section 5329 (State Safety Oversight)
- 5337 Section 5337 (State of Good Repair Formula Program)
- 5339F Section 5339 (Bus and Bus Facilities Formula Program)
- CMAQ Congestion Mitigation and Air Quality (flexed to transit becomes 5307)

Project costs in the funding tables represent anticipated funding requests during a particular year by project phase. **All figures are in thousands of dollars.** The abbreviations in the **Phase** column stand for the following:

- PL – Planning: Initial phase of project development where the need and feasibility of a project is documented and scoping is broad and involves the public.
- ENG – Engineering: Engineering projects include preliminary and final design. Engineering funds involving detailed environmental studies and engineering to obtain NEPA are under preliminary design. Design activities following preliminary design involve the preparation of final construction plans and are under final design.
- ROW – Right-of-Way: Funding to provide the necessary land for the project, or to protect corridors for future projects.
- CON – Construction: Funding to build the designed facility.
- OTH – Other[9]: This funding may include permits, inspections, utility costs, and other non-infrastructure costs or in the case of transit, the purchase of capital equipment.

The **Matching Funds** column indicates the state and/or local funds programmed to match the federal funding requested for that fiscal year. In all but a few cases, matching funds are provided by the agency or jurisdiction under which the project is listed.

[9] The 2022-2025 TIP includes $287.3 million for the Other phase including:
- MDOT MTA projects including bus and rail preventive maintenance, section 5310 grants, ridesharing, funding for LOTS agencies, and state safety oversight of light rail and metro ($236.8 million or 82.4% of total)
- MDOT SHA Areawide Congestion Management funds not involving construction such as CHART vehicle purchases ($36 million or 12.5% of total)
- Permits, inspection fees, and local bridge inspection programs ($13.6 million or 4.7% of total)
- Non-infrastructure funds for project delivery services and research ($.9 million or .3% of total)