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MAXIMIZE 2045

A PERFORMANCE-BASED TRANSPORTATION PLAN

Rethinking Legacy  Finding Opportunity



Maximize2045 is an initiative of the Baltimore Regional Transportation Board, the Metropolitan Planning Organization for the Baltimore region.



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Executive Summary





OVERVIEW

Regional Long-Range Transportation Plan

Maximize2045: A Performance-Based Transportation Plan is the long-range transportation plan for the Baltimore region. This plan establishes the region's broad transportation goals and strategies. These goals and strategies will guide transportation investments over the life of the plan (2024-2045).

Maximize2045 contains a list of the major surface transportation projects the region expects to implement in the period from 2024 to 2045. The plan also shows revenues the region expects to have available for these projects and estimated costs of these projects.



Metropolitan Planning Organization (MPO)

Federal law requires every urbanized area in the U.S. with a population greater than 50,000 to have a metropolitan planning organization (MPO). An MPO is a regional policy making organization consisting of representatives of local governments and governmental transportation agencies. The purpose of an MPO is to ensure regional cooperation in transportation planning.

The Baltimore Regional Transportation Board (BRTB) is the federally designated MPO acting as the regional transportation planning and policy making body for the Baltimore region. The Baltimore Metropolitan Council (BMC) provides technical staff to assist the BRTB and its advisory committees.

Future Factors and Trends

BMC staff, in cooperation with its state partners, developed chapters 2 and 3 of this document to address factors and trends that will affect the regional transportation network in the future. These include such topics as forecasted population growth and emerging technologies such as automated and connected vehicles. The hope is that this discussion will provide additional context so that readers can better understand why the BRTB made certain decisions as well as how those decisions might better prepare the region to respond to the uncertainties of the future.

Regional Goals and Strategies

The BRTB has adopted nine broad regional goals, with supporting implementation strategies. Together, these goals and strategies will help the BRTB to guide transportation investments over the 2024-2045 period.

The box at right shows these goals. Chapter 4 provides specific strategies the BRTB has adopted to help the region implement projects in support of these goals.

Regional Transportation Goals

Improve System Safety

Make conditions safer for pedestrians, bicyclists, transit riders and operators, and motorists.

Improve and Maintain the Existing Infrastructure

Improve the conditions of existing transportation facilities; systematically maintain and replace transportation assets as needed.

Improve Accessibility

Help people of all ages and abilities to access specific destinations.

Increase Mobility

Help people and freight to move reliably and efficiently.

Conserve and Enhance the Environment

Pass on to future generations the healthiest natural and human environments possible.

Improve System Security

Provide a secure traveling environment for everyone; improve the region's ability to respond to natural and man-made disasters.

Promote Prosperity and Economic Opportunity

Support the revitalization of communities, the development of activity centers, and the movement of goods and services.

Foster Participation and Cooperation Among Stakeholders

Enable all interested and affected parties to participate and cooperate to find workable solutions.

Promote Informed Decision Making

Ensure that adopted transportation policies and performance measures guide the regional decision making process.

Performance-Based Approach

Under federal law, the metropolitan transportation planning process for both states and MPOs must “provide for the establishment and use of a performance-based approach to transportation decision making.”

Maximize2045 includes 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 the law and corresponding regulations. These measures and targets help the BRTB and operating agencies assess system-wide progress relative to regional goals.

Compliant with requirements of the FAST Act and deadlines established in regulations, MDOT, public transportation providers, and the BRTB coordinated efforts to develop and adopt a series of regional performance targets. Performance targets have been adopted for:

- transit asset management
- highway safety
- traffic congestion
- roadway and bridge conditions
- system performance related to travel time reliability
- system performance related to freight movement
- on-road mobile source emissions.

Chapter 5 provides details on these performance measures and targets.



Photo courtesy of Harford Transit

Fiscal Constraint

Federal law requires regional transportation plans and programs to be fiscally constrained. That is, estimated costs cannot exceed forecasted revenues. The regional long-range transportation plan must include a financial plan that shows how the region expects to pay for each project and program.

Chapter 6 provides details on the anticipated revenues for *Maximize2045*.

Here is a breakdown of forecasted revenues versus total estimated year of expenditure costs for major capital projects for the 2024-2034 and 2035-2045 periods. This breakdown demonstrates that the region expects to have sufficient funds to pay for the projects in *Maximize2045* in the time periods in which the region expects these projects to be implemented.

Forecasted Revenues, 2024-2034:	\$3,209,000,000
Estimated YOE Costs, 2024-2034:	<u>\$3,196,000,000</u> \$13,000,000
Forecasted Revenues, 2035-2045:	\$8,953,000,000
Estimated YOE Costs, 2035-2045:	<u>\$8,861,000,000</u> \$92,000,000

Air Quality Conformity

“Conformity” means that the projects in *Maximize2045* will not cause or contribute to new air quality violations, worsen existing violations, or delay timely attainment of air quality standards.

Appendix C includes the results of the air quality conformity analysis for *Maximize2045*. Based on the conformity analysis, the BRTB, in its capacity as the MPO for the Baltimore region, has concluded that implementation of the projects in *Maximize2045* will not worsen the region’s air quality or delay the timely attainment of air quality standards.

Executive Order – Environmental Justice

Environmental Justice seeks to ensure that the benefits and burdens of transportation investments are shared as equitably as possible among all affected communities.

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority and Low Income Populations,” addresses this issue. This Executive Order and its accompanying memorandum reinforce the requirements of Title VI of the Civil Rights Act of 1964 that focus federal attention on environmental and human health conditions in minority and low-income communities.

Appendix C includes an analysis of the potential effects of this plan’s major projects on Environmental Justice populations.

Congestion Management Process

Federal law requires all metropolitan areas with populations greater than 200,000 to have a Congestion Management Process (CMP). The CMP identifies actions and strategies to reduce traffic congestion and increase mobility.

Appendix D includes technical details on the region’s CMP and how the projects in this plan are consistent with this CMP.

Consultation with Interested Parties and the Public

Federal law requires MPOs to consult with state and local officials, transit operators, and the public when conducting transportation planning. Part of this process is the requirement to develop a public participation plan that defines a process for providing the public and interested parties with reasonable opportunities to be involved in the planning process.

Appendix E includes details on the BRTB’s public participation process and its specific outreach efforts in developing *Maximize2045*.



Preferred Alternative, FY 2024-2045

The BRTB, working with local jurisdictions and state agencies, developed a preferred alternative for the Baltimore region. This preferred alternative consists of funding allocated for operation and maintenance of the existing systems as well as major capital projects. These major capital projects were selected by applying the adopted evaluation and scoring criteria, consistent with federal laws and policies and the region's adopted transportation goals.

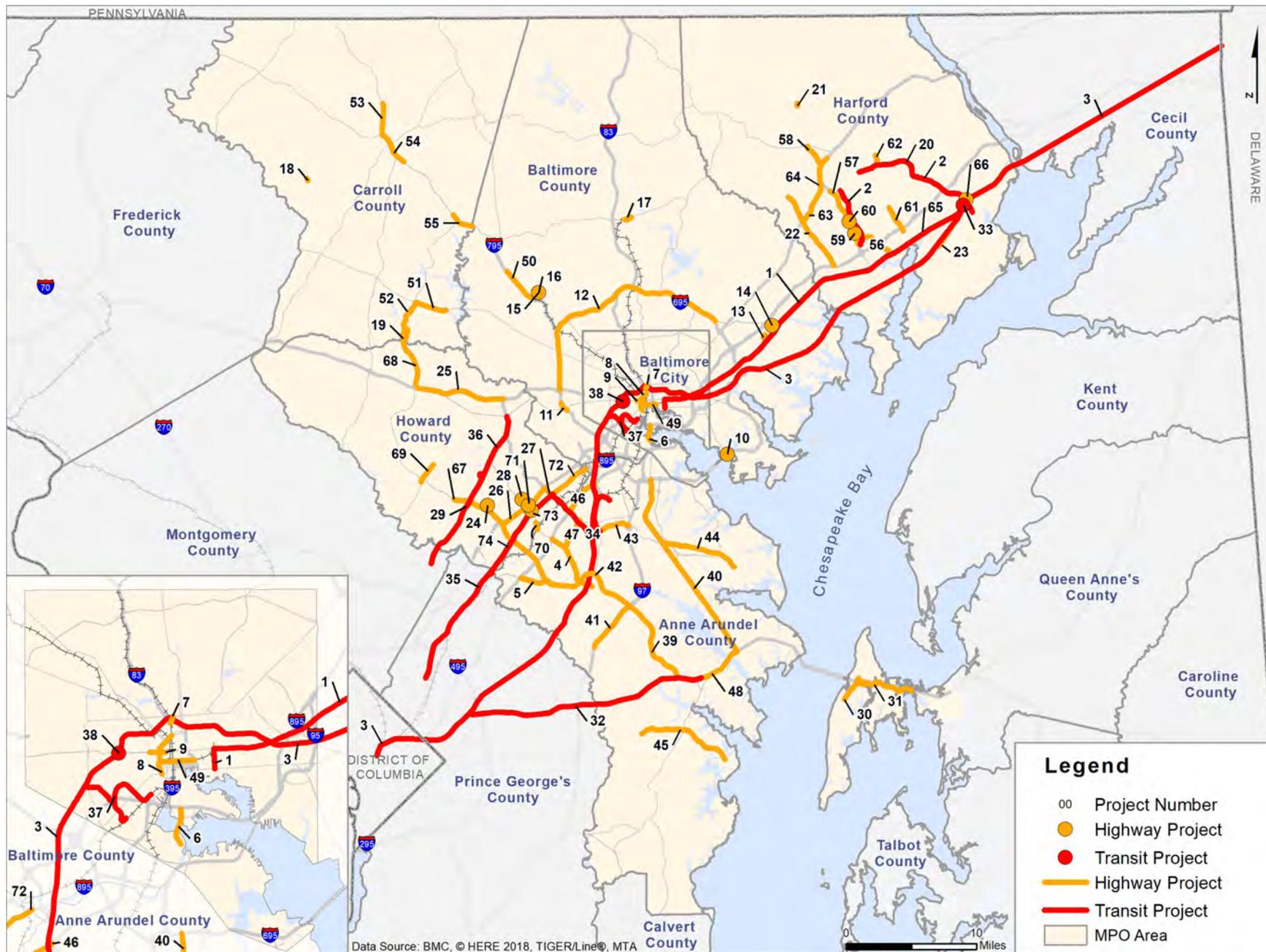
The major capital projects in the *Maximize2045* preferred alternative for the most part have only generally defined scopes. Similarly, funds to cover the design, right of way, and construction phases of these projects for the most part have not been committed yet. Such funds would come from forecasted revenues the region reasonably expects to be available for major projects throughout the life of the plan. Project sponsors may or may not be able to commit these anticipated funds to specific projects during the life of the plan. Rather, the projects included in the preferred alternative represent the best judgment of the BRTB about what is desirable and what meets the federal requirement for fiscal constraint, all the while considering existing conditions and future expectations.

Preferred Alternative – Major Capital Projects, FY 2024-2045

The map on the next page shows the locations of major capital projects in the Preferred Alternative. Following the map are tables that show major capital projects in the time periods within which the BRTB anticipates they might be implemented. The tables also show estimated year of expenditure (YOE) cost estimates.

Chapter 7 provides additional details on these projects.

Locations of Major Capital Projects, FY 2024-2025



Transit Projects, FY 2024-2034					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
1	MDOT SHA Harford County	MTA Commuter Bus Service	Harford County to Downtown Baltimore and to Harbor East and from Baltimore to APG	Additional MTA commuter bus service from Harford County to downtown Baltimore and Harbor East. Reverse commute route from Baltimore to Aberdeen Proving Ground. Install shelters. Extend U.S. 40 commuter service to connect with Harford Transit.	\$2,000,000
2	MDOT SHA Harford County	Transit Signal Priority	MD 22 corridor from Harford Mall to Aberdeen train station – 13 miles MD 924 corridor from MacPhail Road to Woodsdale Road – 4 miles	Construct queue jump lanes along MD 22 and MD 924 and install equipment on buses that syncs with traffic signals along these corridors.	\$4,000,000
	MDOT MTA Regional	BaltimoreLink Bus Expansion Program - Phase 1		Purchase buses to meet increasing ridership demands that exceed replacement needs.	\$67,000,000
3	MDOT MTA Regional	MARC Service	Northern Virginia to Philadelphia	Fill Northeast Corridor commuter rail gap by providing commuter rail service between Perryville, MD and Newark, DE. Provide additional service to Harford County, including reverse commute, late evening service, and weekend service.	\$21,000,000

Roadway Projects, FY 2024-2034					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
4	MDOT SHA Anne Arundel County	MD 175	MD 295 to MD 170 5.2 miles	Widen from 4 to 6 lanes; reconstruct MD 175/MD 295 interchange, improve MD 32 interchange, improve pedestrian/bicycle facilities.	\$185,000,000
5	MDOT SHA Anne Arundel County	MD 198	MD 295 to MD 32 2.7 miles	Widen from 2 to 4 lanes and construct a continuous center median; widen ramp at MD 295; provide pedestrian/bicycle facilities within project limits.	\$238,000,000
6	Baltimore City	Hanover Street Bridge over Middle Branch	Reedbird Avenue to McComas Street 0.5 miles	Replace existing 1916 Hanover Street Bridge over Middle Branch.	\$255,000,000
7	Baltimore City	Howard Street Bridge	W Mt Royal Avenue and North Avenue 0.2 miles	Replace existing bridge, consists of two steel tied arch and six steel girder segments. These span over I-83, John Falls, MTA, Amtrak, CSX, Falls Road, and a fenced-in private lot. Improvements include enhanced bicycle and pedestrian facilities extending to the approaches of both sides of the bridge. No additional traffic capacity changes are being included as part of the project.	\$61,000,000
8	Baltimore City	Martin Luther King Boulevard Re-Visioning	Washington Boulevard to Howard Street 1.5 miles	Roadway reconstruction and construction of "Complete Street" elements.	\$9,000,000
9	Baltimore City	U.S. 40 over Martin Luther King Jr. Boulevard Ramp Removal	N Schroeder Street to N Greene Street 0.5 miles	Remove two U.S. 40 bridges over Martin Luther King Jr. Boulevard, reconnecting N Fremont Avenue where it is currently bisected by U.S. 40. Intersection and streetscape improvements on Martin Luther King Jr. Boulevard.	\$118,000,000

Roadway Projects, FY 2024-2034					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
10	MDOT SHA Baltimore County	Broening Highway / I-695		Construct a full interchange at Exit 44 of I-695 to adequately support redevelopment at Sparrows Point.	\$139,000,000
11	MDOT SHA Baltimore County	I-695 over U.S. 40 Bridge Replacement	I-695 outer loop from 1,400 ft. north of U.S. 40 to end of terminus of U.S. 40 eastbound ramp; I-695 inner loop 1,700 south of U.S. 40 to 2,100 feet north of U.S. 40.	Replace Bridge No. 0312400 on inner and outer loops of I-695 over US 40; reconfigure I-695/US 40 Interchange; widen main line of I-695; add noise and retaining walls. Add fourth lane of traffic over bridge to tie into I-695 – U.S. 40 to MD 144 outer loop widening. Fourth lane will terminate north of U.S. 40.	\$34,000,000
12	MDOT SHA Baltimore County	I-695	I-70 to MD 43 18.941 miles	Create new lane of traffic along inside shoulder of inner and outer loops during peak hours. Ramp metering and reconfiguration of I-695 / I-70 interchange.	\$350,000,000
13	MDOT SHA Baltimore County	MD 7	Campbell Boulevard to Mohrs Lane 0.4 miles	Capacity, congestion relief and safety (flooding) improvements. Raise existing road and bridge above 100-year floodplain. Provide 6-lane divided section, with 2 through lanes in each direction on MD 7 and double left turns at Mohrs Lane and Campbell Blvd.	\$9,000,000
14	MDOT SHA Baltimore County	MD 7 / MD 43 Interchange		Upgrade from partial to full interchange, including two new ramps to accommodate full movements at interchange.	\$59,000,000
15	MDOT SHA Baltimore County	MD 140	Painters Mill Road to Owings Mills Boulevard 0.4 miles	Widen from 4 to 6 lanes; raised median and outside bicycle lanes. Bicycle and pedestrian improvements are included.	\$28,000,000

Roadway Projects, FY 2024-2034					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
16	MDOT SHA Baltimore County	MD 140 - Painters Mill Road	Reisterstown Road and Painters Mill intersection and access roads east and west of Reisterstown Road	Intersection improvements, additional left turn lane, and parallel access roads.	\$45,000,000
17	Baltimore County	Paper Mill Road Extension	Hunters Run Drive to York at Shawan Road 0.5 miles	Extend Paper Mill Road to intersection of York and Shawan Roads.	\$22,000,000
18	MDOT SHA Carroll County	MD 31	Church Street to Coe Drive 1.0 mile	Infrastructure improvements and pavement rehabilitation; streetscaping	\$16,000,000
19	MDOT SHA Carroll County	MD 851	Howard County Line to Springfield Avenue 1.037 miles	Infrastructure improvements and pavement rehabilitation; streetscaping	\$15,000,000
20	MDOT SHA Harford County	MD 22	MD 543 to I-95 7.9 miles	Widen existing 2- and 3-lane sections to 4 and 5 lanes; include an HOV lane from Old Post Road to APG gate, bicycle and pedestrian access, and transit queue jump lanes transit priority system where applicable.	\$158,000,000
21	MDOT SHA Harford County	MD 24 (Section G)	900 feet south of Sharon Road to 1,700 feet north of Ferncliff Lane 1.86 miles	Resurfacing and reconstruction, including slope repair and guardrail replacement	\$10,000,000

Roadway Projects, FY 2024-2034					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
22	MDOT SHA Harford County	MD 152	U.S. 1 to I-95 6.5 miles	Roadway reconstruction. Capacity improvements, including turn lanes and bicycle and pedestrian access where applicable	\$74,000,000
23	Harford County	Perryman East (Road A)	MD 715 to Michaelsville Road 2.0 miles	Construct new 2-lane road in Perryman to handle a bulk of the truck traffic accessing the distribution centers on the peninsula, including turn lanes and bicycle and pedestrian access	\$50,000,000
24	Howard County	Broken Land Parkway at Snowden River Parkway	Broken Land Parkway: MD 32 to north of Snowden River Parkway; Snowden River Parkway: east of Minstrel Way to Patuxent Woods Drive 0.25 miles	Capacity, operational, and safety improvements at this signalized intersection as well as access improvements to MD 32 ramps. Includes ADA-compliant pedestrian access as well as bicycle and transit access/mobility improvements.	\$23,000,000
25	MDOT SHA Howard County	I-70	U.S. 29 to MD 32 6.0 miles	Widen from 4 to 6 lanes; includes reconstruction of I-70 / Marriottsville Road interchange and upgrading of I-70 / U.S. 29 interchange	\$698,000,000
26	MDOT SHA Howard County	I-95	MD 32 to MD 100 6.0 miles	Create peak hour shoulder use.	\$41,000,000
27	MDOT SHA Howard County	MD 100	I-95 to Anne Arundel County line 2.0 miles	Widen MD 100 from 4 to 6 lanes with auxiliary merge/diverge lanes.	\$36,000,000

Roadway Projects, FY 2024-2034					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
28	MDOT SHA Howard County	MD 175 / MD 108 Interchange	0.25 miles to MD 175/ MD 108 intersection from all approaches. Also a direct connection to Columbia Gateway Drive. 0.25 miles	New partial grade separation to enable increased capacity and traffic flow to MD 175 and provide direct access to Gateway Drive and Columbia Gateway employment center.	\$96,000,000
29	MDOT SHA Howard County	U.S. 29	Patuxent River Bridge to Seneca Drive 1.7 miles	Widen from 2 to 3 lanes in northbound direction. Includes auxiliary lanes and grade-separated interchange at Rivers Edge community.	\$78,000,000
30	MDOT SHA Queen Anne's County	MD 8 / U.S. 50/301 Interchange and Service Roads	Skip Jack Parkway south to Davidson Drive; east to Thompson Creek service road 7.94 miles (Thompson Creek service road)	Widen from 2 to 4 lanes, convert MD 8 overpass to divergent diamond, interchange with U.S. 50/301, and add Thompson Creek and Cox Creek service roads to improve traffic flow, add capacity and allow for alternative routes to services and residential areas. Provide for bike and pedestrian improvements along existing and new routes.	\$82,000,000
31	MDOT SHA Queen Anne's County	MD 18	Kent Narrows to Bay Bridge – MD 18 and MD 835 on east side of Kent Narrows to MD 18 4.96 miles	Widen from 2 to 4 lanes, including ROW acquisition, utility relocation, new pedestrian improvements, and reconstruction of intersections to improve capacity, safety, and mobility on the only alternative route to U.S. 50/301 on the island.	\$111,000,000

Transit Projects, FY 2035-2045					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
32	TBD Anne Arundel County	U.S. 50 Bus Rapid Transit	Bus Rapid Transit between New Carrollton MARC/Metro station and Parole along U.S. 50 21.0 miles	New Carrollton to Parole	\$712,000,000
33	MDOT MTA Harford County	Aberdeen MARC Station	U.S. 40 at MD 132 / Bel Air Road	Transit Oriented Development (TOD); new train station, additional parking, U.S. 40 "Green Boulevard," and Station Square Plaza - new pedestrian underpass and green, terraced plaza/amphitheater.	\$70,000,000
34	TBD Howard County	Bus Rapid Transit to BWI Airport	Dorsey MARC station to BWI light rail station 9.7 miles	New bus rapid transit service: Dorsey MARC station to Arundel Mills to BWI consolidated rental car facility to BWI light rail station.	\$449,000,000
35	TBD Howard County	U.S. 1 Corridor Bus Rapid Transit	Dorsey MARC to College Park Purple Line Light Rail Station 19.5 miles	Bus Rapid Transit will emulate light rail operations at a lower cost, and is designed to link Howard County commuters from Dorsey MARC to Laurel MARC Station and Laurel and to College Park and Purple Line light rail.	\$184,000,000
36	TBD Howard County	U.S. 29 Corridor Bus Rapid Transit	U.S. 29 / U.S. 40 to MD 198 / U.S. 29 (Burtonsville) 16 miles	Bus Rapid Transit (BRT) Ellicott City / Downtown Columbia Transit Center Location (Mall Ring Road) to MD 198 in Montgomery County; Grade-separated facilities in median of U.S. 29.	\$735,000,000

Transit Projects, FY 2035-2045					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
	MDOT MTA Regional	BaltimoreLink Bus Expansion Program - Phase 2		Purchase buses to meet increasing ridership demands that exceed replacement needs.	\$90,000,000
	MDOT MTA Baltimore City	New MARC Storage and Maintenance Facility		Provide alternate location to store MARC Penn Line trains following implementation of Amtrak's Penn Station redevelopment plans, which do not accommodate current storage and maintenance at Penn Station.	\$62,000,000
37	MDOT MTA Baltimore City	Penn-Camden Connector	Penn Line / Riverside Maintenance Yard 2.2 miles	Provide access to Riverside Yard from Penn Line for locomotive repair and maintenance	\$62,000,000
38	MDOT MTA Baltimore City	West Baltimore MARC Station Relocation		Relocate existing West Baltimore MARC Station farther south. This will be consistent with construction of new B&P Tunnel and much needed ADA accessibility improvements.	\$91,000,000

Roadway Projects, FY 2035-2045					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
39	MDOT SHA Anne Arundel County	I-97	MD 32 to U.S. 50/301 6.5 miles	Add managed lanes (HOV lanes) to address capacity needs. Investigate need for additional interchange access in Crownsville.	\$391,000,000
40	MDOT SHA Anne Arundel County	MD 2	U.S. 50 to I-695 17.0 miles	Widen 4-lane sections to 6 lanes throughout. Roadway improvements, new premium transit service, new sidewalks, and permitting land use densities that support transit in select locations where redevelopment might occur.	\$299,000,000
41	MDOT SHA Anne Arundel County	MD 3	MD 424 to MD 32 4.0 miles	Widen from 4 to 6 lanes from St Stephen Church Road to MD 175. Upgrade roadway segments, improve bike/pedestrian facilities (especially crossings), and improve intersection operations.	\$120,000,000
42	MDOT SHA Anne Arundel County	MD 32	I-97 to Howard County 11 miles	Widen from 6 to 8 lanes between I-95 and MD-295. Add additional HOV-2 lanes.	\$480,000,000
43	MDOT SHA Anne Arundel County	MD 100	Howard County line to I-97 6.5 miles	Widen from 4 to 6 lanes. Possible inclusion of managed lanes.	\$271,000,000
44	MDOT SHA Anne Arundel County	MD 177	MD 177 from MD 2 to Lake Shore Drive 7.8 miles	Widen from 2 to 4 lanes.	\$196,000,000

Roadway Projects, FY 2035-2045					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
45	MDOT SHA Anne Arundel County	MD 214	MD 424 to Shoreham Beach Road 7.5 miles	Widen from 2 to 4 lanes for most of this corridor (from MD 424 to Selby Boulevard). Bicycle improvements throughout most of the corridor and pedestrian improvements in segments. Traffic signal warrant assessments recommended at MD 214 / Riva Road and MD 214 /Stepneys Lane intersections.	\$112,000,000
46	MDOT SHA Anne Arundel County	MD 295	MD 100 to I-195 3.27 miles	Widen from 4 to 6 lanes. Includes a new interchange at Hanover Road and an extension of Hanover Road from the CSX railroad tracks to MD 170.	\$331,000,000
47	MDOT SHA Anne Arundel County	MD 713 (Ridge Road)	MD 175 to MD 176 2.6 miles	Corridorwide road improvements, including reconstruction and widening, as well as intersection improvements and bike/pedestrian accommodations. Primarily widening MD 713 from 2 to 4 lanes between MD 175 and Stoney Run Drive.	\$60,000,000
48	MDOT SHA Anne Arundel County	U.S. 50	I-97 to MD 2 5.5 miles	Widen from 6 to 8 lanes.	\$330,000,000
49	Baltimore City	Baltimore Street	MLK Boulevard to President Street 1.2 miles	Roadway reconstruction using concrete, utility upgrades/replacements, sidewalk reconstruction, ADA improvements, curb and gutter reconstruction, signal upgrades, pavement markings and signing, stormwater management facilities, landscaping, and streetscaping elements.	\$26,000,000
50	MDOT SHA Baltimore County	I-795	Owings Mills Boulevard to Franklin Boulevard 2.63 miles	Widen from 4 to 6 lanes. Construct interchange at Dolfield Boulevard.	\$191,000,000

Roadway Projects, FY 2035-2045					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
51	MDOT SHA Carroll County	MD 26	MD 32 to Liberty Reservoir 2.6 miles	Widen from 4 to 6 lanes, including bike and pedestrian facilities	\$102,000,000
52	MDOT SHA Carroll County	MD 32	MD 26 to Howard County line 3.364 miles	Widen from 2 to 4 lanes; addition of pedestrian and bicycle facilities.	\$57,000,000
53	MDOT SHA Carroll County	MD 97	MD 140 Overpass to Bachmans Valley Road 4.73 miles	Widen from 2 to 5 lanes, including MD 140 / Meadow Branch Road interchange; construct pedestrian and bicycle facilities.	\$233,000,000
54	MDOT SHA Carroll County	MD 140	Market Street to Sullivan Road 2.5 miles	Widen from 6 to 8 lanes. Construct full interchange at MD 97 and Continuous Flow Intersections (CFIs) at Center Street and Englar Road. Construct outside bike lane and sidewalk in both directions.	\$271,000,000
55	MDOT SHA Carroll County	MD 140 at MD 91 (Gamber Road)	Baltimore County Line to Kays Mill Road 1.85 miles	Divided highway with new interchange at MD 91 and intersection improvements. Add pedestrian and bicycle facilities.	\$170,000,000
56	Harford County	Abingdon Road	MD 924 to U.S. 40 3.0 miles	Capacity improvements, including turn lanes, bicycle lanes, and sidewalks.	\$69,000,000
57	MDOT SHA Harford County	MD 24	U.S. 1 Bypass to south of Singer Road 5.5 miles	Widen from 4 to 6 lanes; includes sidewalks and bicycle accommodations where appropriate.	\$98,000,000
58	MDOT SHA Harford County	MD 24 (Rock Spring Road)	U.S. 1 Bypass to MD 23 1.8 miles	Add travel lane in each direction, including turn lanes and completion of shared-use path from Forest Valley Road to Red Pump Road adjacent to roadway.	\$69,000,000

Roadway Projects, FY 2035-2045					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
59	MDOT SHA Harford County	MD 24 at Singer Road Interchange		Elevate grade of cross street through movement as well as left turn movements from all directions while allowing MD 24 through and right turn movements as well as side street right turn movements to operate with free-flowing movements (as described in MD 924 study).	\$131,000,000
60	MDOT SHA Harford County	MD 24 at Wheel Road Interchange		Elevate grade of cross street through movement as well as left turn movements from all directions while allowing MD 24 through and right turn movements as well as side street right turn movements to operate with free-flowing movements (as described in MD 924 study).	\$160,000,000
61	MDOT SHA Harford County	MD 543	MD 136 to I-95 2.2 miles	Widen from 2 to 4 lanes, including intersection upgrades at MD 136, turn lanes, and bicycle and pedestrian access. Includes capacity upgrades to MD 543 / I-95 interchange. Improvement will fix queuing problems on MD 543 through intersection with MD 7.	\$161,000,000
62	Harford County	Thomas Run Road	MD 22 to West Medical Hall Road 0.8 miles	Streetscape and capacity improvements, including center turn lane, sidewalks, bicycle accessibility, pedestrian-scale lighting with banners, crosswalks, street furniture, and trash receptacles.	\$16,000,000
63	MDOT SHA Harford County	U.S. 1	MD 152 to MD 147 / U.S. 1 Business 1.3 miles	Widen from 4 to 6 lanes, including bicycle and pedestrian accommodations.	\$37,000,000
64	MDOT SHA Harford County	U.S. 1 Bypass	MD 147 / U.S. 1 Business to Hickory Bypass 4.6 miles	Widen from 2 to 4 lanes. Improve U.S. 1 / MD 24 and U.S. 1 / MD 924 interchanges.	\$165,000,000
65	MDOT SHA Harford County	U.S. 40	MD 543 to Loflin Road 1.7 miles	Widen from 4 lanes to 6 lanes, including turn lanes and bicycle and pedestrian access.	\$67,000,000

Roadway Projects, FY 2035-2045					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
66	MDOT SHA Harford County	U.S. 40 / MD 22 Interchange	0.4 miles	Capacity and safety improvements. Interchange reconstruction (reconfigure existing partial interchange to full interchange to eliminate left turns along MD 22). Sidewalks, crosswalks, and bicycle facilities where applicable.	\$35,000,000
67	MDOT SHA Howard County	MD 32	Cedar Lane to Anne Arundel County line 8.0 miles	Widen from 4 to 6 lanes (Feasibility and Needs Study required). Increase capacity at grade separations. Study feasibility of future HOV and/or HOT lanes.	\$1,025,000,000
68	MDOT SHA Howard County	MD 32	MD 32 just north of I-70 to Carroll County line 4.0 miles	Widen from 2 to 4 lanes. Safety, capacity, operational, and access improvements consistent with MD SHA Feasibility Study, MD SHA Access Control Study, and Carroll County proposal for widening MD 32 north of this project's limits.	\$69,000,000
69	MDOT SHA Howard County	MD 108	Trotter Road to Guilford Road 1.5 miles	Improvements as articulated in 2014 Clarksville Pike Streetscape Plan and Design Guidelines / Traffic Study. Includes selected road capacity improvements, resulting in a 4-lane section for most of the corridor, but not all, as well as sidewalks, shared-use paths, and traffic signal upgrades.	\$46,000,000
70	MDOT SHA Howard County	MD 175	Oceano Avenue to Anne Arundel County line 1.6 miles	Widening: going from one travel lane in some areas (both directions) to two travel lanes for entire project. Also, bicycle, transit, and pedestrian improvements consistent with Anne Arundel County widening proposals.	\$21,000,000
71	MDOT SHA Howard County	MD 175 / I-95 Interchange	1.0 miles	Improvements to interchange, including CD lanes on I-95, consistent with preferred options in MDOT-SHA MD 175 Improvement Study.	\$182,000,000
72	MDOT SHA Howard County	U.S. 1	Prince George's County Line to Baltimore County line 11.0 miles	Widen from 4 to 6 lanes; construct typical section as defined in State/ County MOU for U.S. 1 revitalization	\$179,000,000

Roadway Projects, FY 2035-2045					
Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estimated Cost (YOE)
73	MDOT SHA Howard County	U.S. 1 / MD 175 Interchange	MD 175 0.5 miles	Construct new grade-separated interchange.	\$153,000,000
74	MDOT SHA Howard County	U.S. 1 Revitalization Projects	MD 175 to Whiskey Bottom Rd 4.5 miles	U.S. 1 - MD 175 to Whiskey Bottom Road: widening, pedestrian, bike, transit, streetscape and access improvements consistent with U.S. 1 Design Manual (to the extent possible); developer participation with SHA coordination and SHA/County MOU for U.S. 1 revitalization cross section. Breakout project.	\$145,000,000

Maryland Transportation Authority Projects

The Maryland Transportation Authority (MDTA) is an independent agency responsible for managing, operating, and improving the state’s toll facilities. Because MDTA projects are funded by tolls, they are not included in the listing of projects to be supported with federal funds.

Maximize2045, however, must consider these projects because of their effects on air quality conformity and travel demand. Chapter 7 includes a table showing the projects MDTA expects to implement by 2045. BMC staff included these projects in the master network of programmed and planned system improvements. Staff analyzed this master network to determine air quality conformity and to predict systemwide travel demand effects (Appendix C shows the results of these analyses).

Illustrative Projects

Illustrative projects are projects that eventually could be included in the adopted transportation plan if additional funds beyond the reasonably anticipated financial resources identified in the plan were to become available.

There is no requirement to select any project from an illustrative list of projects in a metropolitan plan at some future date, when funding might become available. Nonetheless, illustrative projects can be helpful in guiding transportation and land use planning efforts at both the regional and local levels because they provide a resource from which the BRTB can select regional priorities should additional funding become available.

Chapter 7 includes a table showing the list of illustrative projects for the Baltimore region.



NOTICE

INSPECTION STATION

ALL VEHICLES

OVER 5T GVW

USE EXIT 50

3/4 MILE

WHEN FLASHING



Chapter 1:

Requirements
and Policies





REQUIREMENTS AND POLICIES

Regional Long-Range Transportation Plan

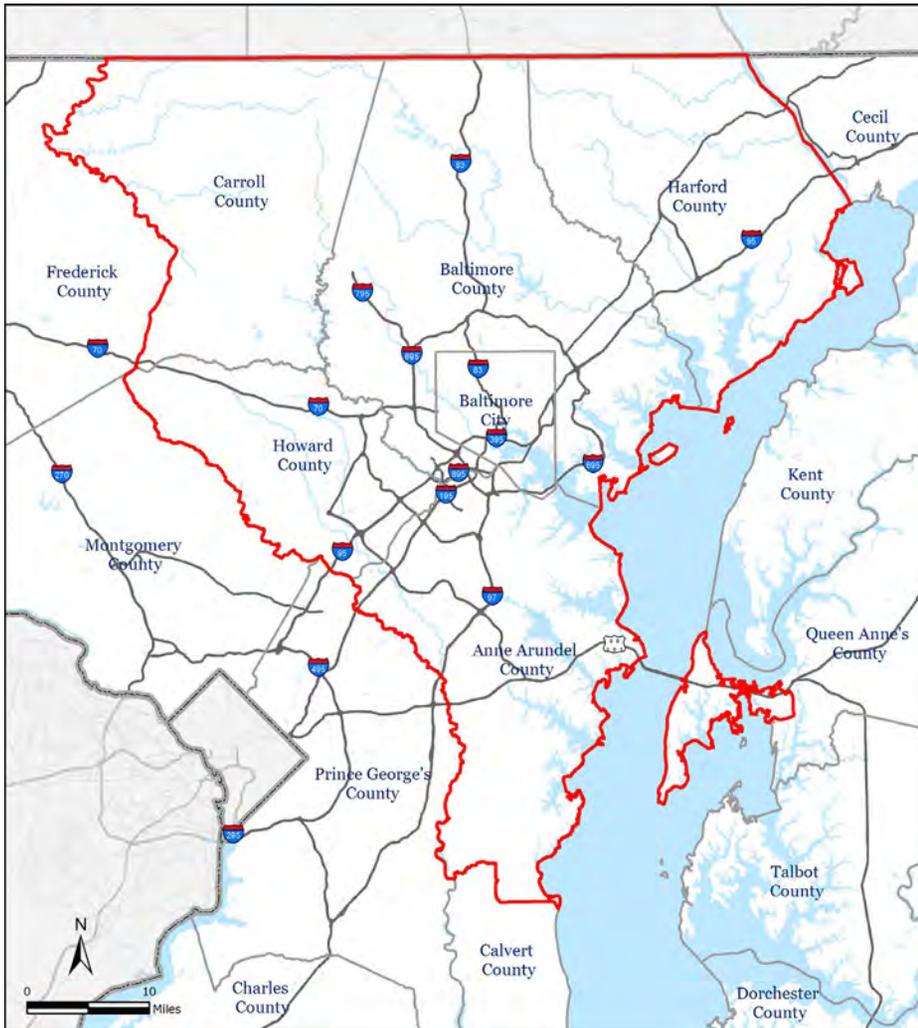
Maximize2045: A Performance-Based Transportation Plan is the regional long-range transportation plan for the Baltimore Metropolitan Planning Area (MPA).

This chapter focuses on the legal bases for development of the plan. This includes an overview of federal requirements for the planning process, fiscal requirements, and civil rights laws.



At a minimum, an MPA must cover the urbanized area and contiguous geographic areas likely to become urbanized within the next 20 years. The Baltimore MPA consists of Baltimore City; Anne Arundel, Baltimore, Carroll, Harford, and Howard counties; and a portion of Queen Anne's County (see map).

Baltimore Metropolitan Planning Area



Requirements under Federal Law

The most recent federal transportation legislative program, Fixing America's Surface Transportation (FAST) Act, was signed into law on December 4, 2015. The FAST Act preserves the commitment to the metropolitan transportation planning process established in previous federal initiatives.

On May 27, 2016, the U.S. Department of Transportation (U.S. DOT) issued the latest regulations regarding metropolitan transportation planning, specifically outlining the planning requirements associated with the metropolitan planning process, including the regional long-range transportation plan.

Metropolitan Planning Organization (MPO)

Federal law requires every urbanized area in the U.S. with a population greater than 50,000 to have a metropolitan planning organization (MPO). An MPO is a regional policy making organization consisting of representatives of local governments and governmental transportation agencies. The purpose of an MPO is to ensure regional cooperation in transportation planning.

The functions of an MPO include:

- Coordinate federal funding for transportation.
- Conduct transportation planning in cooperation with federal agencies, state agencies, and the operators of publicly owned transit services.
- Ensure that transportation expenditures are based on a continuing, cooperative, and comprehensive (3-C) planning process.
- Provide reasonable opportunity for input from the public and interested parties.

Baltimore Regional Transportation Board (BRTB)

The BRTB is the federally designated MPO acting as the regional transportation planning and policy making body for the Baltimore region. In this capacity, the BRTB is directly responsible for conducting the continuing, cooperative, and comprehensive (3-C) transportation planning process for the Baltimore metropolitan region in accordance with the metropolitan planning requirements.

The BRTB provides policy direction and oversight in the development of the federally mandated regional long-range transportation plan, the Transportation Improvement Program (TIP) and the transportation element of the State Air Quality Implementation Plan (SIP).

The BRTB is a 13-member policy board consisting of Annapolis and Baltimore cities; Anne Arundel, Baltimore, Carroll, Harford, Howard, and Queen Anne's counties; the Maryland Department of Transportation (MDOT); the Maryland Department of the Environment (MDE); the Maryland Department of Planning (MDP); the Maryland Transit Administration (MTA); and a representative of public transportation.

Voting rights are extended to all members with the exception of MDE, MDP, and MTA. These agencies serve the BRTB in an advisory capacity. Harford Transit currently serves the role of "representative of public transportation" on the BRTB, based on a vote of the public transit providers in the region.

Representatives from the local jurisdictions and agencies have been designated and empowered by their respective lead elected official or department secretary to integrate locally oriented policies and needs.

Baltimore Metropolitan Council (BMC)

The Baltimore Metropolitan Council (BMC) provides technical staff to assist the BRTB and its advisory committees. BMC staff supports regional planning by providing:

- long- and short-range transportation planning
- demographic and economic analyses
- travel demand modeling
- air quality modeling
- environmental coordination
- GIS services
- development monitoring (database of building permits)

In addition, the BMC is the host agency for the Urban Area Work Group (responsible for coordinating regional emergency preparedness activities), Reservoir Watershed Protection Committee, and Regional Cooperative Purchasing Committee.



Regional Plan / Regional Program

Federal law requires each MPO to develop a transportation plan and a Transportation Improvement Program (TIP) for its region. The BRTB evaluates and selects projects for plans and programs in accordance with regional goals and policies. This is done in consultation with state agencies, transit providers, and local jurisdictions.

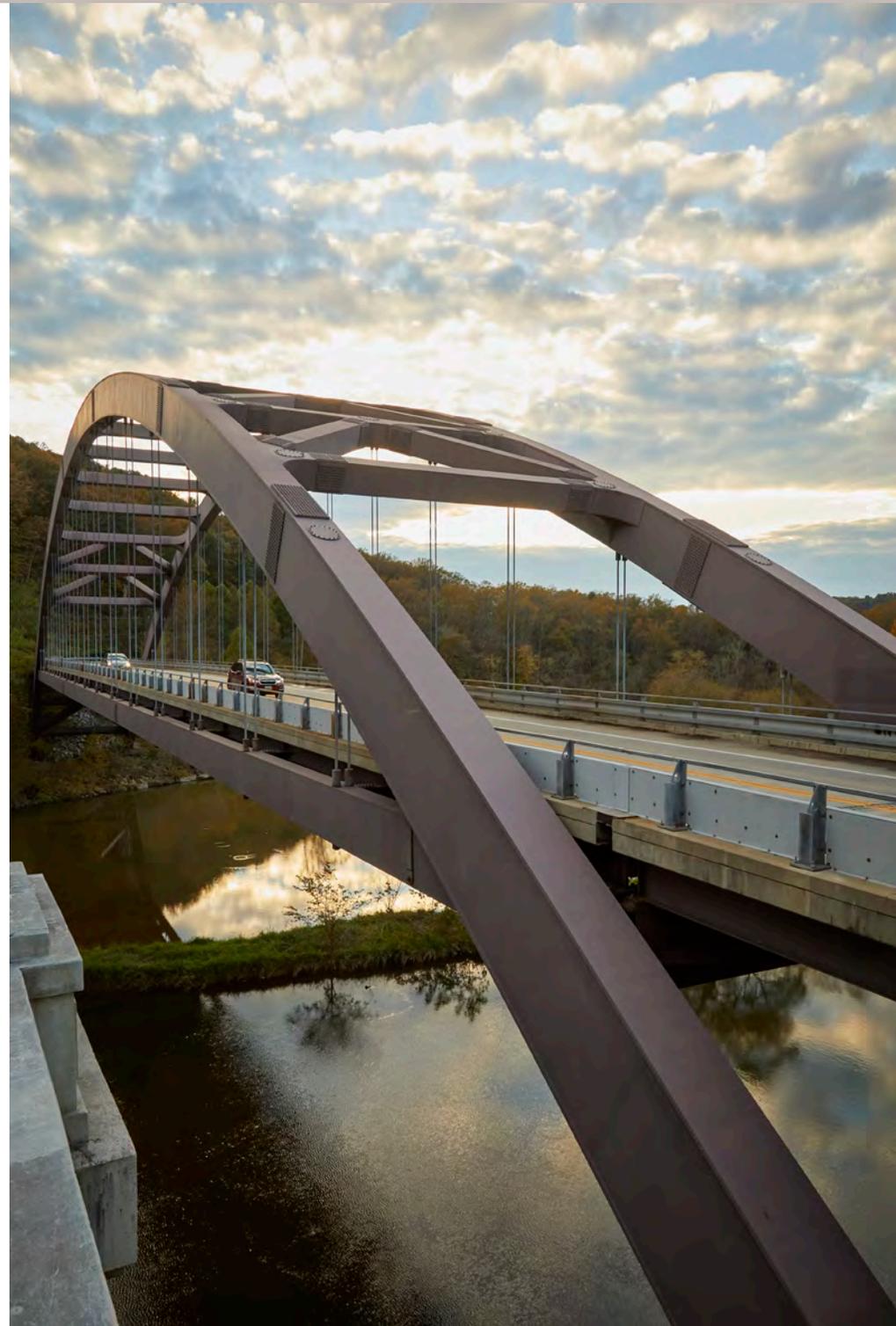
Regional Long-Range Transportation Plan

Maximize2045 is the long-range transportation plan for the Baltimore region. *Maximize2045* establishes the region's broad transportation goals and strategies. These goals and strategies will guide transportation investments over the life of the plan (2024-2045).

Maximize2045 contains a list of the major surface transportation projects the region expects to implement in the period from 2024 to 2045. The plan also shows revenues the region expects to have available for these projects and estimated costs of these projects.

Transportation Improvement Program

The Transportation Improvement Program (TIP) is the short-range programming element of the regional plan. The TIP shows all of the transportation projects with committed federal funding that the region expects to design and/or implement over the next four years. The TIP ensures consistency between plan recommendations and project implementation in the region.





Maximize2045 establishes the region's broad transportation goals and strategies.

Planning Factors

Federal law requires the metropolitan planning process to provide for consideration and implementation of projects, strategies, and services that will address these factors:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
- Increase the safety of the transportation system for motorized and non-motorized users.
- Increase the security of the transportation system for motorized and non-motorized users.
- Increase accessibility and mobility options of people and freight.
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
- Promote efficient system management and operation.
- Emphasize the preservation of the existing transportation system.
- Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
- Enhance travel and tourism.

Fiscal Constraint

Federal law requires regional transportation plans and programs to be fiscally constrained.

costs ≤ revenues

The regional long-range transportation plan must include a financial plan that shows how the region expects to pay for each project and program. That is, *Maximize2045* is not a “wish list” of projects.

For *Maximize2045*, the BRTB, in consultation with the Maryland Department of Transportation, has forecasted the amount of funding from federal, state, and private sources the region reasonably anticipates will be available for the period from 2024-2045.

The total estimated costs of *Maximize2045* projects and programs cannot exceed the total anticipated revenues. Chapter 6 of this document provides details on the anticipated revenues for *Maximize2045*.

For the TIP, fiscal constraint means that each programmed project must include (1) a budget showing committed funding and funding sources and (2) a realistic implementation schedule based on when funds will be available.

Performance-Based Approach

Under the FAST Act and its predecessor, the Moving Ahead for Progress in the 21st Century Act (Map-21), the metropolitan transportation planning process for both states and MPOs must “provide for the establishment and use of a performance-based approach to transportation decision making.”

Performance Measures and Targets – Highways

Federal law requires the U.S. DOT to establish national standards for asset condition and system performance for facilities on the National Highway System (NHS). The FAST Act also continues the Highway Safety Improvement Program established under previous legislation. This program is intended to “achieve a significant reduction in traffic fatalities and serious injuries on all public roads.” The performance-based approach found in both the state and the metropolitan planning processes must support national goals (see box on the next page).

Each state is required to develop an asset management plan for its NHS facilities and a state highway safety improvement program. This includes a strategic highway safety plan that “identifies and analyzes highway safety problems and opportunities.”

The state plans must include strategies that will make progress toward achieving targets for asset condition, system performance, and safety. States establish state performance measures and targets based on the national standards.

MPOs set the regional performance measures and targets, in consultation with states, to use in tracking progress toward attaining critical outcomes for the region.

The metropolitan transportation planning process for both states and MPOs must “provide for the establishment and use of a performance-based approach to transportation decision making.”

National Performance Goals - Highways

Safety – Achieve a significant reduction in traffic fatalities and serious injuries on all public roads.

Infrastructure Condition – Maintain the highway infrastructure asset system in a state of good repair.

Congestion Reduction – Achieve a significant reduction in congestion on the National Highway System.

System Reliability – Improve the efficiency of the surface transportation system.

Freight Movement and Economic Vitality – Improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.

Environmental Sustainability – Enhance the performance of the transportation system while protecting/enhancing the natural environment.

Reduced Project Delivery Delays – Reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

Performance Measures and Targets – Transit Systems

Federal law requires the U.S. DOT to implement a national transit asset management system and a national transit safety program.

The National Transit Asset Management System is a “strategic and systematic process of operating, maintaining, and improving public transportation capital assets effectively through the life cycle of such assets.” The foundation of this system is the concept of state of good repair.

The purpose of the National Public Transportation Safety Plan is to improve the safety of all public transportation systems. This plan includes:

- safety performance criteria for all modes of public transportation
- minimum safety performance standards for public transportation vehicles used in revenue operations
- a public transportation safety certification training program.

Each direct recipient of federal transit funds (in this region, this is the Maryland Transit Administration) develops its own asset management and safety plans, consistent with the national plans.

MPOs develop regional transit system performance targets for asset management and safety in coordination with transit providers.

Performance Measures and Targets – More Information

Chapter 5 covers the specific regional performance measures and targets set by the BRTB, in consultation with MDOT and the federal agencies.

Air Quality Conformity

“Conformity” means that the projects in *Maximize2045* will not cause or contribute to new air quality violations, worsen existing violations, or delay timely attainment of air quality standards.

National Air Quality Standards

To protect public health, the U.S. Environmental Protection Agency (EPA) sets the national ambient air quality standards (NAAQS) for certain “criteria pollutants.” The EPA then determines the areas that do not meet these standards.

The Baltimore region is designated as a nonattainment area with regard to the 8-hour ozone National Ambient Air Quality Standard (NAAQS).

State Implementation Plan

The State Implementation Plan (SIP) developed by the Maryland Department of the Environment establishes a plan for how the region will achieve the NAAQS by the required attainment date. The SIP addresses all sources of pollution in the region. For on-road mobile sources of pollution (e.g., cars, trucks, and buses), the SIP establishes motor vehicle emission budgets.

Conformity Evaluation

The Clean Air Act Amendments require careful evaluation of the conformity between transportation plans and programs and the SIP for attaining air quality standards. The region must show that its transportation plans and programs conform to the air quality goals in the SIP and are within the motor vehicle emission budgets.

Maximize2045 demonstrates conformity since the projected emissions levels from its proposed projects are less than the emissions “budgets” established in the State Implementation Plan.

See Appendix C for technical details of the air quality conformity analysis performed for *Maximize2045*.



Congestion Management Process

Federal law requires all metropolitan areas with populations greater than 200,000 to have a Congestion Management Process (CMP).

The CMP identifies actions and strategies to reduce traffic congestion and increase mobility. These include:

- identifying congested locations
- determining the causes of congestion
- evaluating the congestion mitigation potential of different strategies
- evaluating the effects of previously implemented strategies.

Appendix D includes technical details on the region’s CMP and how the projects in this plan are consistent with this CMP.

Consultation with Interested Parties and the Public

Federal law requires MPOs to consult with state and local officials, transit operators, and the public when conducting transportation planning.

MPOs are required to develop a public participation plan that defines a process for providing the public and interested parties with reasonable opportunities to be involved in the planning process. Appendix E includes details about the public engagement process during the development of *Maximize2045*.

MPOs are encouraged to consult or coordinate with planning officials responsible for other types of planning activities affected by transportation. These activities include planned growth, economic development, environmental protection, and freight movement.

Federal law also stipulates that the public participation plan consider the needs of people and groups traditionally underserved by transportation systems, including low-income and minority households.

Appendix E presents additional details on the BRTB's public participation process and its specific outreach efforts in developing *Maximize2045*.





Title VI of the Civil Rights Act

Regional plans and programs must comply with Title VI. The intent of this law is to ensure that public funds are not spent in a manner that encourages, subsidizes, perpetuates, or results in discrimination.

Title VI of the Civil Rights Act of 1964 states that no person in the U.S. shall, on the basis of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

Because the BRTB receives federal funding in carrying out the metropolitan planning process, its products (e.g., this regional transportation plan) and programs must comply with Title VI.

Executive Order – Environmental Justice

Environmental Justice seeks to ensure that the benefits and burdens of transportation investments are shared as equitably as possible among all affected communities.

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority and Low Income Populations,” addresses this issue. This Executive Order and its accompanying memorandum reinforce the requirements of Title VI that focus federal attention on environmental and human health conditions in minority and low-income communities.

Appendix C includes an analysis of the potential effects of this plan’s major projects on Environmental Justice populations.

