Baltimore Regional Transportation Board

BALTIMORE REGION TRANSPORTATION IMPROVEMENT PROGRAM 2020-2023

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 ◆ HARFORD 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/20-23/20-23TIP.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 long-range plan, as well as system preservation projects and operational initiatives that are supported in the plan but have not been previously detailed. As such, the TIP ensures consistency between plan recommendations and project implementation in the region. 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 2020-2023.[2]

A summary of the key federal requirements is provided in Chapter II. The summary is followed by several sections that provide information for the requirements in key areas. The relationship between the TIP and other transportation plans and programs in the region, its fulfillment of federal requirements, and its regional review function are described in Chapter III. 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 2020.

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 they are then grouped by category in the following order:

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.

2. The Baltimore Region TIP follows the Maryland state fiscal year which is July 1 to June 30.

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 total amount programmed in the 2020-2023 TIP is approximately $3.66 billion. Of that amount, $2.28 billion will be provided by federal funding authorities, while the local and state matching funds are $1.38 billion.

Exhibit I-1: The Baltimore Region

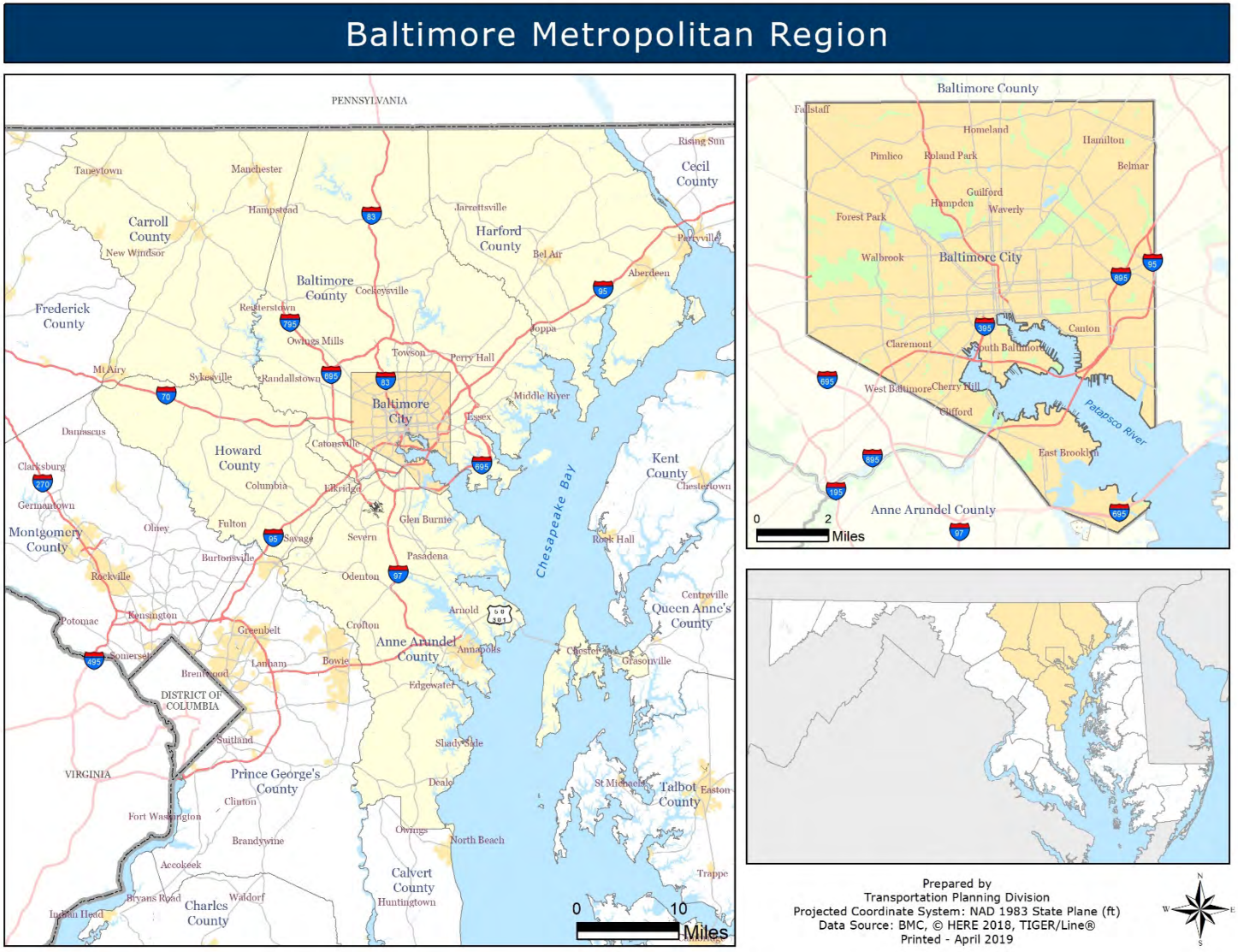


Exhibit I-2: The Baltimore Region Federal Highway Functional Classification

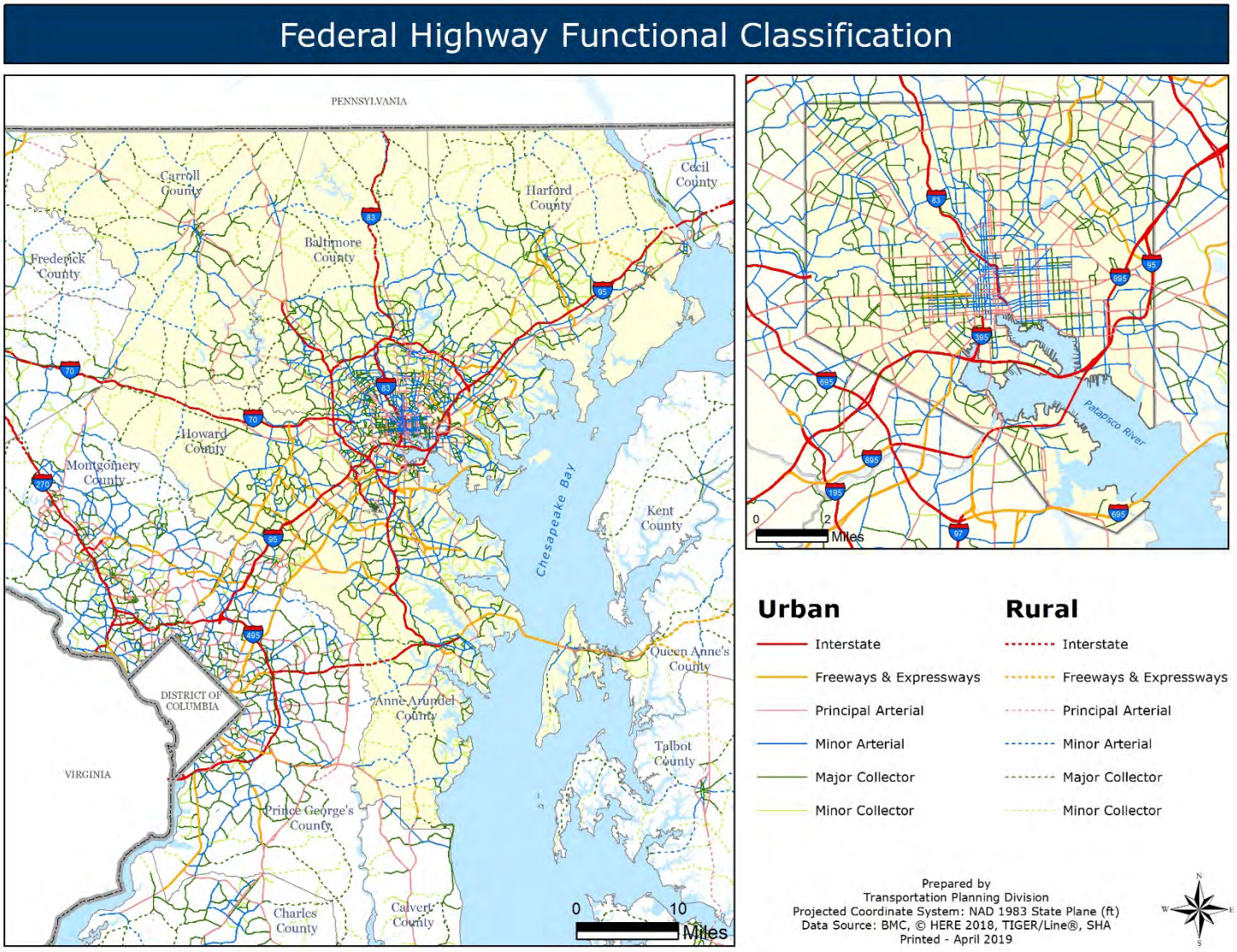
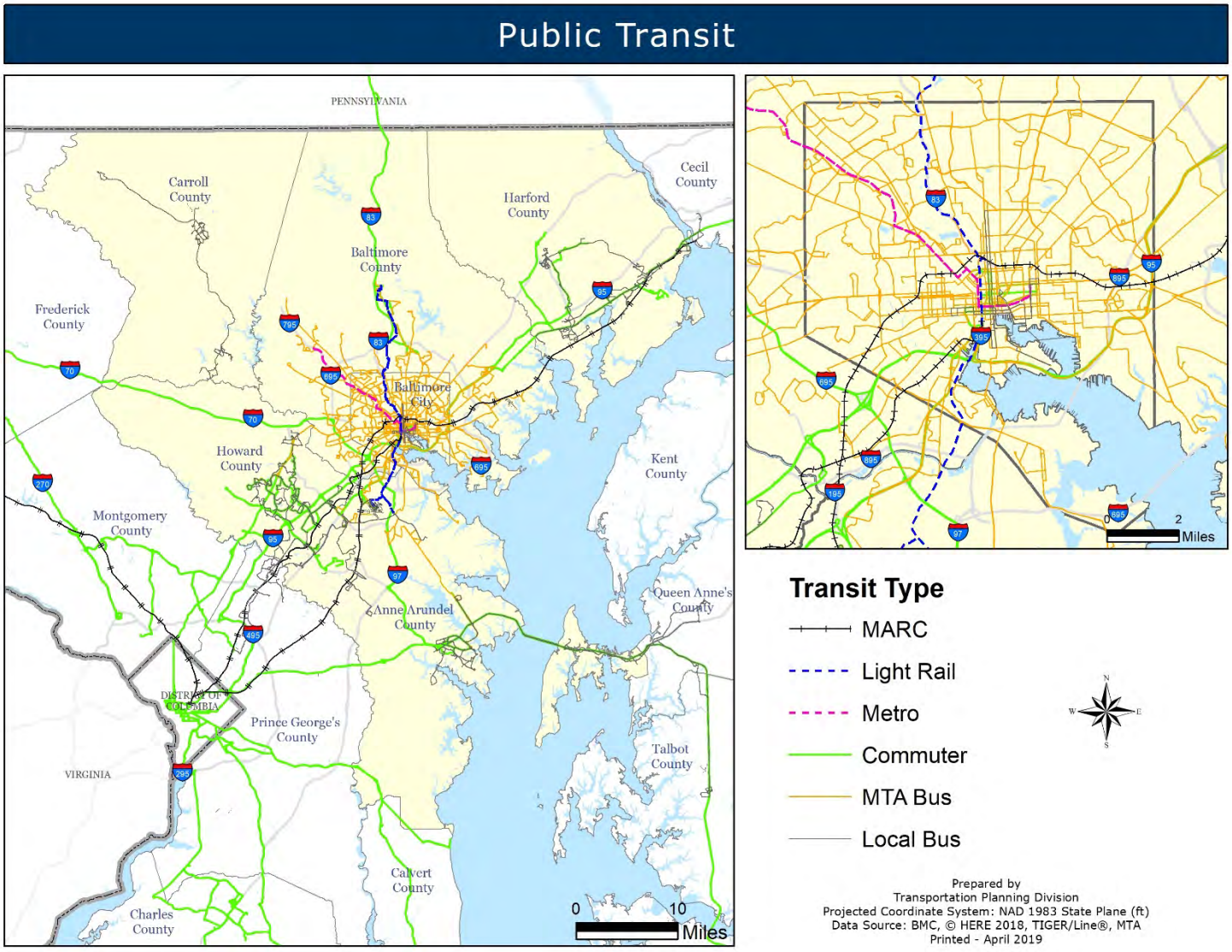


Exhibit I-3: The Baltimore Region – Transit



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 #20-4 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 2020-2023 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.

Performance measures have been developed for transit asset management, 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 by the November 2018 deadline with the exception of those for transit safety. The BRTB has not yet adopted these targets but will do so once MDOT has set its transit safety targets. All of the measures and targets will be used to 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 long-range plan 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 generated as a result of this forecasted growth. It demonstrates how the existing and committed transportation network likely will 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 2020-2023 TIP "flow" from the conforming Plan, 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 financially reasonable TIP. Projects included in the 2020-2023 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; while ❸ Local governments also provide documentation of the same financial reasonableness requirements to match the federal funds requested for locally sponsored projects.

Federal law requires that projects proposed for inclusion in plans and programs be analyzed to ensure that the fiscal resources required to construct them are reasonably expected to be available within the timeframe specified. With the additional revenue projected as a result of passage of the Transportation Infrastructure Investment Act of 2013, the funding will be available to advance some projects. Within this context, the proposed projects have been assessed and found to meet the fiscal constraint requirement.

• 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 projects proposed in the TIP can be funded. 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. A schedule of key dates in the development of the TIP was provided to the members of the Public Advisory Committee (PAC) along with a description of the information available in the TIP. Opportunities to comment on the draft list were publicized primarily through electronic means and PAC meetings, with outreach work undertaken by public involvement staff.

The draft TIP was made available online. Seven public meetings were held for the public to comment on the draft

TIP (one in each jurisdiction) along with a webinar. Flyers announcing public meetings were advertised in local papers, on the Baltimore Metropolitan Council (BMC) website, and on BMC social media accounts. PAC members were also asked to distribute the flyer to their constituencies. In addition, the public was able to address the BRTB at its July 2019 meeting. Written comments by mail, email or social media are accepted during the public review period. A summary of all comments received, both verbal and written, BRTB responses, and the public participation notices are included in Appendix G.

The public participation process for the TIP also meets the FTA public participation requirements for the MTA's Program of Projects. The Maryland Transit Administration (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 2020-2023 TIP to satisfy the public participation requirements associated with development of the 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 2018 obligated listing lists all federal funds obligated in the Baltimore region from July 1, 2017 – June 30, 2018.[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. PBPP is detailed further in section II.G.

[3] The full obligated listing is available here: https://www.baltometro.org/sites/default/files/bmc_documents/general/transportation/tip/18-21/2018_FederalAidObligations.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 2018 threshold for a four-person household with two dependents is $25,465. 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 long-range plan 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, 10.2% of households in the Baltimore region fall below the poverty line compared to 10.5% 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 4.8% of

households in Howard County to 20.8% of households in Baltimore City. In total, 106,144 out of the 1,040,704 households in the Baltimore region, or 10.2%, have 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	205,395	11,818	5.8%
Baltimore City	239,791	49,940	20.8%
Baltimore Co	312,859	27,209	8.7%
Carroll	60,432	3,174	5.3%
Harford	92,895	7,539	8.1%
Howard	111,337	5,385	4.8%
Queen Anne's	17,995	1,079	6.0%
BRTB Region Total	**1,040,704**	**106,144**	**10.2%**

Source: U.S. Census Bureau, 2013-2017 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 10.2% in Carroll County to 72.4% in Baltimore City. In total, minorities make up 42.5% of the Baltimore region population while white, non-Hispanics make up the remaining 57.5%. Exhibit II-1 at the end of this section summarizes minority individuals by Hispanic/Latino origin and race.

Table 2. Minorities by Jurisdiction

Jurisdiction	Minority Population	White, non Hispanic Population	Minority Share	White, non Hispanic Share
Anne Arundel	171,461	393,139	30.4%	69.6%
Baltimore City	448,880	170,916	72.4%	27.6%
Baltimore Co	341,945	486,692	41.3%	58.7%
Carroll	17,022	150,297	10.2%	89.8%
Harford	57,623	192,509	23.0%	77.0%
Howard	143,426	169,069	45.9%	54.1%
Queen Anne's	6,582	42,489	13.4%	86.6%
BRTB Region Total	**1,186,939**	**1,605,111**	**42.5%**	**57.5%**

Source: U.S. Census Bureau, 2013-2017 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 10.2%. Thus, TAZs with a concentration of households in poverty greater than 10.2% are considered low-income TAZs for EJ purposes. Similarly, TAZs with a concentration of minorities greater than the regional average of 42.5% 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 long-range transportation plan, *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*. 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 will continue to evaluate methods used by other MPOs as well as guidance issued by FHWA to identify similarly robust methods for environmental justice analysis of the TIP.

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

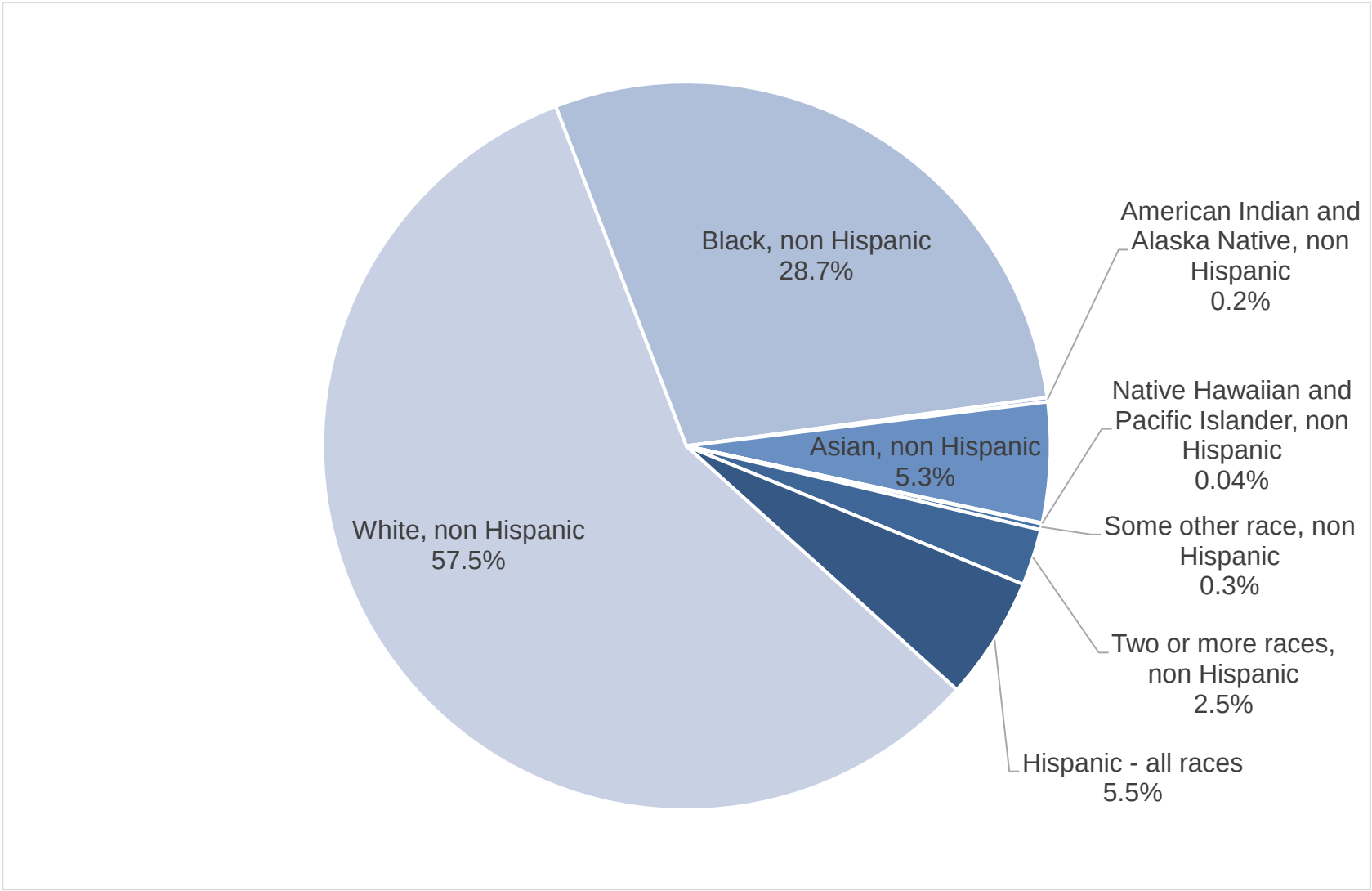


Exhibit II-2: Household Poverty by TAZ

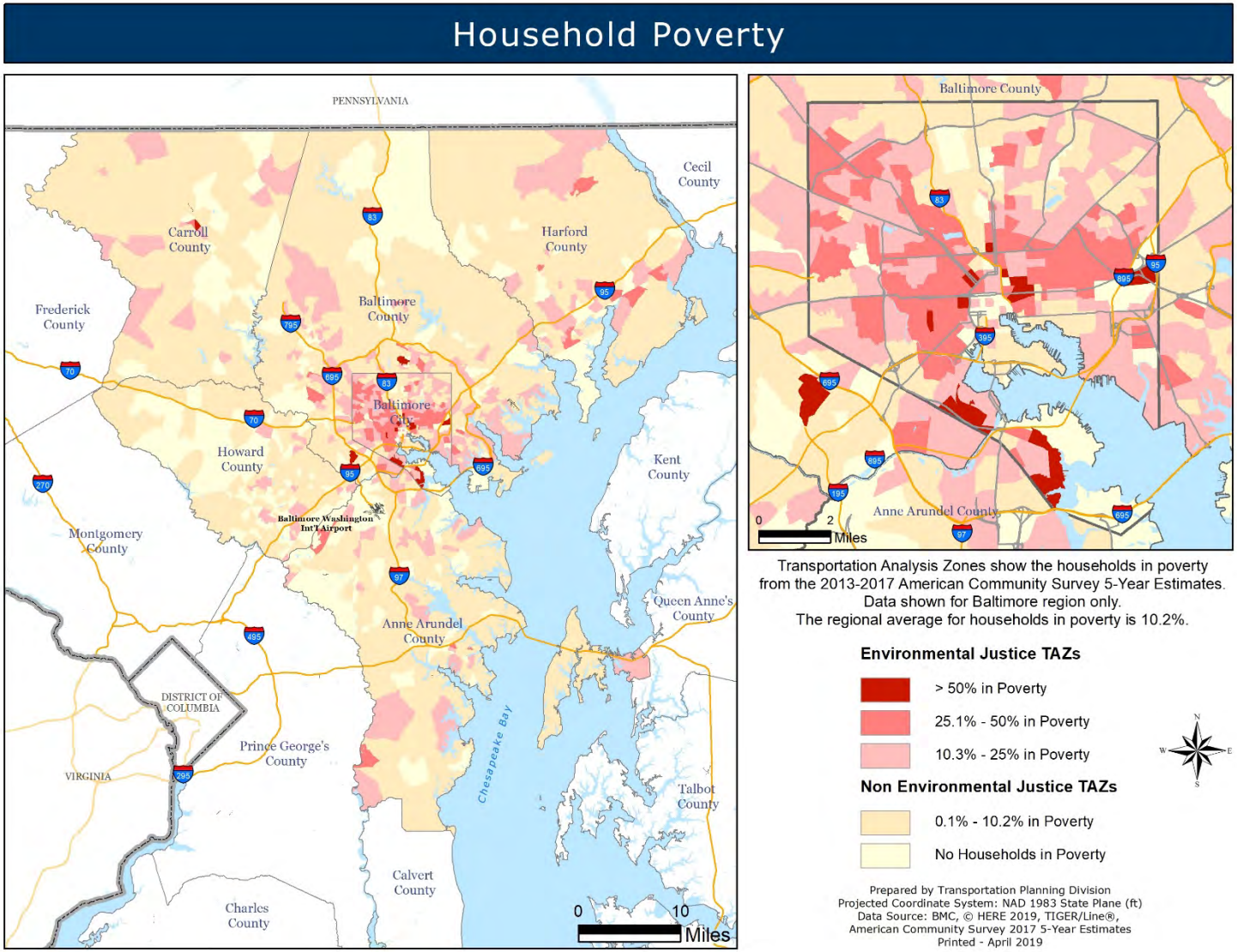


Exhibit II-3: Minority Population by TAZ

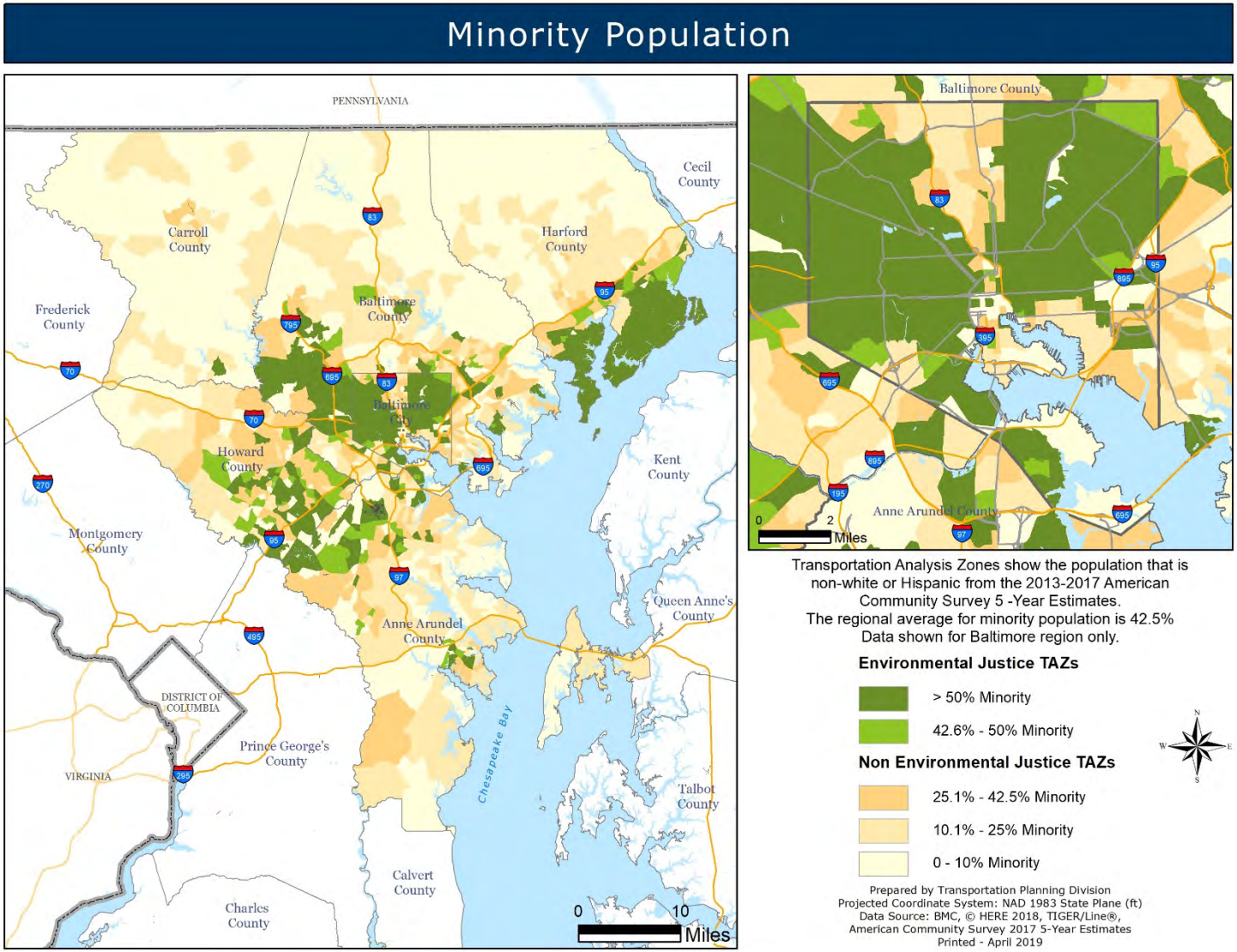
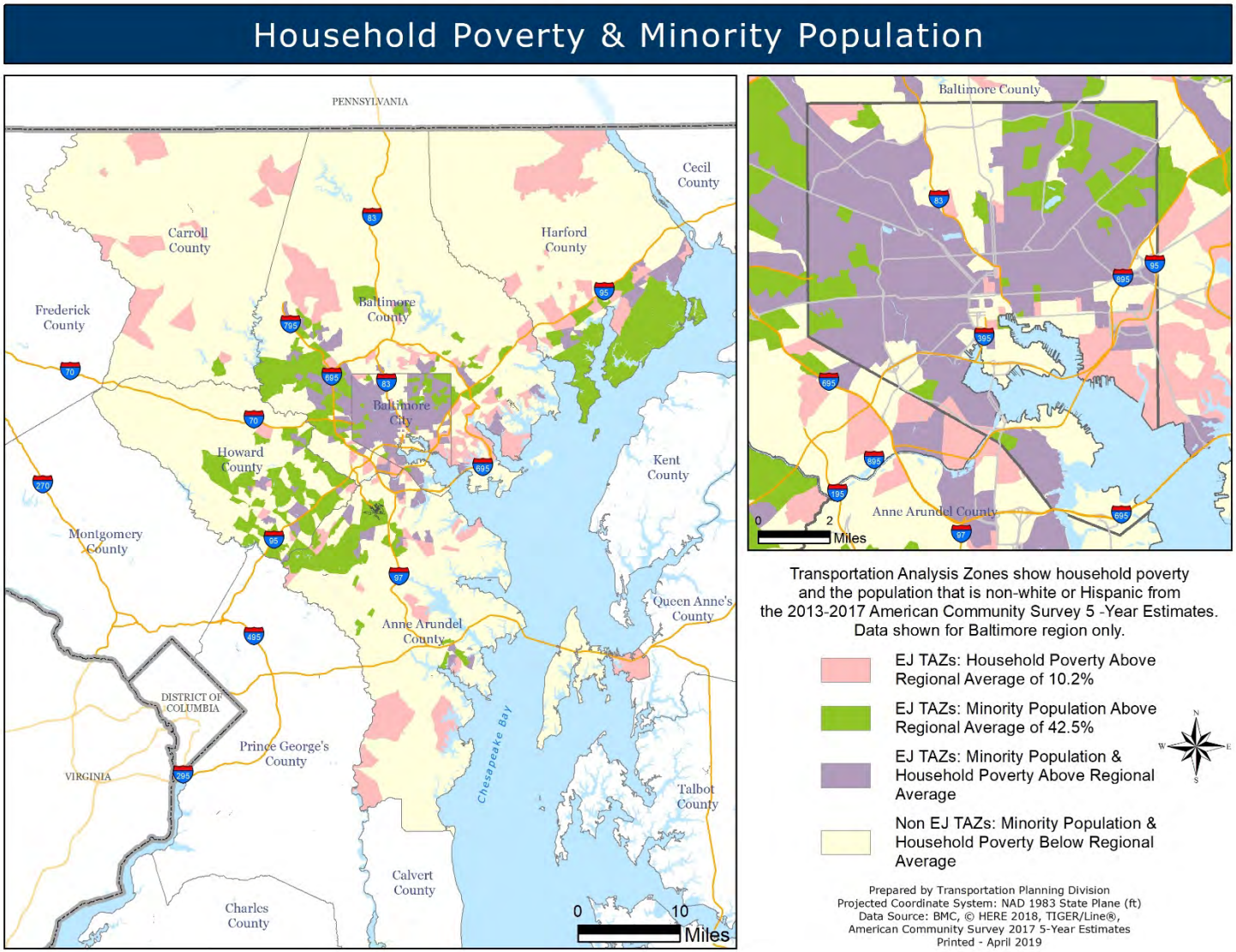


Exhibit II-4: Environmental Justice TAZs by Type



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 Maryland Transit Administration (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 MTA, for development of the Baltimore Region Coordinated Public Transit-Human Services Transportation Plan. MTA and the BRTB last updated the Baltimore Region Coordinated Transportation Plan in October 2015.

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

MD-JARC

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.

D. Additional Programs for Seniors and Persons with Disabilities

In addition to administering the FTA Section 5310 Program, MTA provides paratransit service for the elderly and persons with disabilities. 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.

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, MTA initiated two programs: MTA Taxi Access II Service and the Senior Ride Program.

MTA Taxi Access II Service

The MTA Taxi Access II Service is open to eligible 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. 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, 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. 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.

E. Status of Projects from the 2019-2022 TIP and New Projects in the 2020-2023 TIP

As mandated by the federal regulations for metropolitan planning, major projects from the previous TIP, the 2019-2022 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 2019-2022 TIP by jurisdiction including the TIP ID, year of operation in the 2019-2022 TIP, year of operation in the 2020-2023 TIP (if any), and status of the project.

In Table II-1, the 2020-2023 TIP year of operation is sometimes listed 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 2020-2023 TIP. Additional details on these projects are available in Chapter VI.

Table II-1: Status of Projects from the 2019-2022 TIP				
		Year of Operation		
Project	**TIP ID**	**19-22 TIP**	**20-23 TIP**	**Project Status**
Anne Arundel County				
Hanover Road Corridor Improvement	11-1801-42	2021	2022	60% design plans anticipated summer 2019. Land acquistion underway.
Furnace Avenue Bridge over Deep Run	11-1103-13	2020	2022	30% design plans anticipated summer 2019. Bids expected summer 2020.
Harwood Road Bridge over Stocketts Run	11-1208-13	2021	2022	60% design plans anticipated spring 2019. Land acquisition being finalized. Bids expected winter 2020.
Magothy Bridge Road Bridge over Magothy River	11-1402-13	2020	2022	90% design plans anticipated winter 2019. Project is expected to advertise summer 2020.
O'Connor Road Bridge over Deep Run	11-1403-13	2020	2021	60% design plans anticipated summer 2020. Project is expected to advertise summer 2021.
McKendree Road Culvert over Lyons Creek	11-1601-19	2023	2022	60% design plans anticipated fall 2019. Project is expected to advertise winter 2020.
Polling House Road Bridge over Rock Branch	11-1602-13	2022	2023	Design is expected to begin summer 2019. Project is expected to advertise winter 2022.
Mountain Road Corridor Revitalization – Phase I	11-1802-19	2022	XX	LOA executed with SHA 3/2018. Awaiting 30% design plans (anticipated winter 2019). No further funds are programmed at this point.
Baltimore City				
Citywide Bicycle and Pedestrian Improvements	12-1217-25	Ongoing	Ongoing	Various projects ongoing
Citywide Traffic Signals, Intelligent Transportation System and Safety Improvements	12-1218-07	Ongoing	Ongoing	Ongoing. Carryover funding from previous years extended through FY 2022.
Transportation Management Center Upgrade	12-1701-04	2021	2021	Project anticipated to be advertised in FY 2020
Citywide Road Resurfacing - Federal Aid Program	12-0207-11	Ongoing	XX	On hold. Projects are on hold due to lack of funding.
Perring Parkway Ramp and Hillen Road Bridge	12-1215-13	2022	2022	95% design stage. Project anticipated to advertise for construction in FY 2022.
Sisson Street Bridge over CSX Railroad	12-1216-13	2022	2022	95% Design stage. Project anticipated to advertise for construction in FY 2020.
Citywide Guide Sign Replacement	12-1222-19	Ongoing	XX	Project is on hold due to lack of funding.
Wilkens Avenue Bridge over Gwynns Falls	12-1403-13	2021	2023	95% Design Stage. Project anticipated to advertise for construction in the 2nd quarter of FY 2020. The year of operation has been delayed to 2023 due to unforeseen issues related to utilities and right-of-way since the project passes through a park.

Table II-1: Status of Projects from the 2019-2022 TIP				
		Year of Operation		
Project	**TIP ID**	**19-22 TIP**	**20-23 TIP**	**Project Status**
Baltimore City (continued)				
Belair Road Complete Streets	12-1404-11	2022	2024	Phase 1 advertised for construction in April 2019. Phase 2 is at the pre-proposal stage. The year of operation has shifted to 2024 due to funding delays.
Greenmount Avenue Reconstruction: 43rd Street to 29th Street	12-1408-12	2020	XX	Project advertised for construction in FY 2019, with completion anticipated by 2022.
Citywide System Preservation	12-1414-11	Ongoing	Ongoing	Projects ongoing. Clinton Street project anticipated to advertise for construction in FY 2020.
Citywide Concrete Roadway Slab Repairs	12-1416-11	Ongoing	XX	Project is not requesting funds. Patapsco Avenue is now a standalone project with TIP ID 12-2012-11. Coldspring Lane is not funded.
Orleans Street Bridge over I-83 and City Streets	12-1601-13	2023	2028	Proposal Stage. Construction advertisement anticipated in FY 2026. The year of operation has shifted to 2028 to allow adequate time to complete the study, design, advertisement, and construction of the project.
Remington Avenue Bridge over Stony Run	12-1602-13	2022	2024	60% Design Stage. Project anticipated to advertise for construction in FY 2022. The year of operation has shifted to 2024 due to funding delays.
Radecke Avenue over Moores Run	12-1603-13	2022	2026	The year of operation has shifted to 2026 due to funding delays and to allow sufficient time to obtain permits. Project anticipated to advertise for construction in FY 2023.
I-83 Concrete Deck Mill and Resurface	12-1604-13	2023	2025	Design anticipated to be initiated in FY 2020, with construction advertisement in FY 2024. The year of operation has shifted to 2025 due to funding delays.
Moravia Road Ramp Bridge over Pulaski Highway	12-1605-13	2023	2026	Design anticipated to be initiated in FY 2022, with construction advertisement in FY 2024. The year of operation has shifted to 2026 due to funding delays.
Citywide Road Reconstruction	12-1607-12	Ongoing	XX	Projects with funding now have their own TIP sheets. These include: 25th Street from Greenmount Avenue to Kirk Avenue (12-2001-11); Park Heights Avenue from West Rogers Avenue to Strathmore Avenue (12-2011-11); Fremont Avenue from Lafayette Avenue to Presstman Street (12-2007-11); and Madison Street from North Milton Avenue to Edison Highway (12-2010-11).
Hanover Street Bridge Deck Repair over Middle Branch	12-1705-13	2022	XX	Design stage for bridge deck repairs. Project is between funding stages as it is not currently funded for construction, but repairs are anticipated to be completed by 2025.

Table II-1: Status of Projects from the 2019-2022 TIP				
		Year of Operation		
Project	**TIP ID**	**19-22 TIP**	**20-23 TIP**	**Project Status**
Baltimore City (continued)				
MLK Blvd. and Howard St. Intersection Improvements	12-1706-11	2021	2024	Design anticipated to be initiated in FY 2020, with construction advertisement in FY 2022. The project requires rescoping as it was originally tied to the State Center project that was cancelled by the State. As a result, completion of the project has been delayed to 2024.
Monroe Street Ramp over CSX and Russell Street over CSX	12-1801-13	2022	XX	65% Design Stage. Project anticipated to advertise for construction in FY 2024, beyond the timeframe covered by this TIP. The year of operation has shifted to 2027 due to funding delays.
Baltimore City Locked Gate Interstate Access Point Approval (IAPA)	12-1201-99	2021	2021	Design is nearly complete. Final permitting ongoing. Amtrak is currently working with the city and state to accurately model any potential flooding impacts in the Jones Falls area. Impacts are anticipated to be minimal. Project is anticipated to be complete in 2021.
Pavement Management System	12-1206-99	2020	XX	Project is on hold due to lack of funds
Capital Project Delivery Services	12-1901-99	Ongoing	Ongoing	Ongoing. Carryover funding from FY19 was added to FY20.
Baltimore County				
Dogwood Road Bridge No. B-0072 Over Dogwood Run	13-0001-13	2021	2022	Engineering is nearly complete. The project has been extensively delayed by right of way acquisition which includes a land swap with the State of Maryland. Once a right of way clearance date is established, some re-engineering will be required due to changes in the stream alignment. The current design is based on field surveys that are roughly 20 years old. The year of operation has been set assuming construction in 2021.
Mohrs Lane Bridge No. B-0143 over CSX Railroad	13-0803-13	2022	2022	Engineering is nearly complete. Construction advertisement currently anticipated for 11/2019. This project has been delayed due to right of way acquisition and the 11/2019 advertisement date is contingent on clearing right of way.
Gunpowder Road Bridge No. B-0409	13-1005-13	2025	2025	Future project, no work has been undertaken
Hammonds Ferry Road Bridge No. B-0100 over CSX Railroad	13-1012-13	2021	2022	Engineering is currently underway. However, the production schedule for this project has been pushed due to other County bridge priorities. Construction currently anticipated in FY 2021.

Table II-1: Status of Projects from the 2019-2022 TIP				
		Year of Operation		
Project	**TIP ID**	**19-22 TIP**	**20-23 TIP**	**Project Status**
Baltimore County (continued)				
Lansdowne Boulevard Bridge No. B-0113 over CSX Railroad	13-1105-13	2026	2026	Future project, no work has been undertaken
Piney Grove Road Bridge No. B-0140 over CSX railroad	13-1107-13	2025	2025	Future project, no work has been undertaken
Peninsula Expressway Bridge No. B-0119 over CSX Railroad	13-1108-13	2024	2027	Future project, no work has been undertaken. Project schedule has been pushed due to other County bridge projects having higher priority and need.
Old Ingleside Avenue Bridge No. B-0096 over Dead Run	13-1202-13	2023	2025	Future project, no work has been started. Project schedule has been pushed due to other County bridge projects having higher priority and need.
Old Court Road Bridge No. B-0237 over Bens Run	13-1204-13	2020	2020	Engineering is nearing completion with an anticipated construction advertisement of 6/2019
Sparks Road Bridge No. B-0018 over Gunpowder Falls	13-1206-13	2021	2022	Future federal aid bridge painting project. No work has been undertaken. Project schedule has been pushed due to other County bridge projects having higher priority and need.
Golden Ring Road Bridge No. B-0110 over Stemmers Run	13-1208-13	2025	2026	Future project, no work has been undertaken. Project schedule has been pushed due to other County bridge projects having higher priority and need.
Rolling Road Bridge No. B-0358 over Branch of Dead Run	13-1209-13	2023	2027	Future project, no work has been undertaken. Project schedule has been pushed due to other County bridge projects having higher priority and need.
Forest Park Avenue N. Bridge No. B-0097 over Dead Run and Dogwood Road	13-1210-13	2024	2024	Future project, no work has been undertaken
Rossville Blvd. Bridge No. B-0132 over Amtrak & Orems Rd.	13-1701-13	2024	2025	Future project, no work has been undertaken. Project schedule been pushed due to other County bridge projects having higher priority and need.
Bridge Inspection Program	13-8901-14	Ongoing	Ongoing	Ongoing
Mid-Atlantic Multimodal Transportation Hub	13-1901-83	2022	XX	NEPA completed and approved on 11/13/18. Grant and sub-grant approval is imminent. Project dredging has begun using matching funds. Project closeout currently schduled for 9/2022.
Carroll County				
Bixler Church Road Bridge over Big Pipe Creek	14-1101-13	2019	2020	Final PE stages. Advertisement planned for May 2019.
Shepherds Mill Road Bridge over Little Pipe Creek	14-1102-13	2020	2020	Structural Design phase. Advertisement planned for May 2020.

Table II-1: Status of Projects from the 2019-2022 TIP				
		Year of Operation		
Project	**TIP ID**	**19-22 TIP**	**20-23 TIP**	**Project Status**
Carroll County (continued)				
Stone Chapel Road Bridge over Little Pipe Creek	14-1103-13	2021	2022	Administrative preliminary design paperwork sent in May 2018. Engineering has not started.
Babylon Road Bridge over Silver Run	14-1601-13	2022	2023	Preliminary Type, Size, and Location submission due early CY19.
Gaither Road Bridge over South Branch Patapsco River	14-1602-13	2022	2023	Engineering planned to begin in FY20
McKinstrys Mill Road Bridge over Sam's Creek	14-1603-13	2021	2022	Administrative preliminary design paperwork sent in May 2018. Engineering has not started.
Bear Run Road Bridge over Bear Branch	14-1801-13	2024	XX	The project has been removed from the TIP. Major structural rehabilitation in lieu of replacement was completed with local funds.
Hughes Shop Road Bridge over Bear Branch	14-1802-13	2022	2022	Administrative preliminary design paperwork sent in May 2018. Engineering has not started.
Bridge Inspection Program	14-9401-14	Ongoing	Ongoing	Biennial cycle began in April 2019
Harford County				
Abingdon Road Bridge #169 over CSX Railroad	15-1001-13	2021	2021	In the current TIP and expected to be in operation in FY21
Chestnut Hill Bridge #40	15-1101-13	2019	2020	In the current TIP. Project was delayed by design contract requirement. Harford County is in the process of acquiring r/w for the project and anticipates advertising by July 2019.
Phillips Mill Road Bridge #70 over East Branch tributary	15-1102-13	2020	2020	In the current TIP. Land acquisition complete. Submittal of plans, specifications, and estimates to SHA 4/19 with anticipated advertisement in July 2019. Project is expected to be in operation in FY20.
Robinson Mill Road Bridge #154 over Broad Creek	15-1401-13	2019	XX	Project is not requesting further funds. Design and R/W acquisitions are complete. Project advertised for construction winter 2018/spring 2019.
Stafford Road Bridge #24 over Deer Creek	15-1501-13	2021	2021	In the current TIP and expected to be in operation in FY21
Glenville Road Bridge #30	15-1601-13	2023	2023	Harford County is proceeding with the project and will be initiating design in Spring 2019
Bridge Inspection Program	15-9411-14	Ongoing	Ongoing	Ongoing
Howard County				
Dorsey Run Road: MD 175 to CSX Railroad Spur	16-1403-41	2021	2023	Project is currently in design, with completion expected in spring 2023. The year of operation has shifted to 2023 due to funding delays.

Table II-1: Status of Projects from the 2019-2022 TIP				
		Year of Operation		
Project	**TIP ID**	**19-22 TIP**	**20-23 TIP**	**Project Status**
Howard County (continued)				
Guilford Road: US 1 to Dorsey Run Road	16-1405-41	2021	2023	The project is currently in design and is expected to be completed in 2023
MD 175 at Oakland Mills Road Interchange	16-1407-46	2020	2022	Phase I involved improvements in Blandair Park and was completed in 2018. Phase II is the grade-separated bridge and ramps. Phase II is currently in design and is expected to be completed in spring 2022.
Snowden River Parkway: Broken Land Parkway to Oakland Mills Road	16-1410-41	2023	2023	The project is currently being phased due to the right of way limitations along the corridor
US 29/Broken Land Parkway Interchange and North South Connector Road	16-1901-42	2022	2022	The project is in conceptual design moving towards preliminary design. The Howard Hughes Corporation is managing the project, with an estimated completion date of 2022. This project is funded through the TIF process.
Bridge Repairs and Deck Replacement	16-0436-13	Ongoing	Ongoing	All of the projects are in design except for the Pfefferkorn Road Bridge. The following bridges are scheduled to be completed in fall 2020: River Road, Henryton Road, Pindell School Road, & Daisy Road. The Pefferkorn Road Bridge is expected to be completed in fall 2023. The Carroll Mill Road bridge is expected to be completed in fall 2022.
MDOT – Office of the Secretary				
State Safety Oversight	90-1401-39	Ongoing	Ongoing	Ongoing project
Baltimore-Washington Superconducting Maglev (SCMAGLEV) Project	90-1901-99	NA	NA	As of June 2019, the NEPA study is in the mid-stage of the draft Environmental Statement development. The FRA's preferred alignment and station locations will be shared with contributing and participating agencies in mid-summer 2019, with a goal of sharing with the public in fall 2019.
Port of Baltimore Enhancements	92-1401-83	2018	2018	Contracts for dredging, storm drain relocation, and rail are complete. The Fairfield basin filling contract is also complete. The contract for developing the Fairfield basin was awarded in the summer of 2018.
Maryland Transportation Authority				
I-95 Fort McHenry Tunnel: Moravia Road to Tunnel Improvements	22-1601-41	2018	2018	Project opened to traffic for beneficial use in 2018

Table II-1: Status of Projects from the 2019-2022 TIP				
		Year of Operation		
Project	**TIP ID**	**19-22 TIP**	**20-23 TIP**	**Project Status**
Maryland Transportation Authority (continued)				
I-95 Fort McHenry Tunnel: Port Covington Access	22-1901-45	2029	2029	MDTA and Baltimore City DOT continue to work closely with FHWA to advance work, to the extent possible, to achieve environmental clearance for the project. A revised draft of the Interstate Access Point Approval (IAPA) is currently under review by FHWA. Section 106 coordination and consultation continues with Maryland Historical Trust.
I-95 Express Toll Lane Northbound Extension	25-1801-41	2026	2026	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. Phase I improvements have been developed into 10 construction contracts. Construction started in January 2019 and is anticipated to be completed in fall 2023. 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 improvements are being developed into approximately 12 construction contracts. Construction is anticipated to begin in Spring 2021 and is anticipated to be completed in Summer 2026.
MTA - Transit				
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
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	Project is ongoing and on schedule
Small Urban Transit Systems – Operating Assistance	40-0104-61	Ongoing	Ongoing	Project is ongoing and on schedule
Kirk Bus Facility Replacement - Phase 1 & 2	40-1203-65	2021	2021	Building and site demolition completed. Utility work ongoing. Community outreach continues. Project completion anticipated in 2021.
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

Table II-1: Status of Projects from the 2019-2022 TIP				
		Year of Operation		
Project	**TIP ID**	**19-22 TIP**	**20-23 TIP**	**Project Status**
MTA - Transit (continued)				
Agencywide System Preservation and Improvement	40-1801-64	Ongoing	Ongoing	Preservation project ongoing
Bus System Preservation and Improvement	40-1803-64	Ongoing	Ongoing	Completion of Phase II of Transit Signal Priority vehicle installation anticipated in September 2019. Other projects are ongoing.
Metro and Light Rail Rolling Stock Overhauls and Replacement	40-1804-63	Ongoing	Ongoing	Delivery of last Light Rail vehicle anticipated in June 2022. Factory acceptance testing of the Metro fleet scheduled for early CY19 with anticipated delivery of first car in August 2020. Completion of Metro fleet anticipated in May 2024.
Metro and Light Rail System Preservation and Improvement	40-1805-64	Ongoing	Ongoing	Preservation projects ongoing
Beyond the Bus Stop	40-1901-69	2021	XX	MTA is currently working on developing task estimates. Preliminary engineering is on schedule to start during in summer 2019, with completion anticipated in 2021. No further funds requested.
Rural Transit Systems - Operating Assistance	40-9204-61	Ongoing	Ongoing	Project is ongoing and on schedule
MTA - Commuter Rail				
MARC Rolling Stock Overhauls and Replacement	70-1501-53	Ongoing	Ongoing	Delivery of four overhauled MARC coaches anticipated in early CY19, with delivery of final car anticipated by the end of FY21. Delivery of first overhauled MARC locomotives anticipated in early FY20, with delivery of final locomotive anticipated by the end of FY22. Spec development is underway for some future locomotive overhaul projects.
MARC Improvements	70-1502-54	Ongoing	Ongoing	Preservation projects ongoing
MARC Facilities	70-1503-55	Ongoing	Ongoing	BWI station renovations completed in May 2019. The project has no federal funding in FY20, so it has been removed from this TIP sheet. Target acquisition of the Riverside maintenance facility is early CY20. Earliest completion of MARC Martin State Airport is the end of FY20.
State Highway Administration				
Areawide Transportation Alternatives Projects	60-9903-29	Ongoing	Ongoing	Ongoing
Areawide Environmental Projects	60-9506-38	Ongoing	Ongoing	Ongoing

Table II-1: Status of Projects from the 2019-2022 TIP				
		Year of Operation		
Project	**TIP ID**	**19-22 TIP**	**20-23 TIP**	**Project Status**
State Highway Administration (continued)				
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: MD 295 to MD 170	61-0605-41	2025	XX	The planning project is complete and will be engineered and constructed in phases through breakout projects. Engineering work on the remaining phases will cease in FY 19.
MD 198: MD 295 to MD 32	61-1403-41	2030	2034	The first breakout project from the planning study, Phase 1 (MD 198 at BW Parkway), is currently on hold. There is continued coordination with NPS over potential solutions to the bridge over the BW Parkway.
US 50: MD 70 to MD 2	61-1404-41	2019	2018	Construction complete with remaining State funding for right-of-way acquisition. The improvements opened to traffic in May 2018.
MD 175: Disney Road to Reece Road	61-1601-41	2019	2020	Construction continues with updated open to service date of 2020. Open to service date postponed due to additional utility work.
MD 175: National Business Parkway to McCarron Court	61-1701-41	2021	2021	Construction underway
I-695 at Cromwell Bridge Road – Drainage Improvement	63-1801-38	2020	2020	Construction ongoing
MD 140: Painters Mill Road to Owings Mills Boulevard – Phase 2	63-0802-41	2025	2025	Engineering ongoing
I-795: Dolfield Boulevard Interchange	63-0803-46	2026	2040	Engineering ongoing. The year of operation has changed due to shifting priorities and to be consistent with the updated long-range plan, *Maximize2045*.
MD 140: Garrison View Road to Painters Mill Road – Phase 1	63-1203-41	2019	2019	Construction underway. Completion anticipated in October 2019.
I-695: US 40 to MD 144	63-1601-41	2021	2021	Construction ongoing
I-695 Bridge Replacements at Benson Ave and US 1	63-1602-43	2018	2018	Project is open to service with remaining State funding for right-of-way acquisition

Table II-1: Status of Projects from the 2019-2022 TIP				
		Year of Operation		
Project	**TIP ID**	**19-22 TIP**	**20-23 TIP**	**Project Status**
State Highway Administration (continued)				
I-695: Bridge Replacement on Crosby Road	63-1702-43	2019	XX	No additional funding programmed. Project will be complete in June 2019.
I-695: I-70 to MD 43	63-1802-41	2023	2024	Engineering ongoing
I-83: Bridge Replacement over Padonia Road	63-1701-13	2021	2021	Construction underway
MD 137: Bridge Replacement over I-83	63-1703-13	2018	2018	Construction complete with remaining State funding for right-of-way acquisition
US 1: Bridge Replacement over CSX	63-1704-13	2021	2021	Construction ongoing
US 40: Bridge Replacements over Little & Big Gunpowder Falls	63-1706-13	2020	2021	Construction underway. Project was delayed due to an environmental permitting issue.
MD 45: Padonia Road to Wight Avenue	63-1707-11	2019	2021	Project delayed due to an environmental permitting issue. Utility relocation work underway.
MD 30 Business: North Woods Trail to CSX Railroad (Hampstead Community Safety & Enhancement)	64-1401-19	2020	2020	Construction ongoing
MD 86: Bridge Replacement over Gunpowder Falls	64-1701-13	2019	2021	Construction delayed to accommodate utility relocation.
MD 496: Bridge Replacement over Big Pipe Creek	64-1702-13	2018	2018	Open to service with continued funding for utility work
US 40: MD 7 & MD 159 Intersection Reconstruction - Phase 2	65-1402-41	2019	2019	Construction ongoing. Completion anticipated October 2019
MD 24: South of Stirrup Run Culvert to Deer Creek Bridge, Section G	65-1601-12	TBD	TBD	Engineering ongoing
US 29: Middle Patuxent River to Seneca Drive – Phase 2	66-1406-41	2030	2030	Engineering ongoing
MD 32: MD 108 to Linden Church Road	66-1602-41	2020	2019	Project will open to service in fall 2019
MD 32: Linden Church Road to I-70, Capacity & Safety Improvements	66-1703-41	2021	2022	Design Build notice to proceed issued in January 2019
I-95: Active Traffic Management	66-1801-41	TBD	TBD	Engineering ongoing

Table II-2: New Projects in the 2020-2023 TIP

Agency	Project	TIP ID	Project Category	Year of Operation
Baltimore City	25th Street Rehabilitation from Greenmount Avenue to Kirk Avenue	12-2001-11	Highway Preservation	2025
Baltimore City	41st Street over I-83, MTA, and Jones Falls	12-2002-13	Highway Preservation	2030
Baltimore City	Citywide Asset Management	12-2003-19	Highway Preservation	Ongoing
Baltimore City	Baltimore Street from Howard Street to President Street	12-2004-11	Highway Preservation	2026
Baltimore City	Brehms Lane over Herring Run	12-2005-13	Highway Preservation	2027
Baltimore City	Fremont Avenue Rehabilitation from Lafayette Avenue to Presstman Street	12-2007-11	Highway Preservation	2025
Baltimore City	Hanover Street over CSX	12-2008-13	Highway Preservation	2027
Baltimore City	Howard Street over I-83, CSX, Amtrak, and Jones Falls	12-2009-13	Highway Preservation	2030
Baltimore City	Madison Street Rehabilitation from North Milton Avenue to Edison Highway	12-2010-11	Highway Preservation	2026
Baltimore City	Park Heights Avenue from West Rogers Avenue to Strathmore Avenue	12-2011-11	Highway Preservation	2025
Baltimore City	Patapsco Avenue from Magnolia Avenue to Patapsco River Bridge	12-2012-11	Highway Preservation	2026
Baltimore City	Pennington Avenue Rehabilitation from Birch Street to East Ordnance Road	12-2013-11	Highway Preservation	2024
Baltimore City	Waterview Avenue over Ramp to 295	12-2015-13	Highway Preservation	2027
Baltimore City	Citywide Transportation Plan	12-2006-99	Miscellaneous	2021
Baltimore City	Citywide Transportation Studies	12-2014-99	Miscellaneous	Ongoing
Baltimore County	Phoenix Road Bridge No. BC6507 over Gunpowder Falls & NCR Trail	13-2001-13	Highway Preservation	2022
Harford County	Grier Nursery Road Bridge #43	15-2001-13	Highway Preservation	2023
Harford County	Hookers Mill Road Bridge #13	15-2002-13	Highway Preservation	2022
Howard County	Bus Rapid Transit	16-2001-67	Transit Capacity	NA
Maryland Port Administration	Seagirt Marine Terminal Modernization: Berth Improvements	32-2001-83	Ports	2021
State Highway Administration	MD 151/MD 151B: Bridge Replacements	63-2001-13	Highway Preservation	2023

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 2020-2023 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 2020-2023 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 9 cooperative socio-economic forecasts, which were endorsed by the BRTB on June 26, 2018. 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.

It should be noted that 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 improvements. 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. Out of the series of 25 federally mandated performance targets, the BRTB has adopted 21 to date.

Performance measures and targets cover several broad categories including transit asset management, 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. This is the first TIP reflecting the requirements surrounding Performance-Based Planning and Programming. 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 adopted in February 2019:

1) % 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) % 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: % 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. 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 service during peak regular service. Tier II targets are summarized in Table 6.

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 2020-2023 TIP includes twelve MDOT MTA projects related to the maintenance and rehabilitation of transit assets. Table 7 summarizes these projects. The 2020-2023 TIP includes a total of $938.405 million dollars in TAM related investments. Federal sources such as CMAQ and FTA sections 5307, 5337, and 5339 account for $750.721 million of this total. State funding accounts for the remaining $187.684 million. This investment represents 25.6% of the $3.66 billion programmed in the 2020-2023 TIP.

Table 7. 2020-2023 TIP Projects Related to Transit Asset Management

Project	TAM Target	Federal	Matching	Total TIP Funds
MARC Rolling Stock Overhauls and Replacement	Vehicles	$18,876	$4,719	$23,595
Bus and Paratransit Vehicle Overhaul and Replacement	Vehicles	$174,141	$43,537	$217,678
Metro and Light Rail Rolling Stock Overhauls and Replacement	Vehicles	$196,532	$49,135	$245,667
Bus and Rail Preventive Maintenance	Vehicles and Infrastructure	$156,416	$39,104	$195,520
MARC Facilities	Facilities	$64,735	$16,184	$80,919
Bus System Preservation and Improvement	Facilities	$2,400	$600	$3,000
Kirk Bus Facility Replacement - Phase 1 & 2	Facilities	$26,313	$6,578	$32,891
MARC Improvements	Facilities and Infrastructure	$41,682	$10,422	$52,104
Agencywide System Preservation and Improvement	Facilities and Infrastructure	$28,227	$7,057	$35,284
Metro and Light Rail System Preservation and Improvement	Facilities and Infrastructure	$37,455	$9,364	$46,819
Small Urban Transit Systems - Capital Assistance	Tier II Facilities and Vehicles	$1,280	$320	$1,600
Urban Transit Systems - Capital Assistance	Tier II Facilities and Vehicles	$2,664	$664	$3,328
Funding Total (in $1,000s)		**$750,721**	**$187,684**	**$938,405**

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 8 summarizes the five required highway safety performance measures and targets. The BRTB adopted these measures and targets in January 2018, with an update in January 2019. The rightmost column in Table 8 shows 2030 "TZD" targets. 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 8. Highway Safety Performance Measures and Targets

Measures related to funding under the Highway Safety Improvement Program (HSIP)					
Measure	2008 Baseline	2016 Actual	2017 Actual	2015-2019 Target	2030 TZD Target
Number of fatalities	242	228	230	184	121
Number of serious injuries	1,868	1,432	1,678	1,211	934
Fatality rate per 100 million VMT	0.93	0.83	0.83	0.70	0.47
Serious injury rate per 100 million VMT	7.21	5.23	6.05	4.62	3.60
Number of non-motorized (ped/bike) fatalities and serious injuries	286	342	366	222	143

Table 9 summarizes the three State Highway Administration (SHA) projects programming Highway Safety Improvement Program funds. HSIP funds are concentrated in three SHA areawide projects focusing on environmental improvements, resurfacing and rehabilitation, and safety and spot improvements. Areawide projects are broad projects that group together many smaller projects that do not affect air quality, otherwise known as exempt projects. The specific project list is not available from SHA, but Appendix D lists known projects that SHA will pursue as a part of these areawides in FY 2020. The 2020-2023 TIP includes $59.2 million in federal HSIP funds along with $14.8 million in matching funds for a total of $74 million. This investment represents 2% of the $3.66 billion programmed in the 2020-2023 TIP.

Table 9. 2020-2023 TIP Projects Programming HSIP Funds

Agency	**Project**	**HSIP Federal**	**HSIP Matching**	**Total TIP Funds**
SHA	Areawide Environmental Projects	$3,520	$880	$4,400
SHA	Areawide Resurfacing And Rehabilitation	$25,600	$6,400	$32,000
SHA	Areawide Safety And Spot Improvements	$30,080	$7,520	$37,600
Funding Total (in $1,000s)		**$59,200**	**$14,800**	**$74,000**

While the FHWA-required highway safety performance measures and targets are focused specifically on implementation of the Highway Safety Improvement Program, the 2020-2023 TIP includes many other projects identified by project sponsors as supporting the BRTB's highway safety goals. These projects program a variety of funds including other federal sources, state funds, and local funds. Appendix B includes a complete table relating 2020-2023 TIP projects to long-range plan goals and performance measures.

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) % 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 10 summarizes the traffic congestion and emissions performance measures and targets. The BRTB adopted the traffic congestion targets in May 2018 and the emissions target in June 2018.

Table 10. Traffic Congestion and Emissions Performance Targets

Measures related to funding under the Congestion Mitigation and Air Quality Improvement (CMAQ) Program			
Measure	2017 Baseline	2-year Targets (2018-2019)	4-Year Targets (2018-2021)
Annual per capita hours of peak-hour excessive delay (PHED)	20.2 hours	<21.8 hours	<22.6 hours
Percentage of non-SOV (single-occupancy vehicle) travel	24.85%	24.85%	24.85%
Reduction of VOC (kg/day)	6.19	6.59	7.87
Reduction of NOx (kb/day)	83.23	88.57	123.39

Table 11 summarizes the projects programming CMAQ funds. The 2020-2023 TIP includes $197.548 million in federal CMAQ funds along with $47.896 million in matching funds for a total of $245.444 million. This investment represents 6.7% of the $3.66 billion programmed in the 2020-2023 TIP.

MTA accounts for more than 90 percent of CMAQ funds programmed in the TIP, with SHA accounting for the remainder. MTA sponsored projects include two projects focused on the overhaul and replacement of transit and rail vehicles as well as funding for ridesharing in the Baltimore region. 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 SHA will pursue as a part of these areawides in FY 2020.

Table 11. 2020-2023 TIP Projects Programming CMAQ Funds

Agency	**Project**	**CMAQ Federal**	**CMAQ Matching**	**Total TIP Funds**
MTA	Bus and Paratransit Vehicle Overhaul and Replacement	$158,154	$39,540	$197,694
MTA	Metro and Light Rail Rolling Stock Overhauls and Replacement	$15,182	$3,796	$18,978
MTA	Ridesharing - Baltimore Region	$5,972	$0	$5,972
SHA	Areawide Congestion Management	$7,360	$1,840	$9,200
SHA	Areawide Safety And Spot Improvements	$10,880	$2,720	$13,600
Funding Total (in $1,000s)		**$197,548**	**$47,896**	**$245,444**

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 conditon 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 12 summarizes the six required performance measures and targets for pavement and bridge condition. The BRTB adopted these measures and targets in October 2018.

Table 12. 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 13 summarizes funds programmed in the 2020-2023 TIP for projects effecting 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 13, SHA's areawide projects for resurfacing and rehabilitation, safety and spot improvements, and urban reconstruction program 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 FY 2020 areawide projects are listed in Appendix D. These areawide TIP projects program $544.864 million in federal funds along with $136.216 million in matching funds for a total of $681.080 million. $243.104 million of the federal funds in these projects are programmed under the National Highway Performance Program.

Table 13. 2020-2023 TIP Projects Related to Pavement Condition

Agency	Project Name (Year of Operation)	Federal	Matching	Total TIP Funds
NHS Interstate Projects				
SHA	I-695: I-70 to MD 43 (2024)	$163,915	$80,330	$244,245
SHA	I-695: US 40 to MD 144 (2021)	$12,124	$17,608	$29,732
SHA	I-795: Dolfield Blvd Interchange (2040)	$2,572	$286	$2,858
NHS Interstate Subtotal (In $1,000s)		**$178,611**	**$98,224**	**$276,835**
Non-Interstate NHS Projects				
Baltimore City	Belair Road Complete Streets (2024)	$7,360	$1,840	$9,200
Baltimore City	Citywide System Preservation: Russell Street Rehabilitation	$2,400	$600	$3,000
Baltimore City	Madison St. Rehabilitation from North Milton Ave. to Edison Highway (2026)	$6,400	$1,600	$8,000
Baltimore City	MLK Blvd. and Howard St. Intersection Improvements (2024)	$4,800	$1,200	$6,000
Baltimore City	Patapsco Ave. from Magnolia Ave. to Patapsco River Bridge (2026)	$12,080	$3,020	$15,100
Baltimore City	Pennington Ave. Rehabilitation from Birch St. to East Ordnance Rd (2024)	$8,320	$2,080	$10,400
Howard County	Dorsey Run Road: MD 175 to CSX Railroad Spur (2023)	$0	$10,500	$10,500
SHA	MD 140: Garrison View Road to Painters Mill Road - Phase 1 (2019)	$0	$90	$90
SHA	MD 140: Painters Mill Road to Owings Mills Boulevard - Phase 2 (2025)	$0	$530	$530
SHA	MD 198: MD 295 to MD 32 (2034)	$0	$462	$462
SHA	MD 30 Business: North Woods Trail to CSX Railroad (Hampstead Community Safety & Enhancement) (2020)	$16	$8,502	$8,518
SHA	MD 32: Linden Church Road to I-70, Capacity & Safety Improvements (2022)	$80,924	$20,055	$100,979
SHA	MD 32: MD 108 to Linden Church Road (2019)	$0	$2,689	$2,689
SHA	MD 45: Padonia Rd to Wight Ave (2021)	$1,860	$10,092	$11,952
SHA	US 29: Middle Patuxent River to Seneca Drive - Phase 2 (2030)	$0	$1,285	$1,285
SHA	US 40: MD 7 & MD 159 Intersection Reconstruction - Phase 2 (2019)	$3,376	$577	$3,953
Non-Interstate NHS Subtotal (In $1,000s)		**$127,536**	**$65,122**	**$192,658**
Funding Total (In $1,000s)		**$306,147**	**$163,346**	**$469,493**

Table 14 summarizes the funds programmed in the 2020-2023 TIP that affect the condition of bridges 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.

In addition to the projects listed in Table 14, the TIP also includes a Maryland Transportation Authority project that will add two express toll lanes on I-95 from north of MD 43 to north of MD 24. This project will improve the condition of several bridges as a part of the project scope. Finally, SHA's Areawide Bridge Replacement and Rehabilitation project programs funds for major upgrades and maintenance of structures on state highways. This TIP project programs $118.72 million in federal funds along with $29.68 million in matching funds for a total of $148.4 million. These funds include both NHS and non-NHS structures. $62.4 million of the federal funds in this project are programmed under the National Highway Performance Program.

Table 14. 2020-2023 TIP Bridge Projects on the NHS

Agency	Project Name (Year of Operation)	Federal	Matching	Total TIP Funds
Baltimore City	I-83 Concrete Deck Mill and Resurface (2025)	$800	$200	$1,000
Baltimore City	Moravia Road Ramp Bridge over Pulaski Highway (2026)	$960	$240	$1,200
Baltimore City	Orleans Street Bridge over I-83 and City Streets (2028)	$512	$128	$640
Baltimore City	Wilkens Avenue Bridge Over Gwynns Falls (2023)	$11,040	$2,760	$13,800
Baltimore County	Rolling Road Bridge No. B-0358 over Branch of Dead Run (2027)	$400	$100	$500
SHA	I-695: Bridge Replacements at Benson Ave and US 1 (2018)	$0	$84	$84
SHA	I-83: Bridge Replacement over Padonia Road (2021)	$13,649	$1,816	$15,465
SHA	US 1: Bridge Replacement over CSX (2021)	$17,277	$4,928	$22,205
SHA	US 40: Bridge Replacements over Little & Big Gunpowder Falls (2021)	$16,203	$5,113	$21,316
	Funding Totals (in $1,000s)	**$60,841**	**$15,369**	**$76,210**

The TIP also includes a number of local and state sponsored non-NHS bridge rehabilitation and replacement projects. These projects represent a significant investment in the 2020-2023 TIP. The 2020-2023 TIP includes $103.84 million in federal funds for these projects along with $45.293 million in matching funds for a total of $149.133 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) % of person-miles traveled on the Interstate System that are reliable

2) % 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 15 summarizes the travel time reliability performance measures and targets. The BRTB adopted these targets in October 2018.

Table 15. 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 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), SHA's Areawide Congestion Management project (TIP ID 60-9504-04), and Baltimore City's Traffic Signals and Intelligent

Transportation System project (TIP ID 12-1218-07). As Performance Based Planning and Programming efforts continue, the BRTB will explore improved methods for evaluating the effect of TIP projects on travel time reliability.

Future Performance Monitoring

In cooperation with the Maryland Department of Transportation 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*.[4]

[4] More information about *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 2020-2023 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 2020-2023 portions of their respective multi-year improvement programs.[5] 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 long-range transportation plan, 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.

5. 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:

- Congestion Mitigation and Air Quality Improvement Program
- 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
- National Highway Performance Program
- Recreational Trails Program
- Surface Transportation Block Grant Program
- Transportation Alternatives Program
- Transportation Investment Generating Economic Recovery (TIGER) grants

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.[6] Inclusion of these projects in the TIP indicates endorsement by the BRTB for federal funding of the proposed project phase(s).

6. 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 2020, 2021, 2022, and 2023. 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 implementing 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 (SHA). Projects to be implemented by 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 or state projects for Queen Anne's County in the 2020-2023 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 CAAA. 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 when 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 since projects in the TIP are often long-term phased projects that extend beyond the four fiscal years covered by the TIP.

Also included for road projects is an indication if the project is a **Highway Capacity Improvement** or if it 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.

New maps are based on the 2011 Highway Performance Monitoring System (HPMS) for purposes of identifying the non-NHS principal arterials for inclusion in the NHS. The maps include the non-NHS principal arterial coding from the State-submitted HPMS GIS Shape files. The updated NHS maps incorporate these additional principal arterials as well as any principal arterial functional reclassification adjustments that were reported by September 20, 2012.

The project **Description** and **Justification** are intended to 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:

<u>Federal Highway Administration Funds:</u>

- BUILD Better Utilizing Investment to Leverage Development (BUILD) grants
- CMAQ Congestion Mitigation and Air Quality
- HSIP Highway Safety Improvement Program
- NHPP National Highway Performance Program (National Highway System, Interstate Maintenance, Bridge (on-System))
- RTP Recreational Trails Program

- STBG Surface Transportation Block Grant Program
- TAC Transportation Alternatives (including Safe Routes to School)
- TIGER Transportation Investment Generating Economic Recovery (TIGER) grants

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 Nonurbanized 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 funds expected to be requested 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 for a project is documented and scoping is broad and involves the public.
- ENG – Engineering: Engineering funds involve detailed environmental studies as well as preliminary and 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[7]: This funding may include permits, inspections, utility 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.

7. Other phase funds include (a) permits, inspection fees, and local bridge inspection programs; (b) non-infrastructure funds for studies, project delivery services, and research; (c) SHA Areawide Congestion Management funds not involving construction such as CHART vehicle purchases; and (d) funds for MTA projects including bus and rail preventive maintenance, section 5310 grants, ridesharing, and funding for LOTS agencies. The 2020-2023 TIP includes $292.04 million for this phase. Of this, SHA Areawide Congestion Management accounts for 16.4% and MTA accounts for 79.9%.