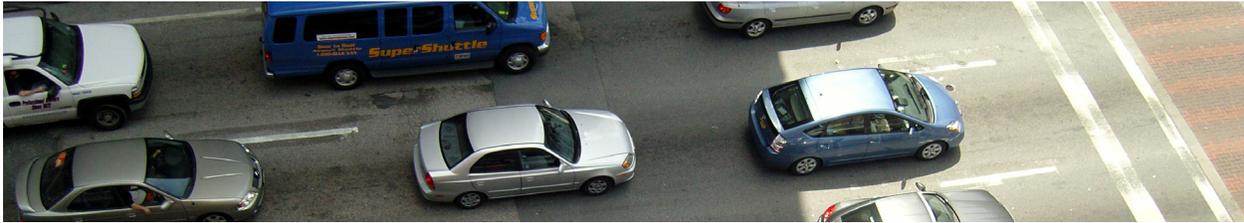


Chapter 4: Major Projects and Programs



Anticipated Projects and Funding – FY 2020-2040

The Transportation Improvement Program consists of near-term projects with defined scopes, established schedules, and committed funds. In contrast, *Maximize2040* consists of long-term programs and projects with conceptual scopes, potential schedules, and anticipated funding. The TIP covers the period from FY 2016 to 2019, and *Maximize2040* covers the period from FY 2020 to 2040.

Sponsors of *Maximize2040* projects have yet to work out the details of project scopes. Similarly, funds to cover the design, right of way, and construction phases of *Maximize2040* projects and programs have not been committed yet. Such funds would come from forecasted revenues the region reasonably expects to be available for major projects and programs 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 programs and projects included in this plan represent the best judgment of the BRTB about what is desirable and possible, given existing conditions and future expectations.

Shown below are revenues (from federal, state, and private sources) the BRTB and the Maryland Department of Transportation anticipate will be available for 2020-2040, by type of investment.

- System operations: \$29.954 billion
- System preservation: \$12.102 billion
- Major expansion projects: \$15.590 billion
- **Total revenues: \$57.646 billion**

This chapter shows anticipated projects in the third category: major expansion projects. See Chapter 3 and Appendix D for details about revenue forecasts.

Potential Projects Submitted for *Maximize2040*

Candidate Projects from Local Jurisdictions and State Modal Agencies

The local jurisdictions, in consultation with the Maryland Transit Administration and the Maryland State Highway Administration, submitted 89 projects for consideration for *Maximize2040*. These included 17 transit projects and 72 highway projects. Many of these transit and highway projects include in their scopes improvements to adjoining bicycle and pedestrian facilities.

The specific criteria used to evaluate and rank these projects are included in Appendix F.

maximize2040 Project Submittal Form Submit by E-Mail
Print Form

Contact Information:
 Project Sponsor (Organization): _____
 Contact Name: _____
 Phone: _____ Ext. _____ E-Mail: _____

Project Information:
 Jurisdiction: City of Annapolis Harford County Anne Arundel County Carroll County
 City of Baltimore Howard County Baltimore County

Project Priority: _____
 Project Type: _____
 Project Name: _____
 Total Length (Miles): _____
 Projected Year of Operation: _____
 Project Limits: _____

Roadway/Interchange Project:
 Functional Classification: _____ Roadway Type: _____
 Type of Improvement: _____ # New or Widening, # of Lanes: From: _____ To: _____
 Type of Interchange: _____ Projected ADT (Year of Operation): _____
 Current Ave. Daily Traffic (ADT): _____

Transit Project:
 Type of Facility: _____ Type of Improvement: _____
 Current Daily Ridership: _____ Projected Ridership (Year of Operation): _____

Cost Information:
 Estimated capital cost (yr. of expenditure \$): _____ Estimated annual operating costs (\$): _____
 Was project in last long-range plan? _____ Capital cost of project, last plan (\$): _____

Suggestions for Major Projects from Members of the Public

In addition, the BRTB solicited ideas for major, long-term projects from the public. This process took place in late 2014. Interested people could submit project ideas on the BMC website through an interactive map or through hard-copy forms. See a description of this process in Appendix I.

Of the more than 1,140 public project ideas submitted by the public, 178 relate to major, long-term projects that potentially could be included in *Maximize2040*. A summary of these major ideas follows:

- 101 suggestions to extend the MARC (commuter rail), Metro (subway), or light rail systems (e.g., recommendations to extend Metro and light rail lines beyond their existing termini: to Columbia, to Harford County, to Dundalk, and to Pennsylvania; also, support for the Red Line project)
- 31 suggestions to construct new or widened roads on the National Highway System (NHS) (e.g., recommendations to widen I-695, construct a new Harford-Baltimore County connector, extend U.S. 29 northward)
- 22 suggestions to construct new or widened non-NHS roads (e.g., widening of MD 97 in Carroll County, MD 543 in Harford County, MD 32 and MD 100 in Howard County)
- 14 suggestions to construct new or upgraded interchanges
- 10 suggestions to provide high-speed rail service to Washington, DC, and/or New York City

BMC staff presented all of the recommendations for major, long-term projects to the Technical Committee that advises the BRTB as well as the BRTB itself for review and consideration. In addition, staff presented a summary of the other submittals (small-scale project ideas and general comments).

Staff also shared all comments related to small-scale, short-term projects, as well as general comments, with the responsible modal agencies and local jurisdictions for review and consideration. The objective of this sharing of public ideas is to make the BRTB members, modal agencies, and local jurisdictions aware of the kinds of issues people are concerned about, as well as the specific projects that submitters believe would address these issues over the short and long terms. Click on the following link for a complete list of ideas (major projects, minor projects, general comments) submitted by the public:

<http://www.baltometro.org/phocadownload/Publications/Transportation/Plans/Maximize2040/PublicProjectIdeas.pdf>.

Preferred Alternative – Major Expansion Projects, FY 2020-2040

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 system expansion projects selected by applying the adopted evaluation and scoring criteria, consistent with federal laws and policies and the region's adopted transportation goals.

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, to predict systemwide travel demand effects, and to evaluate effects on vulnerable populations. Appendix G shows the results of these analyses.

Fiscal Constraint

For the projects and programs in the preferred alternative, the BRTB coordinated with the Maryland Department of Transportation to identify future funding sources the region reasonably anticipates will be available. This is to comply with the requirement for a financially constrained plan.

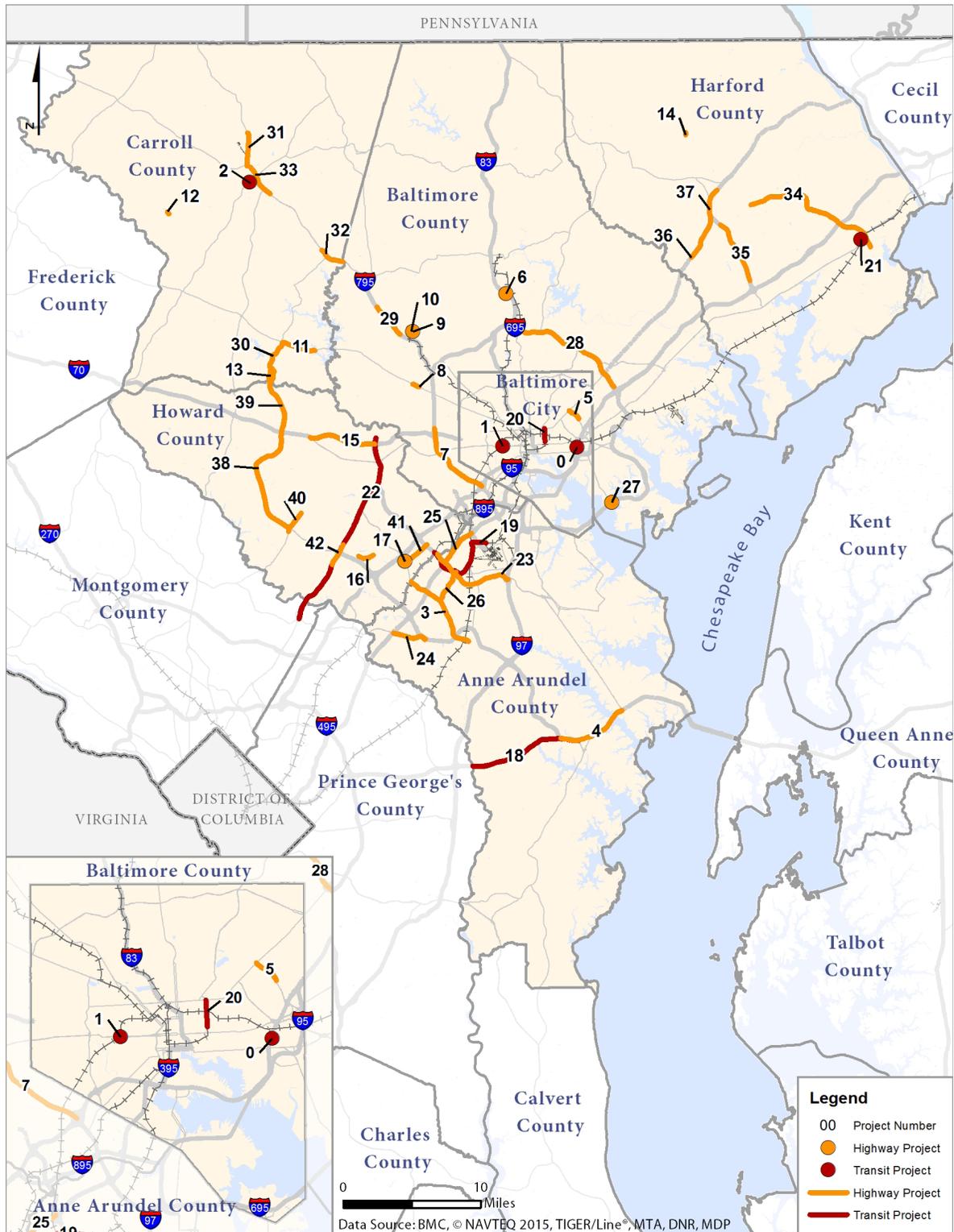
Chapter 4: Major Projects and Programs

The following table shows the fiscal constraint breakdown by time period.

Fiscal Constraint of Preferred Alternative Expansion Projects – Anticipated Investments Compared to Forecasted Revenues		
2020-2029	Anticipated Investments	Total Forecasted Revenues
Major Transit Projects	\$459,000,000	
Major Roadway Projects	\$2,167,000,000	
Small Program Set-Aside	\$280,000,000	
Total Investments vs. Total Revenues	\$2,906,000,000	\$6,005,000,000
2030-2040	Anticipated Investments	Total Forecasted Revenues
Major Transit Projects	\$3,751,000,000	
Major Roadway Projects	\$5,487,000,000	
Small Program Set-Aside	\$340,000,000	
Total Investments vs. Total Revenues	\$9,578,000,000	\$9,585,000,000
Totals for 2020-2040 Period	Anticipated Investments	Percentage by Category
Major Transit Projects	\$4,210,000,000	33.7%
Major Roadway Projects	\$7,654,000,000	61.3%
Small Program Set-Aside:		
Transportation System Management and Operations (TSMO)	\$80,000,000	0.6%
Ladders of Opportunity	\$100,000,000	0.8%
Complete Streets / Bicycle / Pedestrian	\$155,000,000	1.2%
Transportation Emission Reduction Measures (TERMs)	\$285,000,000	2.3%
Total Investments vs. Total Revenues	\$12,484,000,000	\$15,590,000,000

The development of *Maximize2040* was an 18-month process. One of the early components was the financial forecast. The forecast included an increased state share of funding to cover the cost of a New Starts project (Red Line light rail project) that was in the last regional transportation plan. Late in the process of developing *Maximize2040*, the new administration decided to withdraw the project from the New Starts Program. The state funding set aside for this project will be reallocated to other projects within the state of Maryland but not necessarily within the BRTB's region. The state as a member of the BRTB will continue to work and coordinate with the other BRTB members to address additional monies available to the Baltimore region.

Locations of Major Expansion Projects, FY 2020-2040



Chapter 4: Major Projects and Programs

Preferred Alternative – Major Expansion Projects, FY 2020-2040

The following tables show projects in the time periods within which the BRTB anticipates they might be implemented. Sponsors developed estimated year of expenditure (YOE) cost estimates by applying current assumptions about project scopes, future inflation rates, and future conditions. Any of these factors could change over the next four years, by the time of the next update of the regional plan. For this reason, these cost estimates should be considered conceptual in nature.

Anticipated Transit Projects, FY 2020-2029						
Map ID	Jurisdiction	Project Name	Limits / Length	Description	Estimated Cost (YOE)	Primary Goal(s) Addressed
	Regional	MARC Growth and Investment Phase 1		Improvements to MARC mainline capacity, maintenance facilities, and station areas	\$258,000,000	Mobility
	Regional	MTA Bus Expansion Program Phase 1		Purchase of buses to meet increasing ridership demands (beyond replacement needs), 2020-2029	\$60,000,000	Accessibility
	Harford County/ Baltimore City	MTA Commuter Bus Service	Harford County to downtown Baltimore and Harbor East; from Baltimore to Aberdeen Proving Ground (APG) 35.7 miles	Additional service to downtown Baltimore / Harbor East; reverse commute from Baltimore to APG; connection of U.S. 40 service with Harford Transit	\$2,000,000	Mobility, Accessibility
0	Baltimore City	Bayview MARC and Intermodal Station	Lombard Street at Bayview Boulevard	New station	\$73,000,000	Mobility, Accessibility
1	Baltimore City	West Baltimore MARC station		Station upgrades	\$64,000,000	Mobility, Accessibility
2	Carroll County	TrailBlazer Transit Hub	Undefined; general Westminster area	Centrally located facility to enable transfers and travel training for TrailBlazer riders	\$2,000,000	Accessibility
				Anticipated Transit Investments, 2020-2029	\$459,000,000	

Anticipated Highway Projects, FY 2020-2029

Map ID	Jurisdiction	Project Name	Limits / Length	Description	Estimated Cost (YOE)	Primary Goal(s) Addressed
3	Anne Arundel County	MD 175	Howard County line to MD 170 0.8 miles	Widen from 2 to 3 lanes from County line to MD 295; widen from 4 to 6 lanes from MD 295 to MD 170	\$274,000,000	Mobility, Safety
4	Anne Arundel County	U.S. 50/301	I-97 to MD 2 1.4 miles	Bridge reconstruction/widening; movable barrier on bridge	\$353,000,000	Preservation, Mobility, Safety
5	Baltimore City	Moravia Road	Belair Road to Sinclair Lane 1.0 miles	Roadway, curb, and sidewalk rehabilitation; ADA improvements; streetscape elements	\$12,000,000	Preservation, Accessibility, Safety
6	Baltimore County	I-83 over Padonia Road		Reconstruct I-83 bridge; pedestrian and bike improvements to Padonia Road	\$12,000,000	Preservation, Accessibility, Safety
7	Baltimore County	I-695	I-95 to MD 122 6.1 miles	Widen from 6 to 8 lanes	\$456,000,000	Mobility, Preservation, Safety
8	Baltimore County	MD 26	Rolling Road to Courtleigh Drive 0.5 miles	Roadway, curb, sidewalk, bicycle, ADA, and pedestrian improvements	\$24,000,000	Accessibility, Safety
9	Baltimore County	MD 140 / Painters Mill Road	MD 140 / Painters Mill intersection; access roads east and west of MD 140	Intersection improvements, additional left turn lane, and parallel access roads	\$21,000,000	Mobility, Safety
10	Baltimore County	MD 140	Garrison View Road to Owings Mills Road 0.6 miles	Widen from 4 to 6 lanes; northbound third lane drops north of Owings Mills Boulevard	\$36,000,000	Mobility, Safety

Chapter 4: Major Projects and Programs

Anticipated Highway Projects, FY 2020-2029						
Map ID	Jurisdiction	Project Name	Limits / Length	Description	Estimated Cost (YOE)	Primary Goal(s) Addressed
11	Carroll County	MD 26	MD 32 to Reservoir 2.5 miles	Widen from 4 to 6 lanes; pedestrian/ bicycle facilities	\$91,000,000	Mobility, Accessibility, Safety
12	Carroll County	MD 31 (New Windsor Main Street / High Street)	Church Street to Coe Drive 1.0 miles	Infrastructure improvements and pavement rehabilitation	\$15,000,000	Preservation, Safety
13	Carroll County	MD 851 (Sykesville Main Street / Springfield Avenue)	Howard County line to Cooper Drive 0.8 miles	Infrastructure improvements and pavement rehabilitation	\$9,000,000	Preservation, Safety
14	Harford County	MD 24 – Section G	900 feet south of Sharon Road to 1,700 feet north of Ferncliff Lane 0.9 miles	Resurfacing and reconstruction, including slope repair and guardrail replacement	\$12,000,000	Preservation, Safety
15	Howard County	I-70	U.S. 29 to U.S. 40 (near MD 32) 6.8 miles	Widen from 4 to 6 lanes; includes reconstruction of I-70 / Marriottsville Road interchange and upgrading of I-70 / U.S. 29 interchange	\$712,000,000	Mobility, Safety
16	Howard County	Snowden River Parkway	Oakland Mills Road to Broken Land Parkway 1.1 miles	Widen from 4 to 6 lanes; includes auxiliary lanes and pedestrian, bicycle, and transit improvements on both sides of road	\$18,000,000	Mobility, Accessibility, Safety
17	Howard County	U.S. 1 / MD 175 Interchange		Grade separation coordinated with I-95 / MD 175 improvements	\$122,000,000	Mobility, Safety
				Anticipated Roadway Investments, 2020-2029	\$2,167,000,000	

Anticipated Transit Projects, FY 2030-2040

Map ID	Jurisdiction	Project Name	Limits / Length	Description	Estimated Cost (YOE)	Primary Goal(s) Addressed
	Regional	MARC Growth and Investment Phase 2		Improvements to MARC mainline capacity, maintenance facilities, and station areas	\$410,000,000	Mobility
	Regional	MTA Bus Expansion Program Phase 2		Purchase of buses to meet increasing ridership demands (beyond replacement needs), 2030-2040	\$95,000,000	Accessibility
18	Anne Arundel County	U.S. 50 Bus Rapid Transit	Proposed Annapolis-Parole Intermodal Center to Prince George's Co. line 17.1 miles	New bus rapid transit service	\$711,000,000	Mobility, Accessibility
19	Anne Arundel County / 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	\$293,000,000	Mobility, Accessibility
20	Baltimore City	Green Line	Johns Hopkins Hospital to North Avenue 1.1 miles	Extension of Metro line, including two new stations (at Amtrak line and North Avenue)	\$1,692,000,000	Accessibility, Mobility
21	Harford County	Aberdeen MARC Station Transit-Oriented Development	U.S. 40 at MD 132 / Bel Air Road	New train station, additional parking, U.S. 40 "Green Boulevard," Station Square Plaza	\$70,000,000	Mobility, Prosperity
22	Howard County	U.S. 29 Bus Rapid Transit	U.S. 29 at Mount Hebron to MD 198 / U.S. 29 (Burtonsville) 16.0 miles	New bus rapid transit service	\$480,000,000	Mobility, Accessibility
				Anticipated Transit Investments, 2030-2040	\$3,751,000,000	

Chapter 4: Major Projects and Programs

Anticipated Highway Projects, FY 2030-2040						
Map ID	Jurisdiction	Project Name	Limits / Length	Description	Estimated Cost (YOE)	Primary Goal(s) Addressed
23	Anne Arundel County	MD 100	Howard Co. line to I-97 3.0 miles	Widen from 4 to 6 lanes	\$567,000,000	Mobility, Safety
24	Anne Arundel County	MD 198	MD 295 to MD 32 4.6 miles	Widen from 2 to 4 lanes to provide easier access to Ft. Meade and Odenton Town Center	\$302,000,000	Mobility, Accessibility, Safety
25	Anne Arundel County	MD 295	I-195 to MD 100 2.9 miles	Widen from 4 to 6 lanes	\$287,000,000	Mobility, Safety
26	Anne Arundel County	MD 713	MD 175 to MD 176 1.3 miles	Widen from 2 to 4 lanes: MD 175 to Arundel Mills Boulevard Widen from 4 to 6 lanes: Arundel Mills Boulevard to MD 176	\$166,000,000	Mobility, Safety
27	Baltimore County	I-695 / Broening Highway		Full interchange at Exit 44 of I-695 to support redevelopment at Sparrows Point	\$121,000,000	Mobility, Prosperity, Safety
28	Baltimore County	I-695	I-95 to I-83 11.3 miles	Widen from 6 to 8 lanes; allows for future lanes from I-95 SW to I-95 NE	\$1,043,000,000	Mobility, Preservation, Safety
29	Baltimore County	I-795	Franklin Boulevard to Owings Mills Boulevard 2.6 miles	Widen from 4 to 6 lanes, including addition of auxiliary lanes to Owings Mills Boulevard; includes new interchange at Dolfield Boulevard	\$219,000,000	Mobility, Safety
30	Carroll County	MD 32	MD 26 to Howard County line 3.4 miles	Widen from 2 to 4 lanes; addition of pedestrian and bicycle facilities	\$189,000,000	Mobility, Accessibility, Safety
31	Carroll County	MD 97 North	MD 140 overpass to Bachmans Valley Road 1.6 miles	Widen from 2 to 5 lanes, including interchange at Meadow Branch Road; addition of pedestrian and bicycle facilities	\$181,000,000	Mobility, Accessibility, Safety

Anticipated Highway Projects, FY 2030-2040

Map ID	Jurisdiction	Project Name	Limits / Length	Description	Estimated Cost (YOE)	Primary Goal(s) Addressed
32	Carroll County	MD 140 at MD 91	Baltimore County line to Kays Mill Road 2.0 miles	Divided highway with new interchange at MD 91 and intersection improvements, addition of pedestrian and bicycle facilities	\$197,000,000	Mobility, Accessibility, Safety
33	Carroll County	MD 140	Market Street to Sullivan Road 3.1 miles	Widen from 6 to 8 lanes, full interchange at MD 97 (Malcolm Drive), Continuous Flow Intersection (CFI) at Center Street and Englar Road, addition of pedestrian and bicycle facilities	\$401,000,000	Mobility, Accessibility, Safety
34	Harford County	MD 22	MD 543 to APG Gate 11.0 miles	Widen existing 2- and 3-lane section to 4 and 5 lanes; include HOV lane from Old Post Road to APG gate; bicycle and pedestrian access and transit queue jump lanes where applicable	\$537,000,000	Mobility, Accessibility, Safety
35	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	\$249,000,000	Mobility, Accessibility, Safety
36	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	\$296,000,000	Mobility, Accessibility, Safety
37	Harford County	U.S. 1 Bypass	MD 147 / U.S. 1 Business to north of MD 24 / MD 924 4.6 miles	Widen from 2 to 4 lanes; improve U.S. 1 / MD 24 and U.S. 1 / MD 924 interchanges	\$127,000,000	Mobility, Safety

Chapter 4: Major Projects and Programs

Anticipated Highway Projects, FY 2030-2040						
Map ID	Jurisdiction	Project Name	Limits / Length	Description	Estimated Cost (YOE)	Primary Goal(s) Addressed
38	Howard County	MD 32	MD 108 to I-70 9.0 miles	Widen from 2 to 4 lanes; includes new interchanges at Rosemary Lane and MD 144 and upgrades to I-70 interchange	\$355,000,000	Mobility, Safety
39	Howard County	MD 32	north of I-70 4.0 miles	Widen from 2 to 4 lanes; safety, operational, and access improvements; consistent with Carroll County proposal for widening MD 32 north of this project's limits	\$38,000,000	Mobility, Safety
40	Howard County	MD 108	Trotter Road to Guilford Road 1.5 miles	Widen roadway where needed/ possible to 4 lanes; includes 8- to 10-foot pedestrian/ bicycle pathways and new signalized intersections (including pedestrian actuation)	\$23,000,000	Mobility, Accessibility, Safety
41	Howard County	U.S. 1 Typical Section	Montevideo Road north to MD 100 2.0 miles	Widen from 4 to 6 lanes; construct typical section as defined in State/ County MOU for U.S. 1 revitalization	\$98,000,000	Mobility, Prosperity, Safety
42	Howard County	U.S. 29	Patuxent River Bridge to Seneca Drive 5.0 miles	Widen from 4 to 6 lanes; includes auxiliary lanes and grade-separated access to community of Rivers Edge	\$91,000,000	Mobility, Safety
				Anticipated Roadway Investments, 2030-2040	\$5,487,000000	

Small Program Set-Asides – 2020-2040

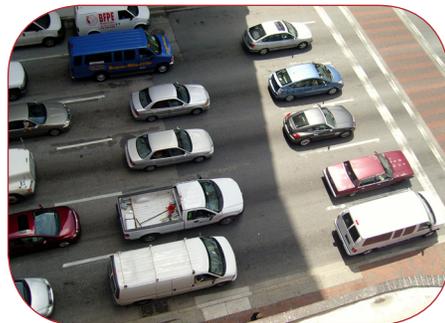
The BRTB has set aside funds to support various strategies that either increase transportation system efficiency or employ transportation demand management strategies to reduce travel demand of single-occupancy vehicles. Transportation system efficiency strategies rely primarily on managing existing transportation facilities, rather than building new capacity. Transportation Demand Management (TDM) refers to various strategies that change travel behavior (how, when, and where people travel) to increase transportation system efficiency. Together, these types of strategies contribute to cleaner air and a safer transportation system.

Although most individual strategies only affect a small portion of total travel, the cumulative impacts of a wide range of strategies can be significant. There are many different strategies with a variety of impacts. Objectives that can be addressed through this funding include: managing congestion, promoting livability, reducing emissions, providing “Ladders of Opportunity” and other equity-related objectives, and improving safety.

The BRTB has divided the set-aside funding into four categories based on the focus of the strategies:

- Transportation System Management and Operations (TSMO): \$80 million
- Ladders of Opportunity¹: \$100 million
- Complete Streets / Bicycle-Pedestrian: \$155 million
- Transportation Emission Reduction Measures (TERMs): \$285 million
- **Total estimated costs for set-asides: \$620 million**

The following sections describe some programs and strategies the region can consider implementing during the life of the plan to address issues of regional concern.



¹ Potential investments that could help the region implement some of the recommendations from The Opportunity Collaborative’s *Regional Plan for Sustainable Development*.

Chapter 4: Major Projects and Programs

Transportation System Management and Operations Strategies / Programs

The region has allocated \$80 million to support transportation system management and operations (TSMO) projects. The term TSMO is defined as, “An integrated program to optimize the performance of existing infrastructure through the implementation of systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of the transportation system.” Simply put, this means using technology and enhanced agency coordination to operate the existing transportation system as safely, reliably, and efficiently as possible. Typically, TSMO projects cost less than projects that add capacity, such as construction of a new lane, and they take significantly less time to implement.

A successful means of preserving capacity and improving security, safety, and reliability of the transportation system is through the use of traffic management centers such as Maryland’s CHART program or any number of local traffic management centers. Primary functions of such centers include: traffic and roadway monitoring, incident management, traveler information, traffic management, systems integration and communications, and emergency and weather operations.

Taken from the Maryland CHART Strategic Deployment Plan, the activities shown below could apply to either the state or to local jurisdictions.

TSMO Activities
• Visually monitor highway conditions
• Collect automated traffic data
• Monitor traffic and roadway conditions with greater accuracy, more data, and reduced infrastructure requirements
• Monitor travel conditions during inclement weather
• Provide resources to operational personnel and expand coordination with public safety agencies to enhance management of incidents and emergencies
• Improve CHART’s coordination and communications during the management of incidents and emergencies
• Enhance severe weather and emergency management operations
• Provide more travel condition information through various media sources to traveling public
• Provide more information on travel conditions via deployed highway field infrastructure to traveling public
• Enhance coordination between CHART and Traffic Signal Operations to optimize signal systems timing in response to conditions
• Optimize flow of traffic on access controlled highways
• Improve efficiency of operations at inter-modal transfer points and parking facilities
• Enhance ability to manage traffic and increase safety near and within work zones and event locations
• Enhance and expand transportation security measures to better protect systems and infrastructure against attacks and unauthorized usage
• Increase motorist roadway safety, and deploy systems to enhance safety at highway rail crossings
• Develop additional capabilities within the CHART Operating System Software
• Build infrastructure necessary to expand the CHART Network and facilitate regional connectivity between operational facilities and to field devices

Ladders of Opportunity Strategies / Programs

Chapter 1 of this document gives an overview of the work of the Opportunity Collaborative. The Opportunity Collaborative released its comprehensive *Regional Plan for Sustainable Development* (RPSD) in June 2015. The RPSD links the region's housing, transportation, and workforce development plans and investments.

The BRTB has set aside \$100 million to address the job access recommendations from the *Regional Plan for Sustainable Development*. The following recommendations are from the *Regional Plan for Sustainable Development* and also support the Federal Transit Administration program of the same name:

RPSD Goal: Improve Transportation Access to Career, Training, and Education Opportunities

"25 percent of the region's job seekers cite poor transportation choices as a significant barrier to employment in the region. Likewise, inadequate transportation limits housing options for transit-dependent workers. To tackle this issue, The Opportunity Collaborative recommends the following transportation strategies, particularly in areas that lack good access to mid-skilled, family-supporting jobs.

STRATEGY 1: IMPROVE TRANSIT SERVICE TO CONNECT WORKERS WITH JOBS AND TRAINING OPPORTUNITIES IN SUBURBAN JOB CENTERS. The region's transit network of local and commuter bus lines, light rail, commuter rail, and subways effectively connect suburban bedroom communities and Baltimore City neighborhoods to the downtown job center. But this system does not adequately serve emerging job centers in outlying areas. To improve worker commutes and maximize the impact of the region's transit system, the Baltimore region should:

- **Enhance public transit services that connect low-income neighborhoods and areas of residential growth with job centers.** In the long term, the region should plan for and fund a range of transit options that meet the needs of transit-dependent workers. Particular attention should be paid to connecting low-income areas with the region's growing job centers.
- **Leverage transportation infrastructure, such as rapid transit services, to revitalize housing, employment, and retail in weak-market areas.** To fully capitalize on the value of transportation infrastructure investments and create greater access for transit-dependent households, communities should work to create housing, employment, and retail outlets adjacent to transit stops. High-quality transportation can boost property values, making private investment more viable.

STRATEGY 2: INCREASE TRANSPORTATION OPTIONS TO JOBS AND EDUCATION FOR HOUSEHOLDS. Even with improved transit service, many people throughout the region will have difficulty reaching good jobs that are outside the core service network. New approaches are needed to give lower-income workers more options for commuting, including the following:

- **Promote vanpooling, shuttle, and ridesharing programs to and from training centers and jobs.** Local governments, employers and other entities should expand ridesharing and vanpooling programs through a coordinated effort. Local jurisdictions can promote the use of the State Highway Administration's park-and-ride lots, which are often near interstates and job centers. Employers can provide these programs and encourage public transportation use through employee benefits, either with or without an employer subsidy. Regional government organizations are well situated to coordinate rideshare programs, and nonprofit social service and faith-based organizations are eligible to receive federal grant funding to operate demand-response transit services in urban and rural areas."

Chapter 4: Major Projects and Programs

Complete Streets and Bicycle-Pedestrian Strategies / Programs

The BRTB has set aside \$155 million to address Complete Streets and bicycle-pedestrian strategies.

The increased awareness of the needs of all transportation system users is the basis of the “Complete Streets” approach. This approach has done much to address the needs of all users of the surface transportation system. The Complete Streets approach emphasizes planning and design of roadways and adjoining facilities for the safety, accessibility, and mobility of all potential system users: pedestrians, bicyclists, transit riders, and motorists. This includes considering the needs of older people, children, and people with disabilities.

The Complete Streets concept focuses not only on individual roadways but also on changing the decision making and design processes to consider the needs of all users during the planning, design, construction, and operation of all roadways. If done in advance as an integrated best practice and not as an afterthought, a Complete Streets approach can reduce the need for retrofitting and making safety and accessibility improvements after projects are built.

The following list presents some potential investments that follow a Complete Streets approach.

Potential Complete Streets Investments

- Improve sidewalks, crosswalks, paths, and bike lanes.
- Correct specific roadway hazards to non-motorized transport (sometimes called “spot improvement” programs).
- Reduce conflicts between users and maintain cleanliness.
- Accommodate people with disabilities and other special needs.
- Develop pedestrian oriented land use and building design.
- Increase road and path connectivity, with special non-motorized shortcuts, such as paths between cul-de-sac heads and mid-block pedestrian links.
- Provide street furniture (e.g., benches) and design features (e.g., human-scale street lights).
- Implement traffic calming, traffic speed reductions, road space reallocation.
- Integrate biking and walking facilities with transit.
- Provide bicycle parking.
- Consider public bike systems (PBS), which are automated bicycle rental systems designed to provide efficient mobility for short, utilitarian urban trips.



Transportation Emissions Reduction Measures

The region has allocated \$285 million to support transportation emission reduction measures (TERMs), for air quality purposes. The Baltimore region is an EPA-designated nonattainment area for the ground-level ozone standard. As the metropolitan planning organization for the Baltimore region, the BRTB is required to ensure that transportation planning takes into account air quality through the transportation conformity process (described in Chapter 1.)

There are a variety of TERMS that can help mitigate the effects of pollution from automobiles, trucks, and other mobile sources on air quality. The following list of TERMS includes promising measures that, when implemented together, can reduce emissions of criteria pollutants and greenhouse gases in a meaningful way. This list is separated into three different categories: technologies, capital improvements, and behavioral strategies.

To avoid duplication, this list does not include TERMS that are identified in the lists showing Transportation System Management and Operations strategies, Ladders of Opportunity recommendations, or Complete Streets / bicycle-pedestrian strategies. It also does not include existing transit service or specific new major transit projects; new transit projects are covered in the tables shown in preceding pages.

Transportation Emissions Reduction Strategies		
Technologies	Capital Improvements	Behavioral Strategies
<p>Short Term:</p> <ul style="list-style-type: none"> • Fleet bus replacement • Truck replacement incentives • Incentives/technologies to improve truck fleet efficiency and reduce idling • Retrofit highway construction and maintenance equipment • Energy-efficient highway construction and maintenance practices • Electric vehicle charging infrastructure; promotion of electric vehicles 	<p>Short-Term</p> <ul style="list-style-type: none"> • Park-and-ride lots • Virtual truck weigh stations <p>Long Term:</p> <ul style="list-style-type: none"> • Transit-oriented development; mixed-use land use practices 	<p>Short-Term</p> <ul style="list-style-type: none"> • Promotion of eco-driving, clean commuting, reduced idling, and teleworking • Incentives: Commuter Choice tax benefit program; episodic free transit programs; Guaranteed Ride Home • Rideshare coordination



Chapter 4: Major Projects and Programs

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 privately funded, they are not included in the listing of projects to be supported with federal funds.

Maximize2040, however, must include these projects because of their effects on air quality conformity and travel demand. The table below shows the MDTA projects anticipated to be implemented by 2040. 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 system-wide travel demand effects. Appendix G shows the results of these analyses.

MDTA Projects, FY 2020-2040					
Year	Jurisdiction	Project Name	Limits	Description	Primary Goal(s) Addressed
2025	Baltimore County	I-95: Section 100	Interchanges at I-695 and MD 43	Construct ramps	Mobility
2030	Baltimore City and Baltimore County	I-95: Section 00	Fort McHenry Tunnel to express toll lanes	Reconfigure (restripe) northbound and southbound I-95 to provide four continuous mainline lanes in each direction	Mobility
2040	Baltimore and Harford counties	I-95: Section 200	North of MD 43 to north of MD 22	Construct express toll lanes, including MD 152, MD 24, MD 543, and MD 22 interchanges	Mobility



Committed Funding – FY 2016-2019

As noted, *Maximize2040* covers the time period from FY 2020 through 2040. As part of a complete picture of planned future transportation investments, the table below shows the major committed projects that either are in progress or in the current adopted TIP, which covers the FY 2016-2019 period.

The TIP is updated annually and is driven by the goals, strategies, and projects in the adopted long-range transportation plan, which is updated every four years. The current TIP update occurred in tandem with the development of *Maximize2040* and was therefore able to integrate many of the principles and requirements embedded in *Maximize2040*. Staff conducts the conformity analysis for all projects in the TIP and plan by examining the forecasted emissions from predicted travel demand. The TIP and plan both are financially constrained documents.

“Committed” means that a schedule is in place and either (1) sponsors currently are spending funds on these projects (for design, right-of-way acquisition, or construction), or (2) sponsors have identified fund sources and have committed funds to design or build these projects within this time frame.

Existing and Committed Projects, FY 2016-2019

Year	Jurisdiction	Sponsor	Project Name	Limits	Description
2016	Baltimore City	Baltimore City	Boston Street widening / Eaton Street extension	Conkling Street to Haven Street: widening; O'Donnell Street to Boston Street: extension	Widen from 2 to 4 lanes / new 4 lane road
2017	Anne Arundel County	SHA	MD 175, Annapolis Road widening	Disney Road to Reece Road	Widen from 4 to 6 lanes
2017	Baltimore City	Baltimore City	Central Ave (Harbor Point) bridge	Lancaster Street to Harbor Point	New bridge; extend Central Avenue into Harbor Point development
2017	Baltimore County	SHA	MD 140, Reisterstown Road widening	Painters Mill Road to Garrison View Road	Widen from 4 to 6 lanes
2017	Harford County	SHA	MD 22, Aberdeen Throughway widening	Beards Hill Road to MD 462, Paradise Road	Widen from 4 to 6 lanes
2017	Harford County	Harford County	Tollgate Road extension	Plumtree Road to Belair South Parkway	New 2 lane road
2017	Howard County	Howard County	Skylark Boulevard extension	MD 216 to existing Skylark Boulevard with new interchange at MD 216	New 4-lane road
2018	Baltimore County	Baltimore County	Mohrs Lane bridge	bridge over CSX	Rebuild bridge closed in 2011 (accommodates future Campbell Boulevard)
2018	Baltimore County	Baltimore County	Rolling Road widening	Windsor Mill Road to MD 26	Widen from 2 to 4 lanes

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Existing and Committed Projects, FY 2016-2019

Year	Jurisdiction	Sponsor	Project Name	Limits	Description
2018	Baltimore County	Baltimore County	Security Boulevard extension	extension to Fairbrook Road	New 2-lane road
2018	Baltimore County	SHA	I-695, Beltway interchange	US 1 / Leeds Avenue	Replace ramp from Leeds Avenue to I-695 with ramp from US 1 to I-695
2018	Baltimore County	SHA	I-695 outer loop widening	US 40 to MD 144	Widen from 3 to 4 lanes
2018	Baltimore County	SHA	I-695, Beltway widening	MD 41 to MD 147	Add one auxiliary lane in each direction
2019	Harford County	SHA	US 40 / Aberdeen Proving Ground Intersection Improvements	Loflin Road to MD 715	Widen from 4 to 6/8 lanes and improve MD 7 and MD 159 intersections
2019	Howard County	SHA / Howard County	MD 175 interchange	Blandair Park access road	New interchange at new road into Blandair Park



Illustrative Projects

Federal regulations for metropolitan transportation planning identify the concept of “illustrative projects” as an element of the planning process. These are projects included in a metropolitan transportation plan for illustrative purposes, meaning that they 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.

The table below shows the list of illustrative projects for the Baltimore region:

Illustrative Projects – Transit Could be Amended into <i>Maximize2040</i> Should Future Funds Become Available			
Project Name	Limits	Description	Jurisdiction
MARC Service	DC to Delaware	Additional service in Harford County, including reverse commute, late night, and weekend.	Harford County / Regional
Bus Rapid Transit	Dorsey MARC Station to College Park MARC Station	Link commuters from Dorsey to Laurel and Laurel to College Park, and future Purple Line	Howard County / Regional

Illustrative Projects – Highway Could be Amended into <i>Maximize2040</i> Should Future Funds Become Available			
Project Name	Limits	Description	Jurisdiction
I-97	MD 32 to US 50/301	Add toll lanes	Anne Arundel County
MD 3	Prince George’s County line to MD 32	Roadway widening	Anne Arundel County
Patapsco Avenue	Gable Avenue to Annapolis Road	Road reconstruction with ADA and streetscape components	Baltimore City
MD 7	Campbell Boulevard to Mohrs Lane	Roadway, curb, sidewalk, bicycle, ADA, and pedestrian improvements as part of enhanced streetscap	Baltimore County
MD 140	At Hooks Lane	Left turn lane	Baltimore County
MD 26	MD 32 to MD 97	Widen from 2 to 4 lanes, add pedestrian and bicycle facilities	Carroll County
MD 30 Relocated	Brodbeck Road to MD 86	New 2-lane roadway	Carroll County
MD 140 Relocated	Trevanion Road to MD 140	New 2-lane roadway; add pedestrian and bicycle facilities	Carroll County

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Illustrative Projects – Highway Could be Amended into *Maximize2040* Should Future Funds Become Available

Project Name	Limits	Description	Jurisdiction
MD 543	Wheel Road to I-95	Widen from 2 to 4 lanes with bicycle and pedestrian access	Harford County
U.S. 40	MD 543 to Loflin Road	Widen from 4 to 6 lanes with bicycle and pedestrian access	Harford County
U.S. 29	MD 100 to I-70	Widen from 6 to 10 lanes	Howard County
U.S. 29 Pedestrian Bridge	over U.S. 29 (linking downtown Columbia and Oakland Mills)	Improve existing pedestrian bridge: enhance safety features; add transit service	Howard County

“Mega-Regional” Projects

The projects listed below are outside the scope of this regional transportation plan. Currently, these projects are under study, but as of yet they have not progressed to the point where their sponsors have identified funds reasonably anticipated to be available during the 2020-2040 period. Partly for this fiscal constraint reason, the preferred alternative does not include these projects.

Even if these projects were to be funded some time in the future, at least some of the funding would need to come from the Federal Railroad Administration (FRA). The regional long-range transportation plan over which the BRTB has jurisdiction does not cover FRA-funded projects.

Nonetheless, it is good policy for the region to be aware of these projects and to be prepared to determine their potential effects on regional travel demand and regional travel patterns should they progress beyond the study phase.

- B&P Tunnel
- Amtrak / Freight Rail Bridge over the Susquehanna River
- MagLev Train
- Northeast Corridor