Chapter 6:

Financial Plan

FINANCIAL PLAN

Each metropolitan transportation plan must include a financial plan. This financial plan demonstrates consistency between (1) revenues reasonably expected to be available and (2) the estimated costs of implementing proposed transportation system improvements. This consistency is referred to as "fiscal constraint."

Definitions – Roadway Funding

System operations (roadways)
Covers the salaries and wages of personnel who maintain and operate highway systems and vehicles.

System preservation (roadways)
Covers capital costs for routine asset management and maintenance activities. These activities include: repaving roadways; repairing bridges; clearing snow and ice; and maintaining roadside lighting, guardrails, and signs.

Definitions – Transit Funding

System operations (transit)
Covers routine maintenance, employee wages, spare parts, and consumables. Note that while routine maintenance is considered a function of system operations, maintenance activities may be paid for with federal capital funds.

System preservation (transit)
Covers planning, design, acquisition/construction, and major asset rehabilitation activities necessary to keep the existing transit system in a State of Good Repair.

Major Capital Projects

The remaining $12.162 billion will be available to fund major capital projects. Examples of such projects include major new or widened roads, major roadway and bridge rehabilitations, and major new or expanded transit service.

Revenues Reasonably Expected to Be Available

The FAST Act and its predecessors have required regional transportation plans to be fiscally constrained. That is, the total estimated costs of projects and programs cannot exceed forecasted revenue levels.

For *Maximize2045*, the BRTB, in consultation with the Maryland Department of Transportation, has forecasted the amount of revenues from federal, state, local, and private sources the region reasonably expects will be available for the 22-year period from 2024-2045.

Forecasted Revenues

Shown below are forecasted revenues (from federal, state, local, and private sources) for *Maximize2045*, broken down by investment category:

***Maximize2045* (covering 22 years: 2024-2045)**:

System operations:	$36.749 billion	56.4%
System preservation:	$16.270 billion	25.0%
Major capital projects:	$12.162 billion	18.7%
Total revenues:	**$65.181 billion**	

Here are revenue breakdowns from the two preceding plans, showing how the relative portions for these categories have shifted over time:

2015 plan (covering 21 years: 2020-2040):

System operations:	$29.954 billion	52.0%
System preservation:	$12.102 billion	21.0%
Major capital projects:	$15.590 billion	27.0%
Total revenues:	**$57.646 billion**	

2011 plan (covering 20 years: 2016-2035):

System operations:	$24.048 billion	53.1%
System preservation:	$ 9.392 billion	20.8%
Major capital projects:	$11.819 billion	26.1%
Total revenues:	**$45.260 billion**	

Forecasted Revenues by Year: 2024-2045

The table below shows forecasted revenues by year for system operations, system preservation, and major capital projects in the region. Consistent with MDOT assumptions, the BRTB has assumed that 40.3% of statewide revenues (federal + state + private funds) will be available for the Baltimore region for the 2024-2045 period.

Maximize2045: Regional Revenue Forecasts – System Operations, System Preservation, and Major Capital Projects

MDOT Statewide Revenue Projections

	Operations	Preservation
2024	$2,592,000,000	$1,259,000,000
2025	$2,696,000,000	$1,332,000,000
2026	$2,811,000,000	$1,408,000,000
2027	$2,924,000,000	$1,490,000,000
2028	$3,043,000,000	$1,575,000,000
2029	$3,176,000,000	$1,661,000,000
2030	$3,313,000,000	$1,698,000,000
2031	$3,451,000,000	$1,732,000,000
2032	$3,597,000,000	$1,766,000,000
2033	$3,754,000,000	$1,802,000,000
2034	$3,911,000,000	$1,838,000,000
2035	$4,079,000,000	$1,874,000,000
2036	$4,257,000,000	$1,912,000,000
2037	$4,433,000,000	$1,950,000,000
2038	$4,633,000,000	$1,989,000,000
2039	$4,837,000,000	$2,029,000,000
2040	$5,042,000,000	$2,070,000,000
2041	$5,258,000,000	$2,111,000,000
2042	$5,475,000,000	$2,153,000,000
2043	$5,717,000,000	$2,196,000,000
2044	$5,963,000,000	$2,240,000,000
2045	$6,228,000,000	$2,285,000,000
	$91,190,000,000	**$40,370,000,000**

Baltimore Region Revenue Projections (40.3% of Statewide Totals for Operations and Preservation)

	Operations	Preservation	Major Capital	Cumulative Major Capital	Totals
2024	$1,045,000,000	$507,000,000	$197,000,000	$197,000,000	$1,749,000,000
2025	$1,086,000,000	$537,000,000	$208,000,000	$405,000,000	$1,831,000,000
2026	$1,133,000,000	$567,000,000	$219,000,000	$624,000,000	$1,919,000,000
2027	$1,178,000,000	$600,000,000	$232,000,000	$856,000,000	$2,010,000,000
2028	$1,226,000,000	$635,000,000	$245,000,000	$1,101,000,000	$2,106,000,000
2029	$1,280,000,000	$669,000,000	$258,000,000	$1,359,000,000	$2,207,000,000
2030	$1,335,000,000	$684,000,000	$290,000,000	$1,649,000,000	$2,309,000,000
2031	$1,391,000,000	$698,000,000	$328,000,000	$1,977,000,000	$2,417,000,000
2032	$1,450,000,000	$712,000,000	$368,000,000	$2,345,000,000	$2,530,000,000
2033	$1,513,000,000	$726,000,000	$409,000,000	$2,754,000,000	$2,648,000,000
2034	$1,576,000,000	$741,000,000	$455,000,000	$3,209,000,000	$2,772,000,000
2035	$1,644,000,000	$755,000,000	$503,000,000	$3,712,000,000	$2,902,000,000
2036	$1,716,000,000	$771,000,000	$553,000,000	$4,265,000,000	$3,040,000,000
2037	$1,786,000,000	$786,000,000	$609,000,000	$4,874,000,000	$3,181,000,000
2038	$1,867,000,000	$802,000,000	$665,000,000	$5,539,000,000	$3,334,000,000
2039	$1,949,000,000	$818,000,000	$725,000,000	$6,264,000,000	$3,492,000,000
2040	$2,032,000,000	$834,000,000	$791,000,000	$7,055,000,000	$3,657,000,000
2041	$2,119,000,000	$851,000,000	$861,000,000	$7,916,000,000	$3,831,000,000
2042	$2,206,000,000	$868,000,000	$939,000,000	$8,855,000,000	$4,013,000,000
2043	$2,304,000,000	$885,000,000	$1,017,000,000	$9,872,000,000	$4,206,000,000
2044	$2,403,000,000	$903,000,000	$1,101,000,000	$10,973,000,000	$4,407,000,000
2045	$2,510,000,000	$921,000,000	$1,189,000,000	$12,162,000,000	$4,620,000,000
Revenues (Fed+State)	**$36,749,000,000**	**$16,270,000,000**	**$12,162,000,000**		**$65,181,000,000**
Revenues (Local)			$0		**$0**
Total Revenues	**$36,749,000,000**	**$16,270,000,000**	**$12,162,000,000**		**$65,181,000,000**
Total Costs	**$36,749,000,000**	**$16,270,000,000**	**$12,057,000,000**		**$65,181,000,000**
Potential Set-Aside Amount			**$105,000,000**		
% of Total Costs	**56.4%**	**25.0%**	**18.5%**		

Forecasted Federal Revenues by Funding Program: 2024-2045

During the most recent federal certification review, conducted in 2016 by a team of FHWA and FTA staff members, the review team recommended that the next long-range regional transportation plan include a breakdown of forecasted federal revenues by funding program. BMC staff has applied the percentages accounted for by the major federal funding programs in the FY 2019 federal apportionment to MDOT as a means to estimate how these federal revenues might break down in the period from 2024-2045. The following table shows that breakdown. There is no guarantee that these funding programs will be available in their present forms throughout the next 25 years. There also is no gurarantee that these same percentages will apply in the future, or that MDOT will continue to provide the same level of state funding for projects. However, this approach seems to be the best way to address the recommendation from the 2016 certification process review team and to provide a possible scenario for how federal funding might be apportioned in the region in the future.

Maximize2045 Regional Revenue Forecasts – by Federal Funding Program

	FHWA				FTA			Totals		Total Revenues
	NHP	STBG	HSIP	CMAQ	S5307	S5337	S5339	Highways	Transit	
2024	$307,000,000	$155,000,000	$32,000,000	$50,000,000	$230,000,000	$96,000,000	$14,000,000	$544,000,000	$340,000,000	$1,749,000,000
2025	$322,000,000	$162,000,000	$33,000,000	$52,000,000	$241,000,000	$100,000,000	$14,000,000	$569,000,000	$355,000,000	$1,831,000,000
2026	$337,000,000	$170,000,000	$35,000,000	$55,000,000	$252,000,000	$105,000,000	$15,000,000	$597,000,000	$372,000,000	$1,919,000,000
2027	$353,000,000	$178,000,000	$36,000,000	$57,000,000	$264,000,000	$110,000,000	$16,000,000	$624,000,000	$390,000,000	$2,010,000,000
2028	$370,000,000	$186,000,000	$38,000,000	$60,000,000	$277,000,000	$115,000,000	$17,000,000	$654,000,000	$409,000,000	$2,106,000,000
2029	$388,000,000	$195,000,000	$40,000,000	$63,000,000	$290,000,000	$121,000,000	$17,000,000	$686,000,000	$428,000,000	$2,207,000,000
2030	$406,000,000	$204,000,000	$42,000,000	$66,000,000	$304,000,000	$127,000,000	$18,000,000	$718,000,000	$449,000,000	$2,309,000,000
2031	$425,000,000	$214,000,000	$44,000,000	$69,000,000	$318,000,000	$132,000,000	$19,000,000	$752,000,000	$469,000,000	$2,417,000,000
2032	$445,000,000	$224,000,000	$46,000,000	$72,000,000	$333,000,000	$139,000,000	$20,000,000	$787,000,000	$492,000,000	$2,530,000,000
2033	$465,000,000	$234,000,000	$48,000,000	$75,000,000	$348,000,000	$145,000,000	$21,000,000	$822,000,000	$514,000,000	$2,648,000,000
2034	$487,000,000	$245,000,000	$50,000,000	$79,000,000	$364,000,000	$152,000,000	$22,000,000	$861,000,000	$538,000,000	$2,772,000,000
2035	$510,000,000	$257,000,000	$52,000,000	$83,000,000	$382,000,000	$159,000,000	$23,000,000	$902,000,000	$564,000,000	$2,902,000,000
2036	$534,000,000	$269,000,000	$55,000,000	$87,000,000	$400,000,000	$167,000,000	$24,000,000	$945,000,000	$591,000,000	$3,040,000,000
2037	$559,000,000	$281,000,000	$57,000,000	$91,000,000	$418,000,000	$174,000,000	$25,000,000	$988,000,000	$617,000,000	$3,181,000,000
2038	$586,000,000	$295,000,000	$60,000,000	$95,000,000	$438,000,000	$183,000,000	$26,000,000	$1,036,000,000	$647,000,000	$3,334,000,000
2039	$614,000,000	$309,000,000	$63,000,000	$99,000,000	$459,000,000	$191,000,000	$28,000,000	$1,085,000,000	$678,000,000	$3,492,000,000
2040	$643,000,000	$323,000,000	$66,000,000	$104,000,000	$481,000,000	$200,000,000	$29,000,000	$1,136,000,000	$710,000,000	$3,657,000,000
2041	$673,000,000	$339,000,000	$69,000,000	$109,000,000	$504,000,000	$210,000,000	$30,000,000	$1,190,000,000	$744,000,000	$3,831,000,000
2042	$705,000,000	$355,000,000	$72,000,000	$114,000,000	$528,000,000	$220,000,000	$32,000,000	$1,246,000,000	$780,000,000	$4,013,000,000
2043	$739,000,000	$372,000,000	$76,000,000	$120,000,000	$553,000,000	$230,000,000	$33,000,000	$1,307,000,000	$816,000,000	$4,206,000,000
2044	$774,000,000	$390,000,000	$79,000,000	$126,000,000	$579,000,000	$241,000,000	$35,000,000	$1,369,000,000	$855,000,000	$4,407,000,000
2045	$812,000,000	$408,000,000	$83,000,000	$132,000,000	$607,000,000	$253,000,000	$37,000,000	$1,435,000,000	$897,000,000	$4,620,000,000
	$11,454,000,000	**$5,765,000,000**	**$1,176,000,000**	**$1,858,000,000**	**$8,570,000,000**	**$3,570,000,000**	**$515,000,000**	**$20,253,000,000**	**$12,655,000,000**	**$65,181,000,000**

FY 2024-2045 Total Estimated Federal Revenues	**$32,908,000,000**

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.

Fiscal Constraint: Forecasted Revenues vs. Major Capital Project Costs

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:	$3,196,000,000
	$13,000,000

Forecasted Revenues, 2035-2045:	$8,953,000,000
Estimated YOE Costs, 2035-2045:	$8,861,000,000
	$92,000,000

The main resource used to determine the funding anticipated to be available for implementing the projects in *Maximize2045* is the document titled *Financially Constrained Long Range Plan, Year 2017 to 2045 Update for the Baltimore Metropolitan Area*, prepared by the Maryland Department of Transportation. This document is included on the following pages.

Material on the cost estimating methodologies that MDOT SHA and MDT MTA used to develop roadway and transit projects appears following the MDOT Financially Constrained Long Range Plan document.

Financially Constrained Long Range Plan

Year 2017 to 2045 Update

For The

Baltimore Metropolitan Area

Prepared by

Maryland Department of Transportation

August 2017

DOCUMENTATION OF ASSUMPTIONS

Date: August 2017

Subject: Methodology and Assumptions used to derive the 2017 – 2045 Constrained Long-range Transportation Plan

Total Program Revenues/Expenditures (operating and capital):

- FY 1981 to FY 2016 figures are actual expenditures from historical records. FY 2017 to FY 2022 are from the FY 2017 Transportation Trust Fund Financial Plan and Consolidated Transportation Plan (CTP).
- The federal funds received directly by WMATA are **not** included in this exercise.
- FY 2023 to FY 2045 projections of state funds use a historical annual average growth rate of 5.3%. Federal fund projections for the same period are based on an average growth rate of 3.0% for Highway and Transit program funds.

Operating Expenditures:

- FY 1981 to FY 2016 figures are actual expenditures from historical records. Expenditures for FY 2017 to FY 2022 are the operating budget projections contained in the current Trust Fund Forecast.
- FY 2023 to FY 2045 projections are derived by inflating the previous year with an estimate for the percentage change in CPI-U plus 2%. The Consumer Price Index is a generally accepted measure of inflation. The projected annual change in index figures is based on information received from two economic forecasting firms. Two percent (2%) is added to the forecasted rate to account for the additional operating costs associated with new capital expansions.

Capital - Systems Preservation:

- Department records were used to determine the split between systems preservation and expansion for FY 1981 to FY 2016. Amounts for FY 2017 to FY 2022 represent the current version of the capital program.
- For the period FY 2023 – FY 2045, an annual growth rate of 2.0% is assumed for systems preservation projects, not to exceed 70% of the total program.

Capital - Expansion:

- Expenditures for capital expansion were derived by subtracting both operating and systems preservation expenditures from the total program expenditures for each year.

Baltimore Area – Percentage of Capital Expansion:

- Total capital figures from FY 1981 to present were split into surface and non-surface. Surface included highway (SHA) and transit (MTA, MARC, and WMATA) costs. Non-surface included the Maryland Port, Aviation, and Motor Vehicle Administrations and the Secretary's Office expenses.

- The surface / non-surface data and the system preservation / expansion data were combined, analyzed, and evaluated to produce estimates of the percentage of Maryland expansion associated with surface transportation for the various time periods.

- Surface capital in the Baltimore Region was derived by adding the expenditures for all of MTA (excluding LOTS and non-Baltimore region Park and Ride expenditures), one-half of MARC and that portion of SHA that pertained to the region (Anne Arundel, Baltimore, Carroll, Harford, and Howard counties).

- These Baltimore specific figures were used to derive estimates of Baltimore surface expansion. These figures, when used with the above-mentioned projections, produce the estimates shown for Baltimore as a percent of Total Surface Expansion and as a percent of Total Maryland Expansion.

MDOT Operating & Capital Expenditures - Statewide

History, Program & Forecast

(Millions of Dollars)

Fiscal Year	Operating	Systems Preservation	Operating & Systems Pres.	Expansion	Statewide Total
1981	265	111	376	247	623
1982	287	136	423	236	659
1983	322	164	486	284	770
1984	352	167	519	246	765
1985	385	204	589	319	908
1986	428	234	662	403	1,065
1987	441	264	705	506	1,211
1988	478	260	738	615	1,353
1989	508	227	735	677	1,412
1990	551	270	821	760	1,581
1991	591	268	859	773	1,632
1992	577	187	764	542	1,306
1993	638	254	892	418	1,310
1994	689	279	968	393	1,361
1995	709	400	1,109	497	1,606
1996	784	391	1,175	465	1,640
1997	770	417	1,187	493	1,680
1998	808	451	1,259	411	1,670
1999	868	515	1,383	420	1,803
2000	913	476	1,389	455	1,844
2001	979	578	1,557	632	2,189
2002	1,045	612	1,657	772	2,429
2003	1,158	620	1,778	772	2,550
2004	1,178	619	1,797	762	2,559
2005	1,237	714	1,951	780	2,731
2006	1,303	729	2,032	793	2,825
2007	1,396	724	2,120	701	2,821
2008	1,488	766	2,254	680	2,934
2009	1,527	974	2,501	368	2,869
2010	1,583	957	2,540	275	2,815
2011	1,548	908	2,456	325	2,781
2012	1,572	1,096	2,668	366	3,034
2013	1,638	1,154	2,792	416	3,208
2014	1,843	1,324	3,167	477	3,644
2015	1,859	1,438	3,297	603	3,900
2016	1,917	1,389	3,306	806	4,112
2017	1,947	1,560	3,507	1,123	4,630
2018	2,030	1,580	3,610	1,071	4,681
2019	2,080	1,557	3,637	1,005	4,642
2020	2,131	1,475	3,606	687	4,293
2021	2,181	1,391	3,572	483	4,055
2022	2,264	1,449	3,713	400	4,113
2023	2,454	1,284	3,738	550	4,288
2024	2,592	1,259	3,851	540	4,391
2025	2,696	1,332	4,028	571	4,599
2026	2,811	1,408	4,219	603	4,822
2027	2,924	1,490	4,414	639	5,053
2028	3,043	1,576	4,619	676	5,295
2029	3,176	1,661	4,837	712	5,549
2030	3,313	1,698	5,011	805	5,816
2031	3,451	1,732	5,183	914	6,097
2032	3,597	1,766	5,363	1,030	6,393
2033	3,754	1,802	5,556	1,146	6,702
2034	3,911	1,838	5,749	1,279	7,028
2035	4,079	1,874	5,953	1,416	7,369
2036	4,257	1,912	6,169	1,559	7,728
2037	4,433	1,950	6,383	1,721	8,104
2038	4,633	1,989	6,622	1,879	8,501
2039	4,837	2,029	6,866	2,052	8,918
2040	5,042	2,070	7,112	2,242	9,354
2041	5,268	2,111	7,369	2,444	9,813
2042	5,475	2,153	7,628	2,667	10,295
2043	5,717	2,196	7,913	2,889	10,802
2044	5,963	2,240	8,203	3,131	11,334
2045	6,228	2,285	8,513	3,383	11,896

MDOT - Office of Finance
18-Aug-17

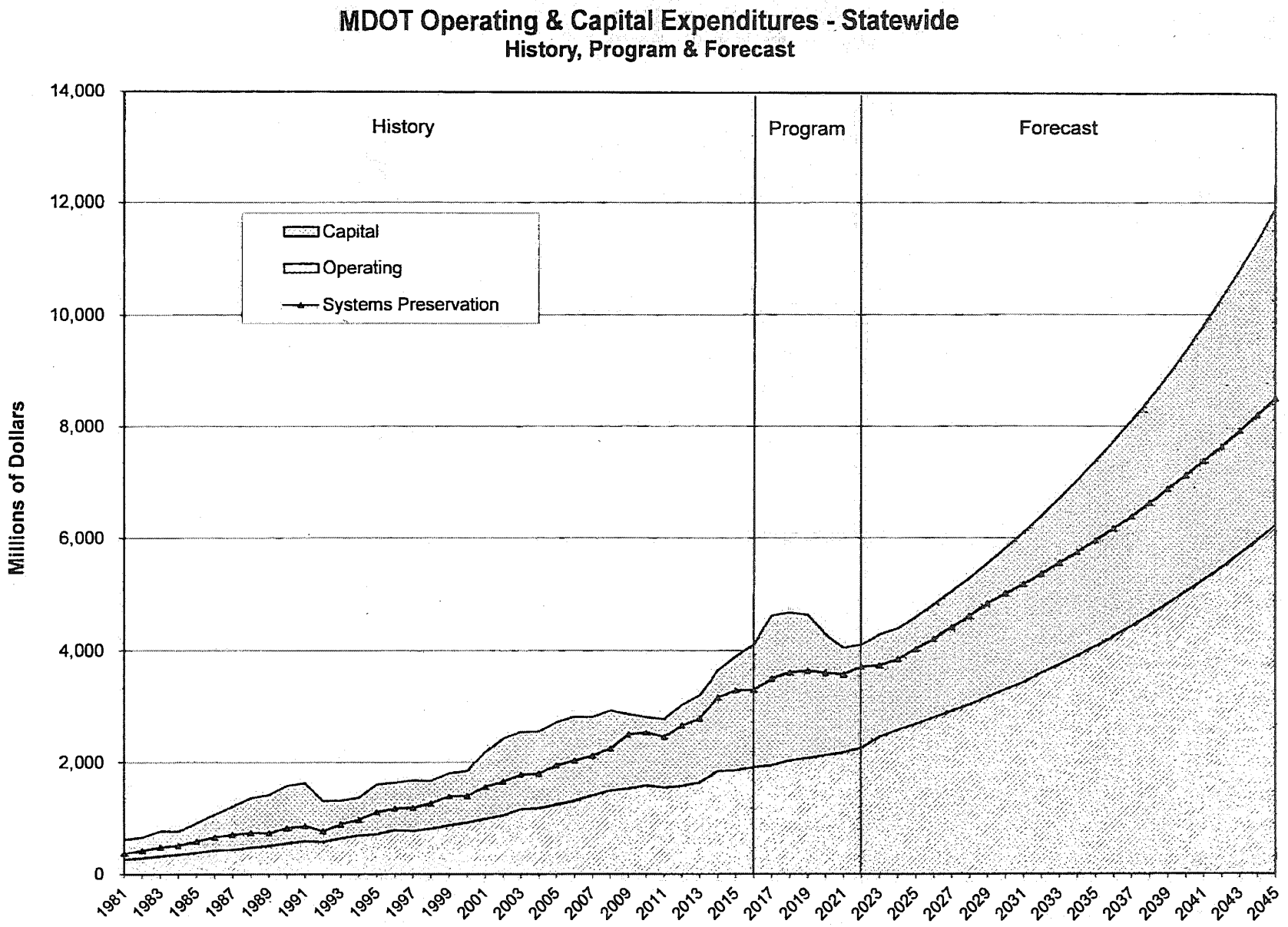
BALTIMORE METROPOLITAN AREA
Percentage of Capital Expansion

Surface Enhancement % of Maryland Enhancement:	
1981 - 2016	86.4%

Baltimore Enhancement % of Surface Enhancement:	
1981 - 2016	40.3%

Fiscal Year	Statewide Expansion Funds	Surface Percentage	Private Funds	Total Surface Available	Baltimore Percentage	Total Balto. Expansion Funds
2014	477					155
2015	603					192
2016	806					282
2017	1,123					90
2018	1,071					90
2019	1,005					107
2020	687					80
2021	483					83
2022	400					69
2023	550	475	23	498	201	201
2024	540	467	23	490	197	197
2025	571	493	23	516	208	208
2026	603	521	23	544	219	219
2027	639	552	23	575	232	232
2028	676	584	24	608	245	245
2029	712	615	24	639	258	258
2030	805	696	24	720	290	290
2031	914	790	24	814	328	328
2032	1,030	890	24	914	368	368
2033	1,146	990	25	1,015	409	409
2034	1,279	1,105	25	1,130	455	455
2035	1,416	1,224	25	1,249	503	503
2036	1,559	1,347	25	1,372	553	553
2037	1,721	1,487	25	1,512	609	609
2038	1,879	1,624	26	1,650	665	665
2039	2,052	1,773	26	1,799	725	725
2040	2,242	1,938	26	1,964	791	791
2041	2,444	2,112	26	2,138	861	861
2042	2,667	2,305	26	2,331	939	939
2043	2,889	2,497	27	2,524	1,017	1,017
2044	3,131	2,706	27	2,733	1,101	1,101
2045	3,383	2,924	27	2,951	1,189	1,189
Total '23-'45	34,848	30,116	571	30,687	12,363	12,363
Total '14-'45	41,503					13,511

MDOT - Office of Finance
18-Aug-17


MDOT Operating & Capital Expenditures - Statewide
History, Program & Forecast
History
Program
Forecast
Capital
Operating
Systems Preservation
Millions of Dollars
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
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Cost Estimating Methodologies

Estimating project costs for *Maximize2045* was a joint effort that included the assistance of staff from state agencies, local jurisdictions, transportation consultants, and BMC. MDOT SHA provided cost estimates for state highway facilities. Sponsoring jurisdictions supplied cost estimates for local facilities, with assistance from MDOT SHA. MDOT MTA developed capital cost estimates for the transit projects it would operate. Sponsoring jurisdictions developed cost estimates for non-MTA-operated facilities and services.

In practical terms, there are at least two rounds of cost development. The first estimate, expressed in year of expenditure dollars, is less intensive. This first-round estimate is developed for use in documents such as *Maximize2045*. The second, more detailed, estimate is developed as the project moves to project planning and is reviewed at least once a year to reflect updates to fields in the cost estimating program. When developing cost estimates, however, there are some basic principles and factors that can and should be identified early in the process to minimize errors throughout the design process. Some of these considerations are:

- Identify all potential impacts before a project gets initial funding and provide reasonable costs with contingencies to cover those impacts.
- Make sure that all specifications clearly define the scope of work.
- Use standard pay items from the category code book whenever possible.

Estimating Highway Project Costs

For projects not included in the CTP, MDOT SHA staff utilized the all-inclusive (cost categories 1-8) cost per mile (CPM) from the *2017 MDOT SHA Cost Estimating Manual*. The MDOT SHA staff have reviewed each project's characteristics and have utilized the following methodology and estimation assumptions:

- Cost of new lanes are estimated assuming the project can add new lanes without the need of reconstructing existing lanes. The cost of resurfacing, at a rate of $0.2 million / lane-mile, is included for all existing lanes.
- If no lanes are being added to an existing roadway, reconstruction of all existing lanes are still assumed. If only a segment of a roadway needs a lane addition, the engineer would review the project and determine the length of additional lane-mile needed.
- The lead engineer is provided flexibility to determined which CPM rate to apply for new lane-miles: low, median, or high. Given the existing project areas, the low CPM rate of $3.7 million / lane-mile was used for all estimations.
- All interchanges within the project limit were reviewed to determine if the proposed improvements would require interchange reconstruction. The guide provides two interchanges costs, dependent on the roadway classification of both roadways: $110 million / full interchange for freeway-to-freeway interchanges or $45 million / full interchange otherwise. The total interchange cost is determined by the cost per full interchange and the number of interchange quarters potentially impacted by the roadway improvement.
- The cost of Project Planning (PP) varies by project size as follows: for a construction cost under $50 million, PP is calculated at 6.0%; for a construction cost between $50 and $99.9 million, PP is calculated at 2.5%; and for a construction cost greater than $100 million, PP is calculated at 1.5%.
- The cost of Preliminary Engineering (PE) varies by project size as follows: for a construction cost under $50 million, PE is calculated at 15%; for a construction cost of $50 and $99.9 million, PE is calculated at 10%; and for a construction cost greater than $100 million, PE is calculated at 8.5%.
- A contingency rate of 40% of the construction cost is added to calculate the neat construction cost.

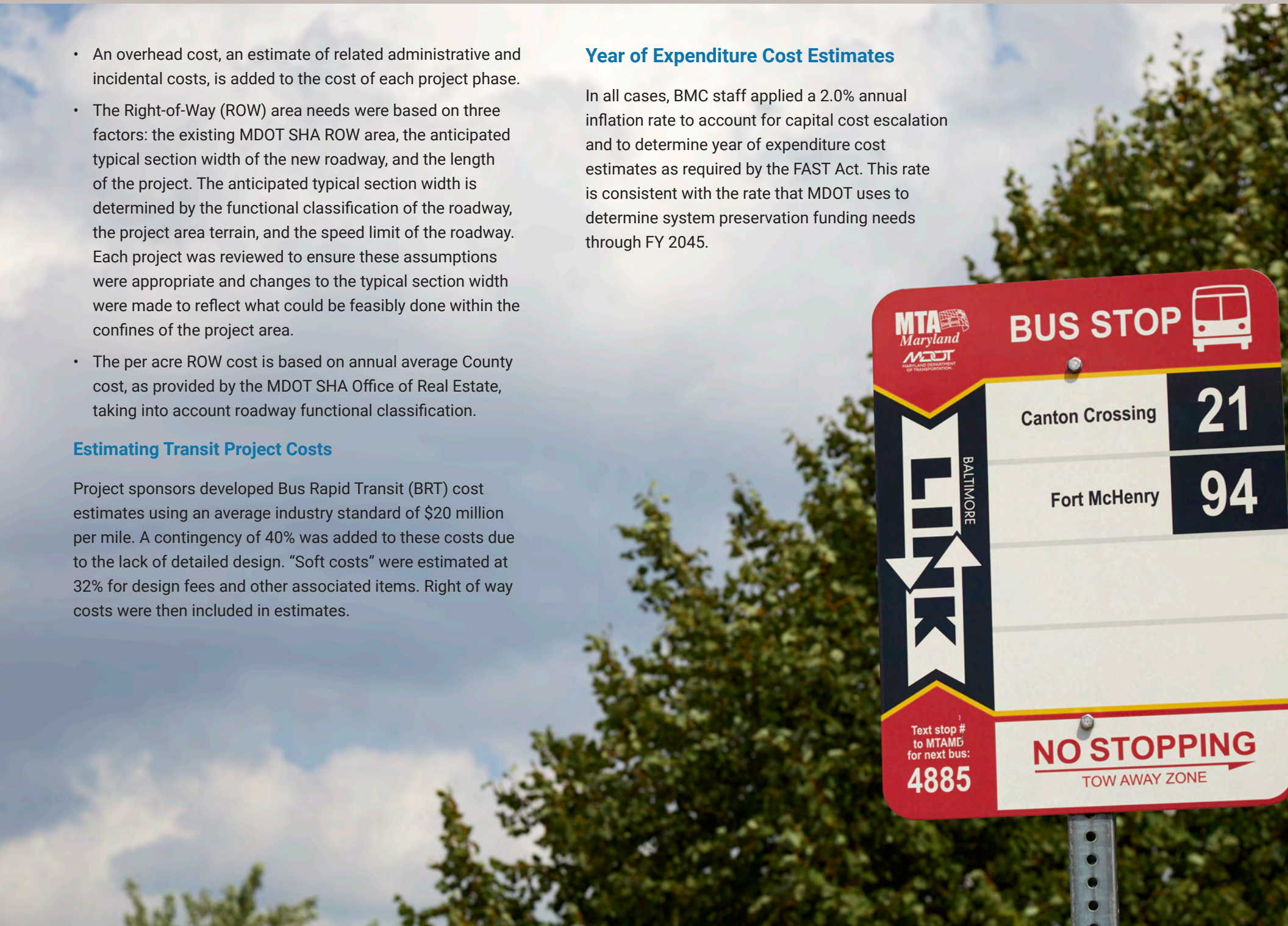
- An overhead cost, an estimate of related administrative and incidental costs, is added to the cost of each project phase.
- The Right-of-Way (ROW) area needs were based on three factors: the existing MDOT SHA ROW area, the anticipated typical section width of the new roadway, and the length of the project. The anticipated typical section width is determined by the functional classification of the roadway, the project area terrain, and the speed limit of the roadway. Each project was reviewed to ensure these assumptions were appropriate and changes to the typical section width were made to reflect what could be feasibly done within the confines of the project area.
- The per acre ROW cost is based on annual average County cost, as provided by the MDOT SHA Office of Real Estate, taking into account roadway functional classification.

Estimating Transit Project Costs

Project sponsors developed Bus Rapid Transit (BRT) cost estimates using an average industry standard of $20 million per mile. A contingency of 40% was added to these costs due to the lack of detailed design. “Soft costs” were estimated at 32% for design fees and other associated items. Right of way costs were then included in estimates.

Year of Expenditure Cost Estimates

In all cases, BMC staff applied a 2.0% annual inflation rate to account for capital cost escalation and to determine year of expenditure cost estimates as required by the FAST Act. This rate is consistent with the rate that MDOT uses to determine system preservation funding needs through FY 2045.



Chapter 7:

Major Capital Projects


LINKING YOU
MTA
Maryland Department of Transportation

MAJOR CAPITAL PROJECTS

Anticipated Projects and Funding – FY 2024-2045

The Transportation Improvement Program consists of near-term projects with defined scopes, established schedules, and committed funding. In contrast, *Maximize2045* consists of long-term commitments to system operations and preservation, along with major capital projects that generally have only conceptual scopes, potential schedules, and anticipated funding. The TIP covers the period from FY 2020 to 2023, and *Maximize2045* covers the period from FY 2024 to 2045.

Forecasted Revenues

Chapter 6, Financial Plan, shows the revenues the BRTB and MDOT anticipate will be available for 2024-2045:

System operations:	$36.749 billion
System preservation:	$16.270 billion
Major capital projects:	$12.162 billion
Total revenues:	**$65.181 billion**

Candidate Projects

The local jurisdictions, in consultation with MDOT HSA and MDOT MTA, submitted 82 projects for consideration for *Maximize2045*. These included 13 transit projects and 69 roadway projects. Many of the submitted projects include in their scopes improvements to adjoining pedestrian and bicycle facilities.

Appendix B describes the specific criteria used to evaluate and rank these projects.

Preferred Alternative, FY 2024-2045

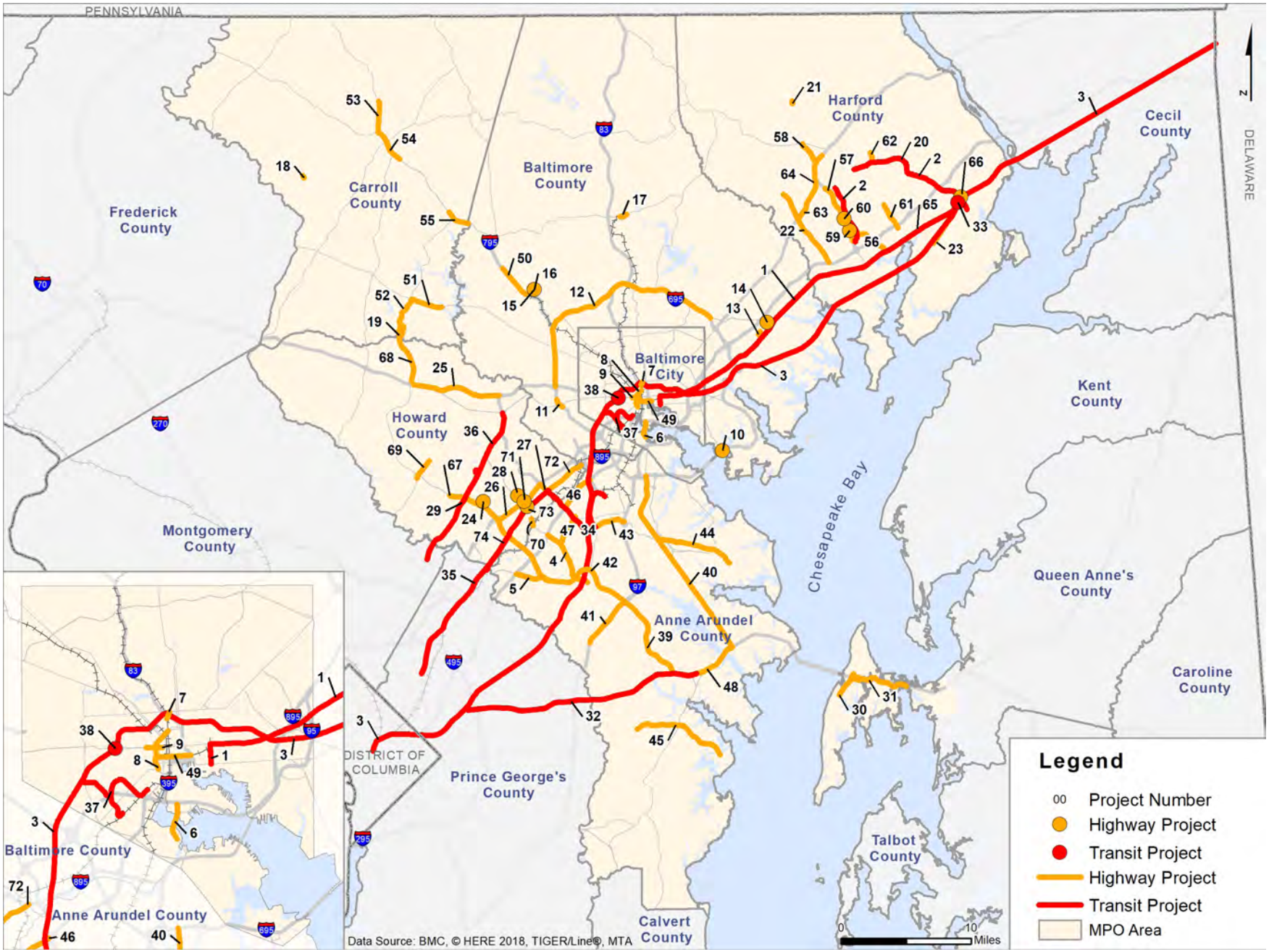
The BRTB, working with local jurisdictions and state agencies, developed a preferred alternative for the Baltimore region. This preferred alternative consists of funding allocated for operation and maintenance of the existing systems as well as major capital projects. These major capital projects were 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.

Analysis of the Potential Effects of Major Capital Projects

BMC staff included these major capital 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 potential effects on Environmental Justice populations. Appendix C shows the results of these analyses.

Locations of Major Capital Projects, FY 2024-2045



Preferred Alternative – Major Capital Projects, FY 2024-2045

The tables beginning on the next page show major capital projects in the time periods within which the BRTB anticipates they might be implemented. Sponsors, in coordination with MDOT SHA and MDOT MTA, provided current year cost estimates. BMC staff then applied an inflation factor, consistent with MDOT expectations, out to the expected years of operation to arrive at estimated year of expenditure (YOE) cost estimates.

Current assumptions about project scopes, future inflation rates, and future conditions 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, based on the best available knowledge and expectations.

Transit Projects, FY 2024-2034

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**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.	Improve service and mobility for current and future riders by addressing capacity, frequency, and reliability	$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.	Improve service and mobility for current and future riders by addressing capacity, frequency, and reliability	$4,000,000
	MDOT MTA Regional	BaltimoreLink Bus Expansion Program - Phase 1		Purchase buses to meet increasing ridership demands that exceed replacement needs.	Maintain and replace aging transit assets. Improve access to major activity centers. Improve intermodal connectivity.	$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.	Improve service and mobility for current and future riders by addressing capacity, frequency, and reliability	$21,000,000

Roadway Projects, FY 2024-2034

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**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.	Support growth of cyber-security activities at Fort Meade by relieving congestion with added travel lanes, improving traffic operations with access controls in the form of a center median, and supporting multimodal access to major employment hub with extensive pedestrian and 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.	Support economic growth at and around Fort Meade by constructing additional travel lanes to reduce congestion and median to improve safety, Improve access to major employment hub. Improve pedestrian/ bicycle facilities.	$238,000,000

Roadway Projects, FY 2024-2034

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	Improve access to jobs, amenities, and wider range of transportation modes: transit, bicycling, walking. Improve access to disadvantaged communities and to Port Covington development. Land use changes might bring destinations closer and increase property values. Provide operating cost and time savings to passengers, freight carriers, and shippers. Provide for smoother roadway with updated signings and markings. Improve safety: reduce fatalities, injuries, crash costs, and hazmat releases.	$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.	New structure will provide an increased vertical clearance to I-83. Provide equal travel lanes in each direction in addition to new bicycle lanes. Improve access to jobs, amenities, and wider range of transportation modes: transit, bicycling, walking, etc. Project is located in disadvantaged community and will help with land use changes that might bring destinations closer and increase property values.	$61,000,000

Roadway Projects, FY 2024-2034

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	Provide a safe environment for multimodal transportation options. Connect people to employment, health care, and shopping. Encourage economic competitiveness on a regional scale.	$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.	Provide developable space/ opportunity for growth of commercial, residential, or recreational land uses. Improve multimodal connections between Central Business District and West Baltimore MARC Station. Disadvantaged communities located west of MLK Jr. Boulevard are separated by U.S. 40. Removing bridges and reconnecting N Fremont Ave reconnects communities to north and south of U.S. 40, while improving local roadway connectivity. Intersection modifications along MLK Jr. Blvd will focus on safety improvements for pedestrians and cyclists, while increasing multimodal opportunities through continuation of trail between CBD and West Baltimore MARC Station.	$118,000,000

Roadway Projects, FY 2024-2034

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**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.	Improve access to major activity center.	$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.	Address safety and operations along I-695. Bridge will reach poor rating in the next 5 years. Bridge is a pinch point for capacity improvements along corridor currently under construction. Improve traffic flow through interchange.	$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.	Capacity improvements will support mobility and infrastructure stability for adjacent communities and greater Baltimore region.	$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.	Improve accessibility and safety for all modes. Support growth in an existing community.	$9,000,000

Roadway Projects, FY 2024-2034

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	Improve mobility through corridor.	$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.	Accommodate ongoing development in area by adding capacity. Adding a median will manage turning movements and increase safety.	$28,000,000
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.	Improve mobility through the corridor and improve safety conditions.	$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.	Improve accessibility and safety for all modes.	$22,000,000
18	MDOT SHA Carroll County	MD 31	Church Street to Coe Drive 1.0 mile	Infrastructure improvements and pavement rehabilitation; streetscaping	Improvements will stabilize roadway infrastructure and improve pedestrian access to existing commercial center enabling the community to thrive in the future.	$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	Improvements will stabilize roadway infrastructure and improve pedestrian access to an existing commercial center, enabling the community to thrive in the future.	$15,000,000

Roadway Projects, FY 2024-2034

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	MD 22 corridor is a major east-west arterial in Harford County connecting municipalities of Bel Air and Aberdeen. Road has interchanges with I-95 and U.S. 40 and direct access to main APG gate.	$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	Eliminate erosion of slopes of MD 24 alignment and adjacent stream slopes, ensuring a safe, stable roadway for community access.	$10,000,000
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	Improve access, mobility, and safety for passenger and freight traffic as well as bicyclists, pedestrians and transit users.	$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	Improve access, mobility, and safety in and out of Perryman Peninsula for passenger and freight traffic as well as bicyclists and pedestrians. Roadway will be main access for freight traffic accessing distribution centers and warehouses on the peninsula.	$50,000,000

Roadway Projects, FY 2024-2034

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	This major East Columbia intersection is a "gateway" to West and Downtown Columbia and is integral to operations and community/economic "health" of Columbia businesses and neighborhoods. Existing peak period congestion and safety problems posed by weave/merge movements to/from MD 32 create a significant traffic impediment to economic vitality of Snowden River Parkway corridor. Broken Land Parkway, a major arterial connection to downtown Columbia, a Regional Activity Center, also is impeded with ongoing congestion and crashes. Project will reduce sideswipe, angle, and rear-end collisions and improve freight access and mobility.	$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	Relieve congestion and improve freight movement by adding one lane in both directions and constructing interchange improvements within project limits.	$698,000,000

Roadway Projects, FY 2024-2034

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
26	MDOT SHA Howard County	I-95	MD 32 to MD 100 6.0 miles	Create peak hour shoulder use.	Relieve congestion and improve freight movement by adding one outside lane in both directions during peak hours. Creating additional merge area at MD 100 and MD 32 entrance ramps will increase safety.	$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.	MD 100 (east of I-95) daily, especially during peak periods, experiences congestion that negatively effects commuter, freight/commercial, and regional traffic as well as air quality and energy use. Local traffic diverts to local road network with commensurate negative effects. Widening MD 100 east of I-95 will relieve these problems and accommodate progressively increasing demand for this highway. Prior investment for initial MD 100 construction will be positively augmented by further needed investment.	$36,000,000

Roadway Projects, FY 2024-2034

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**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.	Mitigate impacts at congested state intersection within I-95 corridor, which experiences a relatively high rate of rear-end and sideswipe collisions. Facilitate direct access to I-95 and regional activity center, Columbia Gateway, for commuters as well as freight traffic.	$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.	Relieve congestion by adding one lane in northbound direction to match southbound typical section. Improve safety by restricting access to Rivers Edge community with a full grade-separated interchange.	$78,000,000

Roadway Projects, FY 2024-2034

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	MD 8 is predominanty a 2-lane road that serves as the only access to a 10-mile residential peninsula on southern Kent Island. Widening northern sections of MD 8 and reconstructing existing overpass will add capacity, improve safety, reduce congestion, and allow for pedestrian and bike access in corridor. Reconstructing MD 8 overpass into a divergent diamond will improve mobility and access of daily commuters to Chesapeake Bay Bridge. Project allows for safe bike and pedestrian access across U.S. 50/301, connecting existing improvements north and south of U.S. 50/301. Thompson Creek service road will allow access to business and allow some traffic to bypass more congested sections of MD 8. Shoulder use on MD 8 North is permitted in limited circumstances at times of severe congestion.	$82,000,000

Roadway Projects, FY 2024-2034

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	More than 26 million vehicles travel U.S. 50/301 and cross the William Preston Jr. Memorial Bridge annually, making this a vital transportation corridor in the mid-Atlantic region. MD 18 is the only alternative route to U.S. 50/301 for 10 miles from the U.S. 50/301 split in Queenstown to the Bay Bridge. MD 18 is vital to mobility in the area, access to services, and emergency service response and transport. Widening MD 18 to add capacity, improve safety, and maintain mobility as volumes and congestion on U.S. 50/301 increase is vital to the transportation system while MDOT is planning for additional capacity for crossing the Chesapeake Bay.	$111,000,000

Transit Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**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	As stated in the Corridor Growth Management Plan, although the U.S. 50 corridor indicates there is insufficient land use density to warrant additional passenger rail service, it appears feasible to provide BRT or high-speed transit vehicles on a separate right of way, offering high-quality transit service at lower capital and operating expense.	$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.	Improve service and mobility for current and future riders by addressing capacity, frequency, and reliability.	$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.	Link Baltimore and Washington regions more closely together to enable greater economic, housing, educational, and cultural opportunities in each region. Address peak hour congestion. Provide an effective linkage between Camden MARC line and BWI Airport.	$449,000,000

Transit Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	Link Baltimore and Washington regions more closely together to enable greaterr economic, housing, educational, and cultural opportunities in each region. Address peak hour congestion. Provide an effective linkage among existing and planned communities along corridor. Strengthen state investment in the University of Maryland.	$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.	Link Baltimore and Washington region more closely together to allow greater economic, housing, educational, and cultural opportunities in each region. Address peak hour congestion.	$735,000,000
	MDOT MTA Regional	BaltimoreLink Bus Expansion Program - Phase 2		Purchase buses to meet increasing ridership demands that exceed replacement needs.	Maintain and replace aging transit assets. Improve access to major activity centers. Improve intermodal connectivity.	$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.	Enable MARC to provide longer train sets to reduce crowding on MARC Penn Line trains during peak periods. Project also serves as a step toward providing midday service to Camden station in the future.	$62,000,000

Transit Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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	Improves efficiency of MARC operations by consolidating locomotive repair and maintenance at proposed Riverside Locomotive Maintenance Building. This will eliminate need to have a dedicated locomotive maintenance building for Penn Line, making operations much more efficient.	$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.	Relocated station will improve ADA accessibility and make station safer for passengers. It will also facilitate shorter dwell times through use of high-level platforms. An ADA-accessible station with more efficient train operations will provide a more attractive option to those who currently travel along the corridor by car, thus contributing to a decrease in congestion and associated emissions. A new station also also make site more attractive for transit-oriented development.	$91,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**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.	I-97 provides a gateway to the City of Annapolis and Eastern Shore. Bottlenecks occur on roadway (not just during summer season, but year round). Project will support U.S. 50/301 improvements (Bay Bridge).	$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.	Corridor serves both local traffic and long-distance commuter traffic destined for downtown Baltimore in the Annapolis, Severna Park, Pasadena, and Glen Burnie areas.	$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.	Reduce congestion on MD 3, thus improving air quality and reducing greenhouse gases. Improve access to Prince George's County, Fort Meade, and BWI. Project will benefit a significant amount of truck traffic on MD 3. Also, project serves Crofton and Davidsonville areas, where there is a considerable amount of retail and residential activity, including new Waugh Chapel Village.	$120,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
42	MDOT SHA Anne Arundel County	MD 32	I-97 to Howard County 11 miiles	Widen from 6 to 8 lanes between I-95 and MD-295. Add additional HOV-2 lanes.	Corridor serves a diverse traffic mix, including local traffic in Savage, Odenton, and Millersville areas, and commuter traffic destined for Ft. Meade, NSA job centers, as well as Annapolis.	$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.	1. The Yellow Line Light Rail Study utilized part of median to run the train. 2. This is a major route connecting Howard County, Anne Arundel County, Arundel Mills and the BWI Airport. 3. Connects Anne Arundel and Howard counties. 4. Connectivity to I-9	$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.	Corridor serves local traffic in Pasadena and Glen Burnie as well as long-distance commuters traveling to Baltimore and Annapolis. Roadway has numerous access points and is near capacity between Jumpers Hole Road and MD 648, which leads to congestion between Jumpers Hole Road and MD 607.	$196,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**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.	MD 214 provides an essential link between the Edgewater area to the rest of the County and the Washington DC. region. It serves local traffic in Edgewater as well as commuters traveling to job centers in Washington D.C., Fort Meade, the NSA, and Annapolis.	$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.	Support economic growth at BWI Airport. Relieve congestion and improve freight movement by adding one lane in both directions. Develop a key component of local network with Hanover Road interchange and extension.	$331,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	Ridge Road corridor parallels the Baltimore-Washington Parkway and connects public facilities and activity centers with residential areas. Pedestrian and bicycle accommodations among residential areas and activity centers are limited and not constructed to county/state standards. County expects growth in employment and population from planned and future developments along or near MD 713 to result in increased travel demand and recurring congestion. Purpose of MD 713 planning study is to identify year 2040 deficiencies, evaluate build alternatives to address deficiencies, reduce current and forecasted congestion, reduce crash potential, and improve pedestrian and bicycle compatibility, while minimizing impacts to natural and built environment.	$60,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
48	MDOT SHA Anne Arundel County	U.S. 50	I-97 to MD 2 5.5 miles	Widen from 6 to 8 lanes.	Portions of facility, especially from MD 665 across Severn River Bridge to MD 2, experience recurring congestion. SHA has completed improvements at Severn River Bridge; remainder of funding should be used to address remainder of corridor. Project will reduce recurring congestion, improve access to regional hospital, improve connections among communities, and support transit service across bridge.	$330,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	Improve safety and mobility for all users by reducing congestion, fatalities, injuries, crashes, and hazmat releases. Dedicated bus lane will provide for increased public transit efficiency and connectivity throughout Central Business District, surrounding neighborhoods, and Southern Gateway entertainment district. Provide increased access to jobs for communities in West Baltimore by providing better connectivity to Central Business District. Utility upgrades and replacements will reduce roadway deterioration from stream erosion. Reduce emissions as a result of smoother surface and synchronized signal timings.	$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.	Improve access to an existing commercial hub.	$191,000,000
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	Adding a median and partial access controls will improve safety. Pedestrian and bicycle facilities will improve multimodal access.	$102,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	Adding 2 lanes addresses anticipated traffic growth; constructing a median and access controls will increase safety in the corridor; pedestrian and bicycle facilities will improve multimodal connections.	$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.	Support economic vitality of the community by reducing congestion and improving operations through widening MD 97 from 2 to 5 lanes and constructing MD 140 / Meadow Branch Road interchange. Regional access multi-modal mobility will be improved with this improvement with 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.	Widen through traffic lanes and construct intersection and interchange improvements at multiple locations.	$271,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	Support economic vitality of community by making this busy intersection safer and more efficient with a grade-separated interchange. Improve regional access with improved roadway connection. Enhance multimodal mobility with 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.	Improve safety and pedestrian access from commercial areas near MD 924 to residential communities to the east.	$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.	Increased traffic volumes continue to stress roadway network in and around Town of Bel Air. MD 24 corridor links Town of Bel Air, Forest Hill, and communities in northern Harford County with I-95 and U.S. 40 corridor.	$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.	Increased traffic volumes continue to stress roadway network in and around Town of Bel Air. This section of roadway is the gateway into County's growth area from rural northern Harford County communities.	$69,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**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).	Reduce congestion and improve safety and operations by transforming an at-grade intersection into a grade-separated intersection.	$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).	Roadway widening will accommodate a high volume of through traffic and opposing turns at this intersection. An 8-lane section would be required to move projected traffic on MD 24 and a 7-lane section with double turn lanes would be required along E. Wheel Road. As an alternate to this very large at-grade intersection, a grade-separated intersection with median ramps is proposed.	$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.	Relieve congestion and improve access, capacity, mobility, and safety for passenger and freight traffic as well as bicyclists, pedestrians, and transit riders. Address queuing issues at I-95 interchange.	$161,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	Partnership between Harford Community College (HCC) and Towson University will bring expected growth and planned expansion. Project will improve safety, mobility, and access for passenger traffic, bicyclists, and pedestrians in and around HCC.	$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.	Increased traffic volumes continue to stress roadway network in and around Town of Bel Air. U.S. 1 is a major transportation corridor linking Bel Air with northeast Baltimore County.	$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.	Increased traffic volumes continue to stress roadway network in and around Town of Bel Air. Bel Air Bypass (U.S. 1 Bypass) has been an anticipated highway project for several years. Added capcity will reduce congestion. Interchange improvements will improve safety and operations. Project supports economic development and will improve quality of life.	$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.	Project may relieve some forecasted congestion on I-95 by providing local travelers an alternate route. Includes bicycle and pedestrian improvements.	$67,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**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.	Improve capacity and safety at this interchange for passenger, freight, and transit traffic as well as bicyclists and pedestrians.	$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.	Facilitate inter-county commuting and reduce inter-county congestion. Facilitate diversion of commuter traffic off local roads and reduce congestion-related emissions (improving air quality). Improve freight movements and access to regional activity centers. Enhance access to lower priced housing market in Carroll County and growing employment markets in Anne Arundel, Prince George's, and Montgomery counties. Improve recreational-related travel times. Leverage prior federal investments for MD 32.	$1,025,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	Project has significant community support for safety reasons. Improve access to lower priced housing in Carroll County as well as commercial operations in both Howard and Carroll counties. Most commuter traffic using this road does not originate in Howard County but in Carroll and Frederick counties. Improved access to jobs will increase Carroll County PFA development, including major redevelopment projects such as Springfield State Hospital. Project will complement Carroll County MD 32 widening project.	$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.	Existing and newly developing commercial land uses along this segment of MD 108 are negatively affected by existing MD 108 road design, characterized by lack of ped/bike access, congestion, and multiple at-grade access points.	$46,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	Improve mobility for all modes. Improve housing, commuting, and freight options (to/from Baltimore). Provide benefits to new and existing communities through access to all modes of travel. Facilitate freight access to/from Dorsey Run Road and MD 295 and access to MARC Penn line.	$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.	Relieve congestion at this grade separation that currently experiences peak period unacceptable levels of service. Facilitate access to affordable housing in U.S. 1 corridor and Columbia. Augment freight movement, both local and regional. Leverage prior federal funding for I-95 and MD 175.	$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	Support commercial revitalization of corridor by relieving congestion with additional travel lanes and pedestrian/ bicycle facilities.	$179,000,000
73	MDOT SHA Howard County	U.S. 1 / MD 175 Interchange	MD 175 0.5 miles	Construct new grade-separated interchange	Support commercial revitalization of U.S. 1 corridor by relieving congestion with grade-separated interchange. Project also will improve safety by removing at-grade turning movements.	$153,000,000

Roadway Projects, FY 2035-2045

Map ID	Operating Agency / Jurisdiction	Name	Limits / Length	Description	**Justification**	**Estimated Cost (YOE)**
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.	Enable alternate transport modes, provide access to affordable housing options (U.S. 1 revitalization), and expand commuting options throughout region. Provide alternate modal opportunities to benefit new and existing communities and improve access to recreational facilities. Improvements near U.S. 1 / MD 32 / Guilford Road will alleviate regional congestion and facilitate freight operations to/from statewide/ regional/national highway network. Leverage prior federal and state investments through cooperative state/county development strategy within existing Priority Funding Area.	$145,000,000

Potential Small Program Set-Asides – 2024-2045

In the coming years, the BRTB may decide to set aside some funding to support various strategies that either increase transportation system efficiency or employ transportation demand management approaches 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. Objectives that could be addressed through this funding include: managing congestion, reducing emissions, promoting equity, and improving safety.

The BRTB has a total of $105 million for potential set-asides. This is the difference between the amount of revenues forecasted to be available for major capital projects from 2024-2045 and the year-of-expenditure cost estimates for major capital projects in the adopted Preferred Alternative.

Two projects that could be funded from these set-asides are major efforts to develop regional greenways:

- **Baltimore Greenway** – a proposed 35-mile network of urban shared-use trails to link Baltimore's anchor institutions and destinations—including universities, hospitals, museums, parks, schools, waterfronts, and employment centers—with the city's neighborhoods and outdoor resources.
- **Patapsco Regional Greenway** – a proposed shared-use trail running through the Patapsco River valley from Baltimore's Inner Harbor to Sykesville in Carroll County, passing through or near the communities of Cherry Hill, Baltimore Highlands, Halethorpe, Elkridge, Catonsville, Ellicott City, Oella, Daniels, Woodstock, Marriottsville, and Sykesville.

Maryland Transportation Authority Projects, FY 2024-2045

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 include these projects because of their effects on air quality conformity and travel demand. The table below shows 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.

MDTA Projects, FY 2024-2045

Year	Jurisdiction	Name	Limits	Description
2025	Baltimore County	I-95: Section 100	Interchanges at I-695 and MD 43	Construct ramps
2026	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

MDTA Projects, FY 2024-2045

Year	Jurisdiction	Name	Limits	Description
2029	Baltimore City	I-95: Port Covington access improvements	Caton Avenue to Ft. McHenry Tunnel	Improve I-95 ramps along approximately 7 miles of I-95 and sections of Hanover Street, McComas Street, and Key Highway. Improvements include: 1. I-95 Northbound Off-Ramps- (a) Exit 52, new ramp from Russell Street off-ramp; (b) Exit 53 interchange, new spur from I-395 southbound ramp; (c) Exit 54, remove ramp from I-95 northbound to Hanover Street southbound; and (d) Exit 55, reconstruct ramp from I-95 northbound to McComas Street 2. I-95 Northbound On-Ramps – new ramp from McComas Street to I-95 Northbound 3. I-95 Southbound Off-Ramps – new ramp from I-95 southbound to McComas Street westbound 4. I-95 Southbound On-Ramps – realign ramp from McComas Street Westbound to I-95 southbound 5. Hanover Street – reconstruction from CSX Bridge to McComas Street westbound to I-95 southbound 6. McComas Street and Key Highway – (a) realign McComas Street; and (b) widen Key Highway between McHenry Row and McComas Street 7. Pedestrian and Bicycle Connections – (a) new sidewalks along Hanover Street and realigned McComas Street; (b) shared use path along Key Highway; and (c) shared use path linking South Baltimore to Port Covington peninsula.

Committed Funding, FY 2020-2023

As noted, *Maximize2045* covers the time period from FY 2024 through 2045. To present a complete picture of planned future transportation investments, the table below shows the major committed projects that are within the FY 2020-2023 time frame of the current adopted TIP. "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 FY 2020-2023 time frame.

Committed Projects, FY 2020-2023

Year	Operating Agency / Jurisdiction	Name	Limits	Description
2020	MDOT SHA Anne Arundel County	MD 175	Disney Road to Reece Road	Widen from 2 to 6 lanes.
2020	Baltimore City	U.S. 40, Edmondson Avenue bridge	Bridge over Gwynns Falls	Widen bridge.
2020	Howard County	Dorsey Run Road (south section)	CSX Railroad to Old Dorsey Run Road	Widen from 2 to 3 lanes (with center turn lane).
2021	MDOT SHA Anne Arundel County	MD 175	National Business Parkway to McCarron Court	Widen from 4 to 6 lanes and reconstruct interchange at MD 295.
2021	MDOT SHA Baltimore County	I-695	U.S. 40 to MD 144	Widen from 3 to 4 lanes (outer loop).
2022	Anne Arundel County	Hanover Road Corridor	Ridge Road to New Ridge Road	New 4-lane road.

Committed Projects, FY 2020-2023

Year	Operating Agency / Jurisdiction	Name	Limits	Description
2022	Baltimore County	Mohrs Lane bridge	Bridge over CSX Railroad	Reconstruct bridge closed in 2011 (also accommodates future Campbell Boulevard).
2022	MDOT SHA Howard County	MD 32, Sykesville Road	Linden Church Rd to I-70	Widen from 2 to 4 lanes and upgrade interchange at I-70. Construct new full interchanges at MD 144, Dayton Shop Road, and Rosemary Lane.
2022	MDOT SHA Howard County	MD 175 interchange	At Blandair Park access road	New interchange and new road into Blandair Park.
2022	MDOT SHA Howard County	U.S. 29 / Broken Land Parkway interchange	3.1 miles of new ramps and new roadways	New direct connections from westbound U.S. 29 / Broken Land Parkway interchange ramp to new road (Merriweather Drive) and to Little Patuxent Parkway. Direct connection from Merriweather Drive to Broken Land Parkway, including configuring north and southbound U.S. 29 ramps at Broken Land Parkway into signalized intersection. Remove existing ramp from Broken Land Parkway to U.S. 29 southbound.
2023	MDOT SHA Baltimore County	I-695	I-70 to MD 43	Add 1 lane in each direction during a.m and p.m. peak using inside shoulder (western and northern portion of I-695).
2023	Harford County	Bata Boulevard Access Road	MD 543 to Bata Boulevard	Construct 2-lane access road from MD 543 directly to Bata Boulevard (700 feet).
2023	Howard County	Dorsey Run Road (middle section)	CSX Railroad to MD 175	Widen from 2 to 4 lanes.
2023	Howard County	Guilford Road	Dorsey Run Road to U.S. 1	Widen from 2 to 4 lanes.
2023	Howard County	Snowden River Parkway Phase 1	Broken Land Parkway to Oakland Mills Road	Widen from 4 to 6 lanes.

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 – Could be amended into *Maximize2045* should future funds become available

Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estiimated Cost (YOE)
MDTA Anne Arundel County	Bay Bridge	MD 2 to U.S. 50 / U.S. 301 split 21.0 Miles	Construct a third span of the Chesapeake Bay Bridge and widen approach roadways.	not available
Harford County	Perryman West (Road B)	U.S. 40 at Mitchell Lane to Canning House Road 2.0 miles	Construct new 2-lane road and bridge over Cranberry Run in Perryman, including turn lanes and bicycle and pedestrian access.	$50,000,000
MDOT SHA Harford County	MD 715 Extended	U.S. 40 / present terminus to MD 22 3.0 miles	Construct new 4-lane road, including bicycle and pedestrian access.	$127,000,000
MDOT SHA Harford County	U.S. 1	Baltimore County line to MD 152 1.4 miles	Add travel lane in each direction (i.e., widen from 4 to 6 lanes). Includes turn lanes and bicycle and pedestrian access where applicable.	$31,000,000

Illustrative Projects – Could be amended into *Maximize2045* should future funds become available				
Operating Agency / Jurisdiction	Name	Limits / Length	Description	Estiimated Cost (YOE)
Howard County	Bus Rapid Transit to Odenton MARC station	Downtown Columbia Odenton MARC station 17 miles	BRT line with potential stations at Stevens Forest Road, Snowden River Parkway, Columbia Gateway, Jessup, and Savage, including shuttle services. Route would use Broken Land Parkway, CSX right of way, and MD 32.	not available
MDOT SHA Howard County	U.S. 29 Widening	MD 100 to I-70 3.2 miles	Widen from 6 to 8 lanes. Construct a consistent highway cross-section capable of accommodating U.S. 29 peak period traffic.	$684,000,000
MDTA Quuen Anne's County	Chesapeake Bay Crossing, Phase II NEPA	Selected bay crossing location	Conduct Phase II NEPA study on selected bay crossing location. Phase I NEPA is to be completed in 2020 and Phase II NEPA will evaluate potential impacts of selected location. Phase II NEPA is vital to moving forward with adding additional capacity to cross the Chesapeake Bay.	$25,000,000