

■ 5.0 Linking Maryland's STIP to MAP-21 and FAST Act

This section contains additional information about the development and content of Maryland's STIP to demonstrate compliance with federal requirements. The following information is organized according to 23 CFR § 450.216 subsections (a) – (m). MAP-21 made a number of reforms to the metropolitan and statewide transportation planning processes, including incorporating performance goals, measures, and targets into the process of identifying needed transportation improvements and project selection. The FAST Act includes provisions to support and enhance these reforms.

(a) Federal STIP Update Guidelines: MDOT intends to update its STIP every year moving forward while the federal regulations only require an update every four years. This annual update will align more closely to the CTP development and provide better accountability for fiscal constraint.

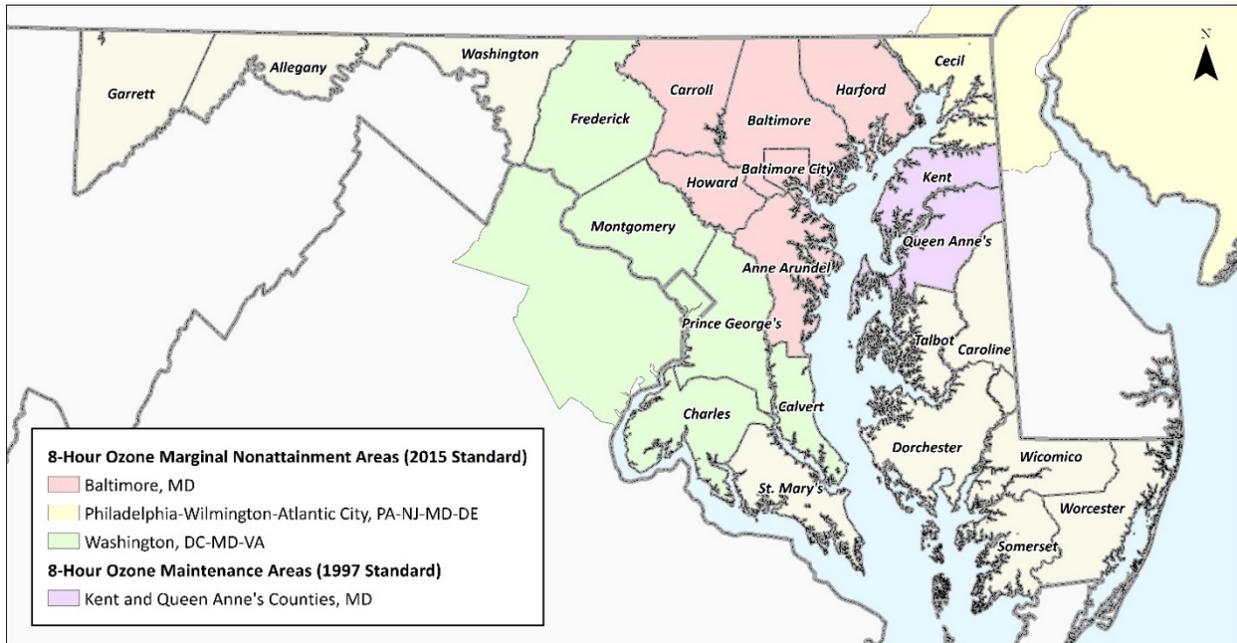
(b) MPO Coordination and Air Quality Attainment: There are seven metropolitan planning organizations (MPO) across the State that perform a range of activities that promote an integrated approach to regional transportation planning. The federally mandated transportation planning process requires MPOs to produce a financially constrained long-range multimodal transportation plan (LRTP) and transportation improvement program (TIP) that lists actual funding commitments for projects. MPOs must follow their approved Public Involvement and Title VI Plans to solicit public concerns and ensure the transportation plans do not disproportionately affect low-income or minority communities in an adverse way. The MPO Board, consisting of local elected officials, transit agencies, and state and local transportation representatives, is the approving authority for the MPO. Once the plans and programs are approved, they are added to the STIP.

In addition, the MPOs must ensure that the projects included in the LRTP and TIP collectively contribute to air quality improvement goals for the region. This requirement is the federally regulated transportation conformity process that requires nonattainment and maintenance areas to demonstrate that all future transportation projects will not hinder the area from reaching and maintaining its attainment goals and will not:

- *Cause or contribute to new air quality violations,*
- *Worsen existing violations or*
- *Delay timely attainment of the relevant NAAQS.*

Regional transportation conformity is required for areas designated nonattainment and maintenance of the National Ambient Air Quality Standards (NAAQS). To demonstrate conformity, the regional emissions associated with the LRTP and TIP must be less than or equal to the motor vehicle emissions budgets (MVEB) established in a State Implementation Plan (SIP).

In Maryland, transportation conformity is only applicable for our ozone nonattainment and maintenance areas, which are illustrated in the figure below.



Ozone

The current ozone NAAQS is the 0.070 ppm 8-hour standard established in 2015 with nonattainment designations effective August 3, 2018. The US EPA designated three areas in Maryland as “marginal” nonattainment. These areas are subject to transportation conformity and include: Metropolitan Washington, DC, (DC-MD-VA) region, Baltimore, MD region and Cecil County as part of the Philadelphia-Wilmington-Atlantic City (PA-NJ-MD-DE) region. The marginal classification requires the areas to demonstrate attainment by 2021.

Kent and Queen Anne’s Counties are maintenance for the 1997 ozone standard. For transportation conformity, they are considered an isolated rural area and require conformity only for new, regionally significant projects. All other counties in Maryland are in attainment for ozone.

PM_{2.5}

The US EPA published a revocation of 1997 PM_{2.5} Standard on August 24, 2016, resulting in three areas in Maryland, previously designated as maintenance areas, no longer being required to demonstrate transportation conformity for any fine particulate matter standard. These areas include the Washington, DC and Baltimore regions, as well as the Hagerstown-Martinsburg, WV region. All counties in Maryland are in attainment of the 2006 and 2012 PM_{2.5} NAAQS.

Greenhouse Gases (GHG)

The State’s Greenhouse Gases Reduction Act (GGRA) was reauthorized in 2016 and established the greenhouse gas (GHG) reduction goal of 40 percent from 2006 levels by 2030 (“40 by 30”). MDOT has aligned its mission and transportation planning efforts to

mitigate GHG emissions while investing in a transportation system that is resilient to climate impacts. Meeting the transportation sector emissions reduction challenges and opportunities requires innovative planning, recognition of electric vehicle (EV) and technology advancements, as well as shifts in travel behavior to new, on-demand type of services.

MDOT has implemented transportation emissions reduction strategies, adopting policy and program changes, to put Maryland's transportation sector on the path toward meeting the "40 by 30" goal. Through its leadership of the Electric Vehicle Infrastructure Council (EVIC), MDOT is spearheading the deployment of EVs and a sustainable network of EV charging locations. Reducing congestion is a critical component of mitigating GHG emissions and MDOT continues to expand transit services, improve travel demand management programs, and is implementing the Maryland Traffic Relief Plan. MDOT has also developed Maryland's Connected and Autonomous Vehicle (CAV) Strategic Vision and MDOT's CAV Strategic Plan and is deploying integrated corridor management advances to manage congestion.

In addition to mitigating GHG emissions, MDOT is developing vulnerability assessments and resiliency plans to address the current and future impacts of climate change and potential sea rise on the transportation network. MDOT leads by example in utilizing renewable energy sources, resulting in reductions in energy use and GHG emissions, by allowing contractors opportunities to install, operate, and maintain solar systems on MDOT properties.

(c) Non-Metropolitan Area Coordination: Development of the STIP is not complete until the needs and priorities of non-metropolitan areas are included. MDOT has developed the "Non-metropolitan Area Consultative Process" in order to comply with federal transportation planning requirements. This policy provides a process for non-metropolitan areas and non-metropolitan elected officials to be involved in Statewide transportation planning that spans across all modes. Section 4.0 also described the annual CTP/STIP Fall Tour, a key component of Maryland's outreach to non-metropolitan areas and other coordination efforts with non-metropolitan areas pursued by MDOT. Process details can be found on MDOT's website: http://www.mdot.maryland.gov/newMDOT/Planning/STIP_TIP/STIPandTIP.html.

(d) Indian Tribal Government Coordination: There are no federal Indian Tribal governments in the State of Maryland.

(e) Federal Lands Highway Program (FLHP) TIP: The STIP includes all FLHP projects that have been approved by FHWA without modification (see Appendix D).

(f) Public Comment and Title VI: The STIP is developed within an inclusive, accessible, and responsive public involvement process. As mentioned under "(b) MPO Coordination and Air Quality Attainment," each TIP is subject to its own public comment process and review period. Several public outreach attributes of the STIP development process (e.g., CTP Fall Tour) were described in Section 4.0.

MDOT recognizes that an early and continuous public participation process is the key to keeping the public fully informed and involved in making decisions that affect Maryland's transportation systems. MDOT strives to be as inclusive as possible and employs a range of public outreach strategies that vary based on the relevant outreach needs. MDOT takes an inclusive attitude to engaging the public targeting all populations not solely Title VI and

Limited English Proficiency populations. These strategies have included press releases, mass mailings, interviews, facilitated meetings, an interactive website, newsletters, social media, and online surveys.

MDOT's public participation process begins during the development of MDOT's Statewide Transportation Plan, called the Maryland Transportation Plan (MTP), continues through the creation of Maryland's Statewide Transportation Improvement Program (STIP) and six-year Consolidated Transportation Program (CTP), and then finishes with the project development phase for implementation of specific transportation system improvements. The MDOT Annual Consultation Meetings Tour (Tour) is the major outreach activity of MDOT for the development of the MTP, STIP and CTP.

As part of the MDOT Tour, the Secretary and business unit leaders meet with the public and discuss ways to improve transportation in the State. Annually, there are at least twenty-four public MDOT Tour meetings held across the State. These meetings are hosted by local jurisdictions and held at different local venues, including county buildings, community centers or organizations, local boards of education, and public libraries that are transit assessable locations with variable starting times to accommodate different work schedules.

In the past, MDOT's public outreach included providing notice of the MDOT Tour meetings through the use of press releases, mass mailings, social media, and MDOT website postings. To encourage participation by minority and Limited English Proficiency populations throughout Maryland, MDOT will place advertisements in local newspapers, including major and non-English language media, prior to public meetings to inform the public of these activities. MDOT will also use, when appropriate, non-English language newspapers within the local jurisdictions for public outreach that is being conducted by MDOT. MDOT will continue to issue press releases, send mass mailings, use surveys, and post on the MDOT social media pages and the MDOT website. MDOT will continue to work with the local jurisdictions to ensure that public meetings continue to be held at transit assessable locations with variable starting times to accommodate different work schedules. MDOT will also continue to work with the local jurisdictions to engage minority and Limited English Proficiency populations. The MDOT Tour meeting schedule and directions are listed on the website at:

http://www.mdot.maryland.gov/newMDOT/Planning/CTP/2018_CTP_Tour/Index.html.

(g) Capital and Non-Capital Project for Specific Federal Funds: The CTP separately lists bicycle and pedestrian projects programmed annually and can be found starting on page BP-1. In addition, MDOT tracks a set of bicycle and pedestrian performance measures identified in the Maryland Bicycle and Pedestrian Master Plan and will continue to document progress in the AR. Appendices B and C contain annual lists of projects for which funds have been obligated in the previous year.

(h) Regionally Significant Projects: The 2019 STIP includes all MDOT projects, including those projects of regional significance. For conformity purposes, all MPO TIPs contain all projects of regional significance as well, regardless of funding source.

(i) Project / Phase Summary Reports: For each major project to be included in the CTP, MDOT either creates a summary Project Information Form (PIF), which is a summary of information for each project or submit the projects through the MPO TIP process. Important

data is included on the PIF and the TIP project sheets, such as a map illustrating the location and size of a project, an image illustrating the type of project, project justification, other non-Federal funding sources, and Smart Growth Status. Chapter 725 also requires that for projects in the Construction Program, the appropriate State Goals from the State Transportation Plan (MTP) be identified. Each MPO TIP explains how to read the TIP project sheets.

The major phases in which federal funds are spent are of particular importance to federal regulators. The four phases included are:

- Planning – Once a proposal is funded for project planning, detailed studies and analyses are conducted to evaluate the need for the project, to establish the scope and location of proposed transportation facilities, and to obtain environmental approvals.
- Engineering – Engineering projects involve detailed environmental studies and preliminary and final design. Having been through a detailed analysis based on the information from the Project Planning phase, these projects are candidates for future addition to the Construction Program.
- Right-of-Way – This funding is to provide the necessary land for the project or to protect corridors for future projects.
- Construction – This last stage includes the costs of actually building the designed facility. Construction does not begin until a project receives the necessary environmental permits, the State of Maryland meets air quality requirements, and contracts are bid. Once a project is fully funded for construction, it is moved from the Development and Evaluation section of the CTP to the Construction section of the CTP.
- Total – This is the sum of any funding shown for Planning, Engineering, Right-of-Way, and Construction.
- Federal Aid – This is the amount of the total that will utilize federal funding.

(j) Grouped Projects: MDOT has the option to group projects that are not regionally significant. These projects are typically referred to as “Minor Projects” and appear as “System Preservation Projects”. These projects are smaller in scope and cost can include road resurfacing, safety improvements, and sidewalk and bicycle and trail construction. Most projects are not grouped together and have their own PIF page; however, some System Preservation Projects within the larger urban areas are grouped together by funding category. Projects located within smaller regions may be itemized at the discretion of the SHA district engineer. In instances where grouped projects include large projects that can be identified individually, consideration for their own PIF page will be given.

(k) Consistency with State Long-Range Transportation Plan and MPO Long-Range Transportation Plans: The multimodal goals and objectives in the *2040 Maryland Transportation Plan (MTP)* provided policy guidance for the 2019 STIP development. The MTP in turn provides overall policy direction for Maryland’s seven MPO LRTPs which in turn provide overall policy direction for development of the TIPs.

(l) Financial Plan: The financial documentation can be found in Appendix B&C and in the CTP Summary on pages 11-15. This information was presented and distributed to the public during the Fall Tour. The section titled “Where the Money Comes From” (page 14 of the CTP) details the various inputs to the TTF, which is Maryland’s dedicated transportation revenue source. As Figure 3.1 illustrates, the TTF is supported by federal aid, operating

revenues, user fees, motor fuel taxes, vehicle titling taxes, registration fees, sales and use taxes, corporate income taxes, and bond proceeds. This source of funding is available to pay for operating, maintenance, and capital costs (including system preservation) associated with highways, transit, aviation, motor vehicle administration, and the Port of Baltimore.

The CTP contains all capital projects funded with the TTF. The TTF assures there are no administrative barriers to combining or flexing State or federal transportation funds to pay for the needs of a given project, within the constraints of statutory authority. Additionally, because transportation needs are not paid for using the State's general fund, transportation does not have to compete with other State programs and expenditures for funding.

The total projected Trust Fund revenues amount to \$30.9 billion for the period covered by the FY 2019 – FY 2024 CTP. The TTF supports operation and maintenance of State transportation systems, MDOT administration, debt service, and capital projects. In addition, 5 percent of the Highway User Revenues credited to the TTF are shared with Maryland's counties and Baltimore City to support their local transportation needs.

The Department maintains a six-year Financial Plan that is updated semi-annually. This plan forecasts revenues and expenditures using the latest economic estimates from two national forecasting companies. The revenue projections used in the latest update of the Trust Fund forecast are, in the short-term, based on a continuation of moderate growth in the national economy and, in the long-term, expected to follow a normal cyclical pattern around an overall upward trend. User revenues are payments made by our customers for transportation infrastructure and services; and as such, their long-term growth follows the trend in state population.

MdTA is independently funded through tolls, concessions, investment income, revenue bonds, and miscellaneous sources; thus, its funding sources are separate from both the TTF and the State's General Fund. While there is no federal funding associated with any of the MdTA projects, the projects that MdTA constructs that are considered "Regionally Significant" can be found in the appropriate Metropolitan TIP. Please reference the various TIPs for the project information such as I-95 projects included in the BRTB TIP.

Another source of funding that is accounted for in the STIP includes local Congressional earmarks. Local earmarks can be found in the Minor Projects section of the SHA County PIF pages.

The revenue and cost estimates for the CTP/STIP use an inflation rate to reflect "year of expenditure dollars" based on reasonable financial principles and information developed cooperatively by the State, MPOs, and public transportation operators. The CTP describes the economic trends and assumptions that were used to estimate MDOT's revenue and operating cost projections. The CTP also describes the assumptions used to estimate federal aid for highways, transit, WMATA, and aviation.

(m) Fiscal Constraint: Fiscal constraint is a requirement that dates back to the Intermodal Surface Transportation Efficiency Act of 1991. The purpose of fiscal constraint is to ensure that states have adequate funding available to implement projects identified in the STIP while also providing for the operation and maintenance of the existing transportation system. The 2019 STIP is financially constrained by revenues that are reasonably expected to be available through the four-year funding period of the STIP or project completion using year

of expenditure dollars. The revenue and expenditure projections use the latest available economic estimates from two national forecasting companies.

Several specific requirements apply to the federal definition of fiscal constraint. They include:

- A STIP must be financially constrained by year and funding category.
- The STIP must clearly identify projects to be funded using current revenues and which projects are to be funded using proposed revenue sources.
- Proposed funding sources and strategies ensuring their availability shall be identified.
- Operation and maintenance funding must be programmed into the STIP.
- The State must have a process for estimating expected revenue from all funding sources over the time period of the STIP and furnish this information to MPOs for the development of their TIPs.

The 2019 STIP demonstrates fiscal constraint in the following ways. The CTP and TIPs specify funding sources (Federal, State special, State general, other) to be used for projects broken down by year and project phase (planning, engineering, right-of-way, and construction). Projects (or phases of projects) are listed only if full funding is anticipated to be available for the project (or appropriate project phase) within the time period established for its completion. The Summary includes Operating and Maintenance Costs on pages A-16 through A-24, which are fully funded first before any funding is declared available for Capital projects. Lastly, all of the information contained in the MPO TIPs for the state projects comes directly from the CTP. Once the CTP is approved by the Maryland General Assembly and Governor, it becomes the budget established in the financial system.

State Highway Administration Details

It's understandable that there may be confusion between "planning" requirements, which include a snapshot in time based on the information of record and which are then projected out for up to four years, versus "budgeting" requirements, which include daily individual project approvals and the current state of federal reimbursement practices. The primary focus of this document is on the "planning" requirements, however, due to increased scrutiny concerning the demonstration of fiscal constraint, a discussion of how the day-to-day "budget" process works is very relevant. The following section provides a detailed discussion on the SHA budget process.

As described in earlier sections of the Executive Summary, the Capital Program is funded by both State funds (dedicated revenues of the TTF and CTP Bond funds) and federal funds. For SHA, federal funds are received primarily from FHWA under a federal transportation funding act. Each project is reviewed for eligibility to use federal-aid funds. FHWA approval must be received in advance in order to seek federal reimbursement of costs. If the federal eligibility criteria cannot be met, State funds must be programmed, if available. The Capital Program budget process is based on a projection of available State vs. federal funds, which is determined based on many different factors.

It is important to note, that the federal highway program is primarily a capital construction program and very rarely are federal funds authorized for maintenance projects or activities. At this time, only CHART operations activities receive federal funds as part of the Maintenance Program. The other exception is FEMA and FHWA-Emergency Relief funds, which may be sought when a significant or catastrophic emergency weather event occurs

and causes significant damage. It is important to capture the costs associated with these events in order to seek federal reimbursement. It should be noted that the use of federal funds for the planning and design phases need to be carefully evaluated given the FHWA payback rules. Should the project not proceed to right-of-way acquisition or construction within 10 years, federal funds reimbursed from the early project development phases may need to be paid back.

Capital Project

A Capital Project as approved in the CTP is generally a project that results in the building of an infrastructure asset or improves the infrastructure asset by extending its useful life. The CTP development process is in compliance with Accounting Pronouncement GASB-34 requiring infrastructure and all capital assets be accounted for and depreciated based on the reasonable useful life of the asset. MDOT Consolidated Transportation Program Bonds are backed by these infrastructure assets. The bonds require that Capital Program Bond funds be used exclusively for appropriate capital program spending as authorized by the approved CTP. Each capital project must support the specific capital program fund category it is being funded from, such as Fund 77 (Resurfacing and Rehabilitation). Each capital program fund must be used exclusively for the purposes approved by the Secretary and the Legislature.

Capital Program Fund Categories (Grouped Projects)

Capital Program Funds, such as Fund 80 (Bridge Replacement & Rehabilitation), are an integral part of managing the Capital Program. The fund categories are approved by the Administrator and the Secretary during the budget submission process. Each fund category represents a capital investment in the State Highway System. Funds can only be spent for capital projects that are part of the State Highway System unless the project has been approved as Reimbursable by another party (e.g. local government). The work performed in the Capital Program cannot be considered repair or maintenance work, which is work that does not extend the useful life of a capital or infrastructure asset, but rather minimally extends the asset's life. Repairs and maintenance work on the State Highway System must be approved and charged against the Maintenance Program.

Form 42 and Form 30 – Project/Contract Approval Process

The approval process for a capital project is achieved by project phase (Project phases are typically planning, design, ROW, utilities, and construction) through the use of the Form 42 and Form 30. These forms are required in order to authorize or commit future capital funds and to spend capital funds. The Form 42 allows a project to be authorized for future funding from an approved capital fund category. One requirement of the Form 42 is that it must contain the appropriate TIP and/or STIP number for the project. The potential eligibility for federal funding is assessed at this time. It is important to assess this correctly since an error can lead to potential under-spending of federal dollars and over-spending of State dollars. It is at the time that a Form 42 is approved for construction funding that a project can proceed to advertisement. The approved Form 42 commits the future funds under the appropriate capital program fund category, but it also allows the cash flow and forecasting process to begin. A Form 30 must be submitted in order to establish an active project number in FMIS, except for advertised construction projects. It should be noted that any change in cost, schedule, and/or scope of a project is also documented through the Form 42 and Form 30 process. This change approval step in the process allows a project to be authorized for any changes that result in a decrease or increase of spending of State or Federal dollars, as well as any significant changes in cash flow assumptions. for the subject projects.

Advertisement Schedule

The Advertisement Schedule is a working document reviewed weekly with the Deputy Administrators, Senior Managers and others, such as fund managers, to ensure all approved capital construction projects proceed to contract advertisement on schedule. FHWA is also invited and regularly participates. Only projects with approved Form 42s are allowed on the Ad Schedule. The review process ensures major milestones are achieved by meeting targeted dates including the project Notice to Proceed date, which is the basis for the cash flow estimate and the budget.

Monthly Forecast

The Monthly Financial Forecast allows SHA management to monitor the spending level of the capital program via the budgetary process (not the planning process). Each fund category within the approved CTP is monitored to ensure that project spending/programming is progressing within the estimated cash flow/approved budget or it is under or over spending/programmed. Immediate action must be taken to correct any significant spending issues. Success is typically measured at the end of the fiscal year when at least 90% spending has been achieved within the budgeted fund categories and we have not overspent State funds.

Advance Construction

SHA uses Advance Construction (AC) procedures to manage its capital program. In general, all projects are placed in AC when advertised for construction. Conversion to regular federal funding occurs consistent with the cash flow required during each fiscal year. The cash flows used are the same as those carried in the Department's six-year CTP. Federally funded projects are added to the program only when there is sufficient Obligation Authority (OA) remaining after providing for projects already underway. For planning purposes, the OA is calculated at a rate of 90.1% - 94.0% of authorized appropriations. A detailed analysis of the use of OA is prepared for the draft and final CTP each year.

Additionally, SHA has utilized Toll Credits to manage the funding of highway improvements. Toll Credits for non-federal share are a provision in United States Code (USC) that allow states to take a credit for documented non-federal expenditures by a state toll authority on routes that carry interstate commerce. The credit takes the form of replacing the federal matching share, i.e. the state share, making a project (or at least the federal eligible portions of a project) 100% federally funded. Toll credits do not give a state any more federal aid to spend; they just allow a state to use federal funds in lieu of the state match portion, which provides flexibility to better manage the use of state and federal funds. The STIP also includes fiscal constraint summary tables and explanation worksheets for SHA and for Statewide projects (see Appendix B and Appendix C).