Baltimore Regional Transportation Board

CONFORMITY DETERMINATION OF RESILIENCE 2050, THE LONG-RANGE TRANSPORTATION PLAN AND 2024-2027 TRANSPORTATION IMPROVEMENT PROGRAM – APPENDICIES

Prepared by the Baltimore Regional Transportation Board

Appendix A: Conformity Requirement Checklist

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Section of 40 CFR Part 93	*Requirement*	*BRTB's Response*
§93.110	Is the conformity determination based upon the latest planning assumptions?	Yes
	(a) Is the conformity determination, with respect to all other applicable criteria in §93.111-§93.119, based upon the most recent planning assumptions in force at the time the conformity analysis began?	(a) Yes. The conformity determination uses the most current planning assumptions in force and approved by the Interagency Consultation Group (ICG) at the time the conformity analysis began. Vehicle fleet characteristics used reflect 2020 vehicle registration data for the Baltimore region.
	(b) Are the assumptions derived from the estimates of current and future population, employment, travel, and congestion most recently developed by the MPO or other designated agency? Is the conformity determination based upon the latest assumptions about current and future background concentrations?	(b) Yes. This conformity determination utilizes the most recent demographic and employment data; it uses Round 10 socioeconomic forecasts endorsed by the BRTB in June 2022. The travel demand model was validated to a 2019 base year.
	(c) Are any changes in the transit operating policies (including fares and service levels) and assumed transit ridership discussed in the determination?	(c) Yes. All existing and proposed transit systems and service for the planning horizons have been included in the conformity analysis.
	(d) The conformity determination must include reasonable assumptions about transit service and increases in transit fares and road and bridge tolls over time.	(d) See above. In addition, the Maryland Transportation Authority has indicated that there are no plans to increase road or bridge tolls in the future.
	(e) The conformity determination must use the latest existing information regarding the effectiveness of the transportation control measures (TCMs) and other implementation plan measures that have already been implemented.	(e) Currently, there are no adopted TCMs in the corresponding SIPs.
	(f) Key assumptions shall be specified and included in the draft documents and supporting materials used for the interagency and public consultation required by §93.105.	(f) Key assumptions are specified and other supporting documents are included in this conformity determination document, which is available to the public and the ICG.

Appendix A: Conformity Requirement Checklist

Section of 40 CFR Part 93	*Requirement*	*BRTB's Response*
§93.111	Is the conformity determination based upon the latest emissions model?	Yes. EPA's latest emissions model, Motor Vehicle Emissions Simulator (MOVES) 3 was used for this conformity determination. EPA's announcement of the MOVES3 emissions model for SIPs and transportation conformity analyses in states other than California was effective January 7, 2021. This announcement started a two-year transportation conformity grace period that ended on January 9, 2023.
§93.112	Did the MPO make the conformity determination according to the consultation procedures of the Conformity Rule or the state's conformity SIP?	Yes. Consultation procedures were followed in accordance with the Transportation Conformity Rule. Appropriate agencies were consulted. A scope of work was made available to FHWA, FTA and EPA.
§93.106(a) (1)	(1) Are the transportation plan horizon years correct?	Yes. The attainment years for the 1997, 2008, and 2015 ozone NAAQS are not within the timeframe of the TIP and Plan. The first modeled horizon year is **2023**, which is the attainment year and no more than 10 years from the base year of the SIP. The second horizon year is **2025**, a year within 10 years of transportation demand model base year 2019. The third and fourth horizon years, **2035**, and **2045** are set so that there are no more than 10 years between horizon years. The fifth horizon year is **2050**, the date of full implementation of the Plan.
§93.106(a) (2)(i)	Does the plan quantify and document the demographic and employment factors influencing transportation demand?	Yes. Round 10 socioeconomic forecasts are available in Appendix D of this document.
§93.106(a) (2)(ii)	Is the highway and transit system adequately described in terms of regionally significant additions or modifications to the existing transportation network which the transportation plan envisions to be operational in horizon years?	Yes. The regionally significant additions and modifications to the network utilized in this conformity analysis are listed in Appendix C. It provides a listing of projects from the 2024-2027 TIP.
§93.108	Is the transportation plan fiscally constrained?	Yes. The transportation plan is fiscally constrained. See Appendix J for documentation.

Appendix A: Conformity Requirement Checklist

§93.113(b)	Are TCMs being implemented in a timely manner?	There are no transportation control measures in the SIP.
§93.118	For Areas with SIP Budgets: Is the Transportation Plan, TIP, or Project consistent with the established motor vehicle emissions budget(s) in the applicable SIP?	Yes. The TIP and the Plan result in fewer emissions than the established budgets for all pollutants in each applicable analysis year.

Appendix B: Interagency Consultation

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The major steps of the Interagency Consultation Process regarding the Conformity Determination of the 2024-2027 Transportation Improvement Program and Resilience 2050 took place at the following meetings:

- February 8, 2023 – Interagency Consultation Group – Review and approval of methodology/assumptions for conformity determination
- April 5, 2023 – Interagency Consultation Group – Review and approval of conformity status of projects
- May 3, 2023 - Interagency Consultation Group – results presented with support to release for public review
- May 17 - June 16, 2023 – Public Comment Period on the Conformity Determination and TIP and LRTP
- July 5, 2023 – Technical Committee and Interagency Consultation Group review of public comments and emissions analysis and then recommendation to move the TIP, LRTP, and Conformity Determination to the BRTB for approval
- July 25, 2023 – BRTB Meeting – approval of the Conformity Determination TIP, and LRTP

Appendices C-1, C-2, C-3 and C-4: Conformity Status of Projects from the 2024-2027 TIP and Resilience 2050

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Anne Arundel County	Culvert Invert Paving	11-2401-13	This project will provide culvert invert paving for five county-owned metal pipe culverts identified through scheduled inspections. (AA2013, AA3009, AA4031,AA5017 & AA5018)	NA	Exempt	2025	N/A
Anne Arundel County	Patuxent Rd over Little Patuxent River	11-2403-13	This project will rehabilitate the existing bridge located on Patuxent Rd over Little Patuxent River to replace the deteriorating bridge deck and perform repairs on the bridge superstructure and substructure.	2 to 2 lanes	Exempt	2030	N/A
Anne Arundel County	Town Center Boulevard over tributary of Severn Run	11-2402-13	This project will replace/rehabilitate the existing two-cell culvert located on Town Center Blvd over Tributary to Severn Run to address the deteriorating condition of the structure. The project is eligible for 80% federal funding for both design and construction through the Federal Highway Bridge Program. Construction funding will be applied to this project when the Design and ROW phases are complete, from project H581100, Bridge Construction Placeholder.	4 to 4 lanes	Exempt	2030	N/A
Anne Arundel County	Conway Road Bridge over Little Patuxent River	11-2106-13	This project will replace the existing bridge along Conway Road over the Little Patuxent River due to its deteriorating condition. The width and inclusion of shoulders and sidewalks will be evaluated during engineering.	2 to 2 lanes	Exempt	2028	N/A
Anne Arundel County	Furnace Avenue Bridge over Deep Run	11-1103-13	This project will reconstruct the existing bridge to correct existing deficiencies, a substandard approach road and bridge deck geometry. Five foot shoulders are planned on both sides of the road. No sidewalks will be included as part of this project.	2 to 2 lanes	Exempt	2027	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Anne Arundel County	Hanover Road Bridge over Deep Run	11-2105-13	This project will replace the existing bridge along Hanover Road over Deep Run due to its deteriorating condition. Shoulders and sidewalks will be provided on both sides. Cost is projected to increase from $6.945 M to $7.743 M due to refined construction estimate.	2 to 2 lanes	Exempt	2027	N/A
Anne Arundel County	Hanover Road Corridor Improvement	11-1801-42	This project is to provide design and right-of-way acquisition of a section of Hanover Road on a new alignment between Ridge Road and New Ridge Road in Hanover.	0.7 miles	Exempt	2030	N/A
Anne Arundel County	Harwood Road Bridge over Stocketts Run	11-1208-13	This project will replace the existing bridge over Stocketts Run. Three foot shoulders are planned on both sides of the road. Engineering funds were included in the FY 2014-2017 TIP. FY 2024 funds are to complete construction.	2 to 2 lanes	Exempt	2023	N/A
Anne Arundel County	Jacobs Road Bridge over Severn Run	11-2107-13	This project will replace the existing bridge along Jacobs Road over Severn Run due to its deteriorating condition. The width and inclusion of shoulders and sidewalks will be evaluated during engineering. Cost is projected to decrease from $10.624 M to $3.815 M due to refined construction costs.	2 to 2 lanes	Exempt	2027	N/A
Anne Arundel County	Magothy Bridge Road Bridge over Magothy River	11-1402-13	This project will replace the bridge deck and add shoulders to the bridge over the Magothy River. Five foot sidewalks and seven foot shoulders are planned on both sides of the road. Engineering funds were first included in a previous TIP. FY 2024 funds are to complete the construction phase.	2 to 2 lanes	Exempt	2026	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Anne Arundel County	McKendree Road Culvert over Lyons Creek	11-1601-19	This project is to remove and replace the culvert on McKendree Road over Lyons Creek to correct the structurally deficient condition of the existing multicell culvert. Three foot shoulders are planned on both sides of the road. Engineering funds were first included in FY 2017. FY 2024 funds are to complete final design and start construction. This project was approved for 100% Federal Aid Bridge Program Funding for FY 2024 & 2025.	2 to 2 lanes	Exempt	2025	N/A
Anne Arundel County	O'Connor Road Bridge over Deep Run	11-1403-13	This project will replace the bridge over Deep Run at O'Connor Road. Three foot shoulders are planned on both sides of the road. Engineering funds were first included in the FY 2014-2017 TIP. FY 2024 engineering funds are to complete the final design after NEPA approval.	2 to 2 lanes	Exempt	2026	N/A
Anne Arundel County	Parole Transportation Center	11-2101-66	This project will provide a multi-modal transportation center in Parole at the Westfield Annapolis Mall. The facility will serve existing local and regional bus service, but will also be designed as an intermodal hub with possible future connectivity to m	NA	Exempt	2026	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Anne Arundel County	Polling House Road Bridge over Rock Branch	11-1602-13	This project will replace the existing bridge along Polling House Road over Rock Branch to correct the deteriorated structure and obsolete deck geometry. Three foot shoulders are planned on both sides of the road. The estimated total cost has increased from $2.875 million to $6.171 million as a result of preliminary engineering and construction increases. Engineering funds through NEPA approval were included in FY 2023.	2 to 2 lanes	Exempt	2028	N/A
Baltimore City	25th Street/Huntingdon Avenue Rehabilitation from Greenmount Avenue to 29th Street	12-2403-11	Roadway rehabilitation work includes milling and paving, base repairs, curb and gutter replacement, ADA compliant pedestrian ramps, sidewalks, driveways, crosswalks, pedestrian lighting, pedestrian and bike facility improvements, traffic signal upgrades with APS/CPS, new streetlights and street light fixture upgrades, pavement marking and signing, new trees and landscaping, and storm drainage improvements.	4700ft	Exempt	2030	N/A
Baltimore City	Johnston Square Improvements	12-2404-11	This project includes design and construction of roadway rehabilitation work of E. Preston Street and E. Biddle Street from Fallsway to N. Eden Street, Harford Avenue from E. Biddle Street to North Avenue and Valley Street from E. Chase Street to E. Biddle Street. Roadway rehabilitation, sidewalk improvements, street cycle track, removal/replacing sidewalks, curb and gutter, ADA ramps, driveways as necessary to make ADA compliant, pedestrian lighting/signal reconstruction as required, trees, tree pits, landscaping, flex posts, signing and pavement marking, enhanced crosswalks, pedestrian safety elements, street amenities, drainage improvements and stormwater management.	4 to 4 lanes, 10,400 feet	Exempt	2030	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore City	Orleans Street Rehabilitation from Washington Street to Ellwood Avenue	12-2405-11	Roadway rehabilitation work includes full depth base repair, milling, paving, ADA compliant sidewalks, pedestrian ramps, crosswalks, drainage improvements, traffic signal replacement, signage, pavement markings, curb and gutter replacement, landscaping, trees, new street lights, and street light fixture upgrades.	4 to 4 lanes, 4,500 feet	Exempt	2030	N/A
Baltimore City	Pennsylvania Avenue Rehabilitation from North Avenue to MLK Boulevard	12-2402-11	Roadway rehabilitation work includes milling and paving, base repairs, curb and gutter replacement, ADA compliant pedestrian ramps, sidewalks, driveways, crosswalks, pedestrian lighting, pedestrian and bike facility improvements, traffic signal upgrades with APS/CPS, new streetlights and street light fixture upgrades, pavement marking and signing, new trees and landscaping, and storm drainage improvements.	6600ft	Exempt	2030	N/A
Baltimore City	W North Avenue Pedestrian Safety Improvements from Mt Royal Avenue to Hilton Street	12-2401-03	Pedestrian safety improvement work includes reconstruction of sidewalks, driveways, curb, gutter, pedestrian ramps, pedestrian signal APS/CPS, crosswalks (continental), pedestrian lighting in areas needed, and expanded tree pits with added tree to make this corridor ADA compliant and to create ADA compliant drainage systems at crosswalks. No capacity changes.	13500	Exempt	2030	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore City	West Patapsco Avenue from Magnolia Avenue to Potee Street	12-2012-11	Roadway rehabilitation work includes concrete roadway slab replacement, concrete type I and type II repair, full depth base repair, milling, paving, ADA compliant sidewalks, pedestrian ramps, crosswalks, drainage improvements, traffic signal replacement, signage, pavement markings, curb and gutter replacement, landscaping, trees, new street lights, and street light fixture upgrades. Existing travel lanes on the south side of the road will be converted to a shared use trail. Engineering funds for preliminary design were appropriated in FY 2021. FY 2024 engineering funds are to complete final design (rolled over from FY23).	6 to 4 lanes, 5075 ft	Exempt	2028	2035
Baltimore City	25th Street Rehabilitation from Greenmount Avenue to Kirk Avenue	12-2001-11	Roadway rehabilitation work includes concrete roadway slab replacement, concrete type I and type II repair, full depth base repair, milling, paving, ADA compliant sidewalks, pedestrian ramps, crosswalks, drainage improvements, traffic signal replacement, signage, pavement markings, curb and gutter replacement, landscaping, trees, new street lights, and street light fixture upgrades. In addition to roadway rehabilitation, a mixed use trail to accommodate bicycles and pedestrians will be included in the project. Estimated total cost revised from $11.9M to $12.9M based on updated construction cost estimates. Engineering funds for preliminary design were appropriated in FY 2021.	4 to 4 lanes, 2,050 ft	Exempt	2027	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore City	41st Street over I-83, MTA Light Rail Tracks, and Jones Falls	12-2002-13	The 1,238-foot long bridge was originally built in 1930 and was rehabilitated in 1986, but severe deterioration is now evident throughout and the structure must be evaluated to determine whether the bridge should be rehabilitated or replaced. The estimated total cost of $19.55 million assumes a bridge rehabilitation, which is substantially less expensive than a replacement. The existing sidewalks will be replaced with standard SHA and ADA compliant sidewalks. The existing lighting system will also be upgraded.	4 to 4 lanes, 1,238 ft	Exempt	2030	N/A
Baltimore City	Belair Road Complete Streets	12-1404-11	Design and construction for street, sidewalk, bike improvements and greening at key nodes on Belair Road, including Frankford Avenue, Erdman Avenue, and Fleetwood Avenue. This project is a major implementation item from the Urban Land Institute Belair Road report and BCDOT traffic study. FY 2022 engineering and FY 2024 construction funds are for Phase II, which includes the intersection of Belair Road and Erdman Avenue. Phase I, which includes the intersection of Belair Road and Frankford Avenue, was completed in February 2021. The year of operation of 2027 reflects the completion of Phase II. Phase III includes the intersection of Belair Road and Fleetwood Avenue. FY24 engineering funds are for preliminary design for Phase III work.	4 to 4 lanes	Exempt	2027	N/A

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Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore City	Brehms Lane over Herring Run	12-2005-13	The 92-foot long bridge was originally built in 1963, but severe deterioration is now evident throughout and the structure must be replaced. The existing sidewalks will be replaced with standard SHA and ADA compliant sidewalks. Total cost has increased as a result of additional work required due to continued deterioration and increased material costs.	2 to 2 lanes, 92 ft	Exempt	2028	N/A
Baltimore City	Capital Project Delivery Services	12-1901-99	The purpose of this project is to provide the technological and project management improvements needed to support the design and construction phases of CIP projects. The TIP funding will be used for project delivery services of capital federal-aid roadway projects. This program was initiated in FY 2019.	NA	Exempt	Ongoing	N/A
Baltimore City	Citywide Asset Management	12-2003-19	This project is for activities related to the development and implementation of a performance based management program for Baltimore City federal-aid roadways. Local funds will be used for roads that are not federal-aid eligible. These activities will include, but are not limited to data collection, condition assessment, condition index rating for prioritization rankings, road treatments, licensing software and equipment required for risk-based asset management.	NA	Exempt	Ongoing	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore City	Citywide Traffic Signals, Intelligent Transportation System and Safety Improvements	12-1218-07	This project includes signal and traffic improvements citywide which may include but are not limited to: traffic signal system upgrades, ITS and system integration, traffic signal timing optimization, traffic surveillance camera expansion, traffic signal replacements and upgrades, communications equipment including fiber optic, copper and wireless, variable message signs, vehicular and pedestrian detector upgrades, intersection improvements, signs and marking. Projects included in this TIP ID are: 1) CCTV and signal rewiring citywide, 2) installation of fiber optic and copper communications citywide, 3) ITS deployment and upgrades citywide, 4) geometric improvements at multiple intersections, 5) traffic signal reconstruction, and 6) traffic signal timing optimization. Engineering and planning funds for the traffic signal timing optimization project were included in FY 2022.	NA	Exempt	Ongoing	N/A
Baltimore City	Communication Upgrades - Wireless	12-2304-07	Rehabilitate and upgrade aging and deteriorated signal & ITS (Intelligent Transportation System) communication network.	NA	Exempt	2028	N/A
Baltimore City	Frederick Avenue ADA Upgrades (Brunswick to S. Pulaski)	12-2303-25	Upgrade ADA pedestrian facilities including curb ramps, sidewalks, removal of obstructions to provide compliant ADA access from Brunswick Street to S. Pulaski Street to the transit transfer stops along Frederick Ave.	4 lanes to 4 lanes; 0.66 miles	Exempt	2028	N/A

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Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore City	Fremont Avenue Rehabilitation from Lafayette Avenue to Presstman Street	12-2007-11	Roadway rehabilitation work includes concrete roadway slab replacement, concrete type I and type II repair, full depth base repair, milling, paving, ADA compliant sidewalks, pedestrian ramps, crosswalks, drainage improvements, traffic signal replacement, signage, pavement markings, curb and gutter replacement, landscaping, trees, new street lights, and street light fixture upgrades. The project will also include pedestrian safety improvements. Engineering funds for preliminary design were appropriated in FY 2021. The estimated total cost has been revised from $9 million to $8.023 million to reflect the actual costs of preliminary design and proposed final design costs, and estimated construction costs.	2 to 2 lanes, 2500 ft	Exempt	2027	N/A
Baltimore City	Greenway Middle Branch Phase 2	12-2102-03	The Middle Branch Phase 2 project involves the construction of a 0.8 mile trail as part of the Baltimore Greenway Loop that connects Baltimore City's major parks. The trail will serve both pedestrians and cyclists. The type of facility varies between an off-street shared-use trail and an on-street cycle track. The facility will be two-way through the project limits. Engineering was funded with a FY 2019 discretionary grant through the Surface Transportation Block Grant program set-aside for Transportation Alternatives.	0.8 miles	Exempt	2025	N/A

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Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore City	Howard Street over I-83, CSX, Amtrak, and Jones Falls	12-2009-13	The 979-foot long bridge was originally built in 1938 and was rehabilitated in 1981, but severe deterioration is now evident throughout and the structure must be studied for either rehabilitation or replacement. The estimated total cost of $49.45 million assumes a bridge replacement, which is substantially more expensive than a rehabilitation. The existing sidewalks will be replaced with standard SHA and ADA compliant sidewalks. The existing lighting system will also be upgraded.	5 to 5 lanes, 979 ft	Exempt	2030	N/A
Baltimore City	I-83 Concrete Deck Mill and Resurface	12-1604-13	This work will include but will not be limited to rehabilitating the deteriorating concrete decks of the bridges with new wearing surfaces that meet current standards. The limits of this project are between Exit 1 and Exit 10. Engineering funds for this project were authorized in FY 2020.	6 to 6 lanes	Exempt	2026	N/A
Baltimore City	Madison Street Rehabilitation from North Milton Avenue to Edison Highway	12-2010-11	Roadway rehabilitation work includes concrete roadway slab replacement, concrete type I and type II repair, full depth base repair, milling, paving, ADA compliant sidewalks, pedestrian ramps, crosswalks, drainage improvements, traffic signal replacement, signage, pavement markings, curb and gutter replacement, landscaping, trees, new street lights, and street light fixture upgrades. Pedestrian improvements include bump outs for shorter crossings and improved crosswalks/intersections. Engineering funds for preliminary design were appropriated in FY 2021.	2 to 2 lanes, 2700 ft	Exempt	2027	N/A

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Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore City	Monroe Street Ramp over CSX and Russell Street over CSX	12-1801-13	This project will replace the bridges carrying the Monroe Street ramp and Russell Street over CSX (sufficiency ratings of 47.8 and 41.2). This replacement includes full depth concrete pavement replacement as well as water, conduit, and BGE. The Monroe Street ramp bridge carries traffic from the southbound I-95 off ramp onto southbound MD 295. The Russell Street bridge carries traffic northbound and southbound into and out of Baltimore City to MD 295. Engineering funds for this project were authorized in FY 2012 under TIP ID #12-1030-13 (citywide bridge).	2 to 2 lanes, .53 miles	Exempt	2031	N/A
Baltimore City	Moravia Road Ramp Bridge over Pulaski Highway	12-1605-13	This work will include but will not be limited to rehabilitating the existing deteriorated bridge with new bridge components that meet current standards.	4 to 4 lanes	Exempt	2029	N/A
Baltimore City	Northern Parkway at Falls Road Traffic Safety and Bike Facility Improvements	12-2301-39	This project seeks to construct the following: 1. A protected bicycle facility on Falls Road between Northern Parkway and Coldspring Lane 2. Provide geometric safety improvements at the intersection of Northern Parkway at Falls Road	4 lanes to 3; 1.3 miles	Exempt	2027	N/A
Baltimore City	Orleans Street Bridge over I-83 and City Streets	12-1601-13	This work will include but will not be limited to rehabilitating the deteriorated bridge with structural improvements, cleaning and painting of the steel elements, replacing and reconfiguring the storm drain system and other repairs in order to correct the deteriorated components of the bridge. The sidewalk along the south side of the bridge will remain in place.	6 to 6 lanes, 1728 feet	Exempt	2028	N/A

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Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore City	Park Heights Avenue from West Rogers Avenue to Strathmore Avenue	12-2011-11	Roadway rehabilitation work includes concrete roadway slab replacement, concrete type I and type II repair, full depth base repair, milling, paving, ADA compliant sidewalks, pedestrian ramps, crosswalks, drainage improvements, traffic signal replacement, signage, pavement markings, curb and gutter replacement, landscaping, trees, new street lights, and street light fixture upgrades. Engineering funds for preliminary design were appropriated in FY 2021.	4 to 4 lanes, 4100 ft	Exempt	2027	N/A
Baltimore City	Pennington Avenue Rehabilitation from Birch Street to East Ordnance Road	12-2013-11	Roadway rehabilitation work includes concrete roadway slab replacement, concrete type I and type II repair, full depth base repair, milling, paving, ADA compliant sidewalks, pedestrian ramps, crosswalks, drainage improvements, traffic signal replacement, signage, pavement markings, curb and gutter replacement, landscaping, trees, new street lights, and street light fixture upgrades. ADA compliant sidewalks will be added where there are no existing sidewalks. Engineering funds for preliminary design were appropriated in FY 2021. The total estimated cost has been revised from $8.5M to $7.65M to reflect updated construction cost estimates.	4 to 4 lanes, 3500 ft	Exempt	2027	N/A
Baltimore City	Perring Parkway Ramp over Herring Run	12-1215-13	This project includes replacement of the Perring Parkway ramp over Herring Run. Engineering for this project was originally authorized in FY 2016.	4 to 4 lanes	Exempt	2025	N/A

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Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore City	Radecke Avenue and Sinclair Lane over Moores Run	12-1603-13	This project includes replacement of the deteriorated bridge on Radecke Avenue with a new structure that will meet current standards. The existing sidewalks will be replaced with standard SHA and ADA compliant sidewalks. Engineering for this bridge was authorized in FY 2019. The project scope has expanded to include rehabilitation of the Sinclair Lane bridge over Moores Run. The existing beams and deck will be removed and replaced. Engineering funds for this bridge were authorized in FY 2021. The two bridges are in close proximity to each other and will advertise for construction as one project in FY 2024. This will result in less disruption to the community and a greater cost savings to Baltimore City.	2 to 2 lanes	Exempt	2030	N/A

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Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore City	RAISE Transit Priority Project	12-2201-64	The RAISE Transit Priority Project (Formerly: East-West Priority Corridor) proposes a comprehensive suite of investments that will facilitate more efficient transit trips, improve multi-modal connections, and address existing safety issues. This project applies strategies from the Transit Priority Toolkit to directly address existing challenges in the corridor, offering near-term investments to better connect people to jobs, education, amenities, and leisure activities while the region considers long-term options via the Regional Transit Plan. Planned strategies include dedicated bus lanes, peak only bus lanes, intersection queue jump for buses, transit signal priority, bus stop optimization, accessibility improvements, and bus bulbs. The corridor is currently served by multiple bus routes, including both the CityLink Blue and Orange. The state of Maryland is providing matching funds for this project.	10.5 miles of roadways, existing number of lanes maintained	Exempt	2025	N/A
Baltimore City	Remington Avenue Bridge over Stony Run	12-1602-13	This work will include but will not be limited to rehabilitating the deteriorating bridge so that it meets current standards. The existing sidewalks will be replaced with standard SHA and ADA compliant sidewalks. Engineering for this project was authorized in FY 2016.	2 to 2 lanes	Exempt	2024	N/A
Baltimore City	Russell Street Pavement Rehabilitation from Russell Street Viaduct to City Line	12-2302-11	Roadway rehabilitation work includes concrete roadway slab replacement, concrete type I and type II repair, full depth base repair, milling, paving, curb and gutter replacement, sidewalk repair, streetlight fixture upgrade, new signage, and pavement marking.	6 lanes to 6 lanes, 2.1 miles	Exempt	2027	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore City	Sisson Street Bridge over CSX Railroad	12-1216-13	The 133-foot long bridge was originally built in 1914 and was rehabilitated in 1950, but severe deterioration is now evident throughout and the structure must be replaced. The existing sidewalks will be replaced with standard SHA and ADA compliant sidewalks.	2 to 2 lanes	Exempt	2026	N/A
Baltimore City	Transportation Management Center Upgrade	12-1701-04	This project will upgrade the central computer system or Advance Traffic Management System (ATMS) along with field controllers and integrate the system with controllers and ITS devices to effectively and safely manage traffic. The system may include but is not limited to software, computer hardware, servers, switches and communications equipment. The current ATMS, known as an i2 System is more than 15 years old and has been discontinued by the vendor. Replacement with a new system requires a complete upgrade of hardware and software, replacement of field controllers, and installation of communications equipment for field devices.	NA	Exempt	2027	N/A
Baltimore City	Waterview Avenue over Ramp to 295	12-2015-13	The 75-foot long bridge was originally built in 1950, but severe deterioration is now evident throughout and the structure must be evaluated to determine whether the bridge should be rehabilitated or replaced. The estimated total cost of $6 million assumes a bridge replacement, which is substantially more expensive than a rehabilitation. The existing sidewalks will be replaced with standard SHA and ADA compliant sidewalks.	4 to 4 lanes, 75 ft	Exempt	2027	N/A
Baltimore County	Bridge Inspection Program	13-8901-14	This project includes countywide inspection of all bridges as federally mandated as well as review of countywide bridge inspection reports.	NA	Exempt	Ongoing	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore County	Dogwood Road Bridge No. B-0072 Over Dogwood Run	13-0001-13	This project is for the total replacement of the existing bridge. The new structure will carry two traffic lanes and one 3 foot shoulder and one 6 foot shoulder. The year of operation has been delayed from 2023 to 2024 due to delays in right of way acquisition. Engineering funding was included in the FY 2013 TIP.	2 to 2 lanes	Exempt	2024	N/A
Baltimore County	Golden Ring Road Bridge No. B-0110 over Stemmers Run	13-1208-13	This project includes replacement of the bridge carrying Golden Ring Road over Stemmers Run. The proposed bridge will have minimum 2 foot shoulders. Shoulder widths and sidewalks will be evaluated during preliminary design. The anticipated cost of the project has been revised (3-2022) to reflect the currently anticipated scope of work (full replacement addressing local flooding issue).	2 to 2 lanes	Exempt	2027	N/A
Baltimore County	Hammonds Ferry Road Bridge No. B-0100 over CSX Railroad	13-1012-13	This project includes replacing the deck and superstructure, and rehabilitation of the overall structure. The existing bridge has two 5-foot wide sidewalks and two 6-foot shoulders. The new structure will continue to have 5-foot sidewalks and 6-foot shoulders.	2 to 2 lanes	Exempt	2024	N/A
Baltimore County	Peninsula Expressway Bridge No. B-0119 over CSX Railroad	13-1108-13	This project includes rehabilitation or replacement of the dual bridge carrying Peninsula Expressway over CSX railroad tracks. Both structures currently have 3 foot wide shoulders on both sides. The new structures will contain 4 foot inside shoulders and 10 foot outside shoulders. No sidewalks will be included.	4 to 4 lanes	Exempt	2026	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore County	Rossville Boulevard Bridge No. B-0132 over Amtrak & Orems Road	13-1701-13	This project includes rehabilitation of the bridge carrying Rossville Boulevard over Amtrak Railroad & Orems Road. The proposed bridge will have 5 foot wide sidewalks along both sides of the deck. Shoulder widths will be evaluated during preliminary design.	4 to 4 lanes	Exempt	2027	N/A
Carroll County	Bridge Inspection Program	14-9401-14	This project includes a field inspection of 135 county owned and maintained structures and completion and submittal of inspection reports to county and state agencies for each structure. The escalated total cost has been updated from $1,390,000 to $1,510,000 in 2023 to account for escalation and inflation.	NA	Exempt	Ongoing	N/A
Carroll County	Brown Road Culvert over Roaring Run	14-2102-13	This project includes replacement of a 3-cell corrugated steel pipe arch. The replacement structure type, geometry, and lane use configuration will be determined during initial design.	2 to 2 lanes	Exempt	2026	N/A
Carroll County	Gaither Road Bridge over South Branch Patapsco River	14-1602-13	This project includes rehabilitation of the existing bridge with a new superstructure (type TBD) to provide efficient access for local traffic and emergency service vehicles. The bridge geometry and lane configuration will be determined during initial design.	2 to 2 lanes	Exempt	2029	N/A
Carroll County	Hughes Shop Road Bridge over Bear Branch	14-1802-13	This project includes replacement of the existing bridge with a new structure. The new bridge will be a single span, 50'-0" long, adjacent prestressed concrete slab bridge with two 9'-0" lanes and two 2'-4" shoulders. Engineering funds through the NEPA process were previously authorized. FY 2022 engineering funds will complete final design.	1 to 2 lanes	Exempt	2025	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Carroll County	McKinstrys Mill Road Bridge over Sam's Creek	14-1603-13	This project includes replacement of the existing bridge to provide efficient access for local traffic and emergency service vehicles. The new bridge will be a single span, 36'-0" long, adjacent prestressed concrete slab bridge with two 10' lanes and shoulders that vary in width from 1-6 to 3-2.	2 to 2 lanes	Exempt	2025	N/A
Carroll County	McKinstrys Mill Road over Little Pipe Creek	14-2103-13	This project includes replacement of a single span steel beam bridge. The replacement structure type, geometry, and lane use configuration will be determined during initial design.	2 to 2 lanes	Exempt	2027	N/A
Carroll County	Old Kays Mill Road Culvert over Beaver Run	14-2101-13	This project includes replacement of a 3-cell riveted steel structure plate pipe arch. The replacement structure type, geometry, and lane use configuration will be determined during initial design.	2 to 2 lanes	Exempt	2029	N/A
Carroll County	Patapsco Road Bridge over East Branch Patapsco River	14-2201-13	This project includes replacement of the existing 1-span bridge with a new structure, including abutments. The new structure will consist of two 10' travel lanes and two 4'-4" shoulders, which is slightly wider than the existing structure. The replacement structure type and geometry will be developed as the design progresses.	2 to 2 lanes	Exempt	2025	N/A
Carroll County	Stone Chapel Road Bridge over Little Pipe Creek	14-1103-13	This project includes replacement of the existing bridge to provide efficient access for local truck traffic to MD 31. The new bridge will be a single span, 27'-0" long, adjacent prestressed concrete slab bridge with two 11' lanes and two 4'-4" shoulders.	2 to 2 lanes	Exempt	2025	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Carroll County	Upper Beckleysville Road Bridge over Murphy Run	14-2202-13	This project includes replacement of the existing 1-span bridge. The new bridge will be a single span bridge (type TBD) with two 12'+/- travel lanes. The replacement structure type, geometry, and lane use configuration will be determined during initial design. Engineering for this project was funded in FY23.	2 to 2 lanes	Exempt	2024	N/A
Harford County	Bridge Painting	15-2404-14	This federal program provides funding to paint bridges in Harford County	NA	Exempt	Ongoing	N/A
Harford County	Cullum Road Bridge #12 over Tributary of James Run	15-2401-13	This project will be for the rehabilitation of the Cullum Road Bridge #12 over tributary to James Run. The project is to replace the bridge superstructure which currently consists of bituminous concrete filled corrugated metal deck supported with steel beams.	2 to 2 lanes	Exempt	2031	N/A
Harford County	Abingdon Road Bridge #169 over CSX Railroad	15-1001-13	This project includes replacement of the bridge that carries Abingdon Road over the CSX Railroad tracks. A five foot sidewalk is planned on one side of the road. Five foot shoulders are planned on both sides of the bridge. Engineering funds through NEPA approval and structural approval were authorized in FY 2021. FY 2024 engineering funds are to complete final design.	2 to 2 lanes	Exempt	2026	N/A
Harford County	Bridge Inspection Program	15-9411-14	This federal program provides funding for the inspection of bridges in Harford County.	NA	Exempt	Ongoing	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Harford County	Grier Nursery Road Bridge #43 over Deer Creek	15-2001-13	This project includes replacement of the entire superstructure for the Grier Nursery Road bridge over Deer Creek. The bridge will not include sidewalks but will include shoulders (width TBD during engineering). Engineering funds through NEPA were authorized in fall 2020. FY 2023 engineering funds are for completion of final design.	2 to 2 lanes	Exempt	2027	N/A
Harford County	Hess Road Bridge #81 over Yellow Branch	15-2202-13	This project includes replacement of bridge #81 carrying Hess Road over Yellow Branch. Shoulders will be included as part of the bridge replacement (width to be determined during preliminary engineering). Sidewalks will not be included on the bridge. The estimated total cost includes only the cost of engineering and will be updated when the scope of work is fully defined.	2 to 2 lanes	Exempt	2029	N/A
Harford County	Hookers Mill Road Bridge #13 over Bynum Run	15-2002-13	This project includes replacement of the entire bridge that carries Hookers Mill Road over Bynum Run. The design is anticipated to include a 30-foot clear roadway consisting of two 11-foot travel lanes and two 4-foot shoulders. 5-foot sidewalks will be pl	2 to 2 lanes	Exempt	2028	N/A
Harford County	Moores Road Bridge #78 over a tributary to Gunpowder Falls	15-2201-13	This project includes replacement of the entire structure carrying Moores Road over a tributary to Gunpowder Falls. The inclusion of sidewalks and shoulders will be determined during engineering. The project also includes realignment of the approach roadways for improved safety.	2 to 2 lanes	Exempt	2028	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Harford County	St. Clair Bridge Road Bridge #100 over Deer Creek	15-2102-13	This project includes replacement of the deck of the bridge carrying St. Clair Bridge Road over Deer Creek. The bridge will not include sidewalks but will include shoulders on each side of the roadway (width TBD during engineering). Previous cost only included preliminary design. This cost includes design and construction costs. The estimated total cost has been updated to reflect the full scope of work.	2 to 2 lanes	Exempt	2030	N/A
Harford County	Stafford Road Bridge #162 over Buck Branch	15-2103-13	This project includes replacement of the deck of the bridge carrying Stafford Road over Buck Branch. The scope of work includes replacement of the superstructure as the superstructure is rated in fair condition. The bridge will not include sidewalks but will include shoulders on each side of the roadway (width TBD during engineering). The previous cost only included preliminary design. This cost includes design and construction costs. The estimated total cost has been updated to reflect the full scope of work.	2 to 2 lanes	Exempt	2030	N/A
Harford County	Trappe Church Road Bridge #161 over Hollands Branch	15-2104-13	This project includes full replacement of the of the bridge carrying Trappe Church Road over Hollands Branch. The bridge will not include sidewalks but will include shoulders on each side of the roadway (width TBD during engineering). The Estimated Total Cost has increased$450,000 as a result of the addition of final design costs and inspection fees.	2 to 2 lanes	Exempt	2028	N/A
Howard County	Patapsco Regional Greenway: Elkridge to Guinness Open Gate Brewery	16-2301-03	The Patapsco Regional Greenway: Elkridge to Guinness Open Gate Brewery project involves construction of a 1.5 segment of the overall Patapsco Regional Greenway trail. This 10-12 foot wide trail will be a combination of on-street facilities, hard surface trail, bridges and boardwalks.	1.5 mile trail	Exempt	2026	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Howard County	Bridge Repair and Deck Replacement	16-0436-13	This is an ongoing program to provide upgrades and maintenance of structures on Howard County Roadways. These are non-capacity improvements which may include but are not limited to bridge rehabilitation and replacement, painting, structural repairs, and general maintenance on various Howard County bridges.	Varies	Exempt	Ongoing	N/A
Howard County	Replacement of Bridge No. HO-040 on Union Chapel Road over Cattail Creek	16-2201-13	This project includes the replacement of bridge number HO-040 on Union Chapel Road over Cattail Creek. Bridge width, sidewalks and shoulders will be evaluated during engineering.	2 to 2 lanes	Exempt	2026	N/A
Maryland Port Administration	Dundalk Marine Terminal Resiliency and Flood Mitigation Improvements	30-2101-82	The project will provide critical flood protection improvements at Dundalk Marine Terminal. The project will install tide gates to prevent storm surges from flowing back through the drains onto the terminal; installing a perimeter barrier to prevent storm surges from overtopping the berths; and constructing a new box culvert with lateral drains to deal with extreme rain events.	NA	Exempt	2026	N/A
Maryland Port Administration	Howard Street Tunnel	32-2101-83	The project consists of reconstructing the 126-year-old Howard Street Tunnel in Baltimore and improving the vertical clearance at 21 bridges between Baltimore and Philadelphia to create a double-stack rail corridor to and from the Port of Baltimore and along the entire East Coast.	1.7 miles	Exempt	2025	N/A

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Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Maryland Port Administration	Masonville Cove Connector: Shared Used Path Design and Construction	32-2301-03	This project includes design and construction of a shared use path along Frankfurst Avenue in Baltimore City. The trail is expected to span between Masonville Cove, which is the Nations first Urban Wildlife Refuge Partnership, and Hanover Street. At Hanover Street, the trail will link to the existing Gwynns Falls Trail and proposed Bay Brook Connector for over 20 miles of trail access. This project was identified as a part of the alternative multimodal transportation feasibility study which concluded in 2018 and was included in the 2017-2020 TIP utilizing FHWA Federal Lands Access Program Funds. As a part of the design process, stakeholder coordination, environmental coordination including National Environmental Policy Act, surveys, utility coordination, roadway design, traffic maintenance, and landscape design will be conducted. Right of way coordination will also be conducted along the planned trail.	2-mile trail	Exempt	2025	N/A
Maryland Port Administration	Port of Baltimore Rail Capacity Modernization Project	30-2301-83	The Intermodal Container Transfer Facility (ICTF) sits adjacent to Seagirt Marine Terminal. The project will remove some existing track and install two crane beam rails to support an electric rail mounted gantry crane and install four new working tracks. The project is being supported by a Consolidated Rail Infrastructure and Safety Improvement (CRISI) grant from the Federal Railroad Administration along with private funding from Ports America Chesapeake.	NA	Exempt	2026	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
MTA - Commuter Rail	MARC Facilities	70-1503-55	1) MARC Martin State Airport Purchase private property & construct 2 additional storage tracks. 2) MARC BWI Garage Facility- Identify and prioritize needed repairs which are then designed and constructed 3) Construction of Riverside Heavy Maintenance Facility. 4) Renovation of MARC's Odenton, Elkton, and Bayview Stations. Note: In addition to the matching funds listed, MTA has committed $25.5 million in state dollars.	NA	Exempt	Ongoing	N/A
MTA - Commuter Rail	MARC Improvements	70-1502-54	This project provides funding to implement ongoing improvements derived from the MARC Master Plan and Amtrak/CSX Operating Agreements. In addition to the matching funds listed, MTA has committed $24 million in state dollars.	NA	Exempt	Ongoing	N/A
MTA - Commuter Rail	MARC Rolling Stock Overhauls and Replacement	70-1501-53	This is an ongoing project for the overhaul and replacement of MARC rolling stock. The overhaul of MARC coaches and locomotives is performed in accordance with "10-year minor" and "20-year midlife" schedules and/or the manufacturer's schedule. MARC vehicles will be upgraded with federally-mandated Positive Train Control safety features. In addition to the matching funds listed, MTA has committed $19.9 million in state dollars.	NA	Exempt	Ongoing	N/A
MTA - Transit	Agencywide System Preservation and Improvement	40-1801-64	This is an ongoing project to rehabilitate agency-wide facilities, systems, and infrastructure. Rehabilitation projects include roofing and pavement for facilities, a system network migration and upgrade, system-wide escalators, and modernization of 40 elevators system-wide. In addition to the matching funds listed, MDOT MTA has committed $139 million in state dollars.	NA	Exempt	Ongoing	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
MTA - Transit	Bus and Paratransit Vehicle Overhaul and Replacement	40-1802-05	This project provides for routine replacement of buses past their useful service life. Planned purchases include 310 forty-foot clean diesel buses and 40 sixty-foot clean diesel articulated buses. MDOT MTA continuously receives deliveries of buses for MTA service. MDOT MTA also proactively repairs and replaces bus components at key points in the vehicles life, including the engine, battery, brakes, suspension, body, paint, and wheelchair/ADA, electrical, pneumatic systems, and other components as needed. Batteries in hybrid electric buses batteries near the end of their useful life will be replaced. This project also covers the purchase of paratransit vehicles under MTA's Mobility program which is a specialized door-to-door service for people with disabilities who are not able to ride fixed route public transportation, including lift equipped buses. In addition to the matching funds listed, MTA has committed $88 million in state dollars.	NA	Exempt	Ongoing	N/A
MTA - Transit	Bus and Rail Preventive Maintenance	40-1204-64	This project provides preventative maintenance on the Bus, Light Rail and Metro systems to improve safety, reliability and passenger comfort.	NA	Exempt	Ongoing	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
MTA - Transit	Eastern Bus Facility	40-2301-65	The purpose of this project is to re-develop Eastern Bus Division as an electric bus division. Assuming a 190 bus fleet, construction would take >4 years. This facility would provide a single building with 110,000 square feet of combined maintenance, washing, fueling, and bus operations space. Major facility components include bus parking (190 buses), employee parking (216 spaces), battery electric bus charging infrastructure, solar energy collection system, administrative offices, conference rooms, training rooms, dispatch facilities, fuel lanes (2), wash lanes (2), vaulting, repair bays (16-18), general machine shop, parts storage, break room, restrooms/showers, fuel storage and storm water management. Note: In addition to the matching funds listed, MDOT MTA has committed $106 million in state dollars.	NA	Exempt	2026	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
MTA - Transit	Metro and Light Rail Rolling Stock Overhauls and Replacement	40-1804-63	Mid-life Overhaul of 53 Light Rail Vehicles and upgrades to various systems/sub-systems to address obsolete parts, improve safety and vehicle performance, and enhance passenger comfort. The overhaul has been engineered to provide an additional 15 years of service of the light rail vehicle fleet. Metro cars were designed with a 30 year life and are due for replacement. The Automatic Train Protection system is experiencing reliability issues due to its age and obsolete parts thus increasing maintainability issues across its various systems/sub-systems. The replacement of Metro Cars and Train Control System with modern, reliable equipment will enhance passenger comfort, ensure better reliability and improve safety. Delays were a result of Covid such as material delivery, sub-suppliers, internal Alstom impacts and plant shutdown. In addition to the matching funds listed, MTA has committed $106 million in state dollars.	NA	Exempt	Ongoing	N/A
MTA - Transit	Metro and Light Rail System Preservation and Improvement	40-1805-64	This is an ongoing project to rehabilitate Light Rail and Metro facilities, infrastructure, track, and equipment, including replacing interlockings, repairing tunnel liners and doors, and the design and installation of new fiber optic cables. In addition to the matching funds listed, MTA has committed $220 million in state dollars.	NA	Exempt	Ongoing	N/A
MTA - Transit	Ridesharing - Baltimore Region	40-9901-01	The ridesharing project covers the activities of the ridesharing program in all jurisdictions in the Baltimore region, including the Guaranteed Ride Home (GRH) Program. Entities eligible to receive funding include Baltimore City, the Baltimore Metropolitan Council, and Anne Arundel, Howard, and Harford counties.	NA	Exempt	Ongoing	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
MTA - Transit	Rural Transit Systems - Operating Assistance	40-9204-61	This project provides operating assistance to transit systems located in the Baltimore region. Transit agencies eligible for funding include Baltimore County (Baltimore County Office of Aging) and Carroll Transit System. Costs generally associated with operating assistance can include utilities, miscellaneous equipment, fuel/oil, and driver, maintenance staff, and administrative salaries.	NA	Exempt	Ongoing	N/A
MTA - Transit	Seniors and Individuals with Disabilities	40-1502-69	This project provides capital and operating assistance to non-profit agencies who provide transportation services for the elderly and individuals with disabilities. Non-profit recipients are determined through a competitive selection process and based upon the Baltimore Area Coordinated Public Transit - Human Services Transportation Plan.	NA	Exempt	Ongoing	N/A
MTA - Transit	Small Urban Transit Systems - Capital Assistance	40-9502-05	Capital assistance to small urban transit systems throughout the region to purchase vehicles, equipment, and facilities. The Baltimore region's small urban transit system includes Carroll Transit System, Anne Arundel County, The City of Annapolis, and Howard County. Planned purchases include 2 small bus replacements, a mini van replacement, 2 heavy duty bus replacements, and continued preventative maintenance.	NA	Exempt	Ongoing	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
MTA - Transit	Small Urban Transit Systems - Operating Assistance	40-0104-61	Operating assistance to urban transit systems throughout the Aberdeen/Bel Air North/Bel Air South urbanized area. Transit agencies eligible for funding include Harford County. Costs generally associated with operating assistance can include utilities, miscellaneous equipment, fuel/oil, and driver, maintenance staff, and administrative salaries.	NA	Exempt	Ongoing	N/A
MTA - Transit	Urban Transit Systems - Capital Assistance	40-1602-05	Capital assistance for the purchase of vehicles, equipment, and facilities, for Harford County (Harford County Transportation Services). Planned purchases include vehicle replacement along with continued preventive maintenance.	NA	Exempt	Ongoing	N/A
MTA - Transit	Urban Transit Systems - Operating Assistance	40-1603-61	This project provides operating assistance to urban transit systems throughout the Aberdeen/Bel Air North/Bel Air South urbanized area. Transit agencies eligible for funding include Harford County. Costs generally associated with operating assistance can include utilities, miscellaneous equipment, fuel/oil, and driver, maintenance staff, and administrative salaries.	NA	Exempt	Ongoing	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
MTA - Transit	Zero Emission Infrastructure and Rolling Stock	40-2302-63	MTA will use an alternative procurement process for a Contractor to procure, install, operate & maintain new electric charging infrastructure for both Kirk & Northwest bus depots. Contractor will provide turn-key design, installation, implementation, commissioning and O&M for the service equipment infrastructure needed so that BEBs can be placed into service upon delivery; Provide O&M services so that the BEBs at both Depots are fully charged at scheduled pull-out times; Provide charge mgt. services to support BEB and EVSE data collection, monitoring the performance of the EVSE, and managing energy use such that MTA can manage the BEBs in an efficient and cost-effective manner; Provide real-time and historical data regarding in-service BEB operations & daily bus charging events and minimizing monthly charging costs. In addition to the matching funds listed, MDOT MTA has committed $72.5 million in state dollars.	NA	Exempt	2026	N/A
Office of the Secretary	State Safety Oversight	90-1401-39	The Maryland Department of Transportation (MDOT) intends to use these Section 5329 Funds to provide administrative expenses for training, consultant services and miscellaneous equipment to oversee MTAs Light Rail and Metro systems and its operations in the Baltimore, Maryland metropolitan area.	NA	Exempt	Ongoing	N/A
SHA	Areawide Bridge Replacement And Rehabilitation	60-9310-13	This is an ongoing program to provide major upgrades and maintenance of structures on State highways. These are non-capacity improvements which may include but are not limited to structural replacements, deck rehabilitation, superstructure replacements, parapet reconstruction, cleaning and painting, and general maintenance on various state-owned bridges.	NA	Exempt	Ongoing	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
SHA	Areawide Congestion Management	60-9504-04	This is an ongoing program to provide traffic control, management, and monitoring on State highways. These improvements may include but are not limited to the employment of variable message signs, video for traffic management (CCTV), traffic management detectors, signal systemization and remote timing, permanent congestion monitoring systems employed by the CHART program, deployment of local jurisdiction intelligent transportation system (ITS) projects, and the development of park-and-ride facilities.	NA	Exempt	Ongoing	N/A
SHA	Areawide Environmental Projects	60-9506-38	This is an ongoing program to provide environmental and aesthetic improvements on MDOT SHA's highway network. These non-capacity improvements may include but are not limited to noise abatement, wetland management and rehabilitation, reforestation, landscaping, scenic beautification, and bicycle and pedestrian facilities.	NA	Exempt	Ongoing	N/A
SHA	Areawide Resurfacing And Rehabilitation	60-9501-11	This is an ongoing program to provide periodic resurfacing and upgrading of auxiliary features on State highways. These are non-capacity improvements which may include but are not limited to milling, patching, sealing, and resurfacing of existing deteriorated state roadways. Other improvements such as ADA or guardrail may be included incidental to other resurfacing and rehabilitation improvements.	NA	Exempt	Ongoing	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
SHA	Areawide Safety And Spot Improvements	60-9508-19	This is an ongoing program to provide localized improvements to address safety and/or operational issues on State highways. These are highway improvements which may include but are not limited to projects dealing with bypass lanes, acceleration and deceleration lanes, turn lanes, rail crossings, intersection realignment, geometric improvements, safety improvements including bridge, bicycle, and pedestrian safety improvements, pavement markers, ADA improvements, guardrails, and roundabouts. Other improvements such as slope repairs, drainage improvements, and joint sealing may be included incidental to other safety improvements.	NA	Exempt	Ongoing	N/A
SHA	Areawide Transportation Alternatives Projects	60-9903-29	This is an ongoing program to expand travel choices and enhance the transportation experience by improving the cultural, historic, and environmental aspects of the Baltimore region's transportation infrastructure. These improvements may include but are not limited to bicycle and pedestrian facilities; rehabilitation of historic transportation facilities such as railroads and canals; conversion and use of abandoned railroad corridors; archaeological activities related to transportation impacts; and mitigation of water pollution caused by highway runoff. This program also includes Safe Routes to School program projects and Recreational Trails program projects.	NA	Exempt	Ongoing	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
SHA	Areawide Urban Reconstruction	60-9511-19	This is an ongoing program to provide roadway rehabilitation and streetscape improvements on State highways in towns and urban areas. These are non-capacity highway improvements which may include but are not limited to projects dealing with drainage, curb and gutter, pavement milling and resurfacing, sidewalks, streetscapes, signs, and markings and lighting improvements.	NA	Exempt	Ongoing	N/A
SHA	I-695: Bridge Replacement on Putty Hill Avenue	63-2002-13	This project replaces bridge no. 0317400 on Putty Hill Avenue over I-695. The new bridge will maintain two 12' lanes and include 6' bicycle-compatible shoulders with 5'8" sidewalks on both sides of the bridge. The engineering and right-of-way phases for this project were originally funded as part of the Areawide Bridge Replacement and Rehabilitation project (60-9310-13). The estimated total cost of this project has increased due to additional utility relocation costs.	2 to 2 lanes	Exempt	2024	N/A
SHA	I-95/I-695 Interchange Bridge Deck Replacement	63-2202-13	This project includes replacing bridge decks with latex modified concrete deck overlays on 10 bridges within the I-95/I-695 Interchange. The following structures are included: SB I-95 over I-95 Ramp I, SB I-95 over I-695, I-95 Ramp G over I-695, NB I-95 over I-695, I-95 Ramp C over I-695, SB I-95 over I-695 Ramp C, NB I-95 over I-695 Ramps C & G, I-695 Ramp C over I-95 Ramp G, SB I-95 & Ramp D over Sulphur Spring Road and NB I-95 & Ramp H over Sulphur Spring Road. No widening is associated with any of the deck replacements. The use of 100% federal funding in FY 2024-2026 is enabled by toll credits.	Varies	Exempt	2025	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
SHA	MD 151/MD 151B: Bridge Replacements	63-2001-13	This project replaces bridge no. 0309900 on MD 151 and bridge nos. 0335100 and 0335000 on MD 151B. Bridge no. 0309900 will include an 8' outside shoulder and a 3' inside shoulder with a 5' sidewalk along the southbound roadway. Bridge no. 0335100 will include an 8' shoulder on both sides of the bridge with a 5' sidewalk along the northbound roadway. Bridge no. 0335000 will include a 5' outside shoulder and an 8' inside shoulder. No sidewalk is proposed for this bridge. Bridge work is anticipated to be completed in FY 2024. Utility work will continue into FY 2025.	#0309900 : 4 to 4; #0335100 : 2 to 2; #0335000 : 1 to 1	Exempt	2024	N/A
SHA	MD 173: Bridge Replacement over Rock Creek	61-2101-13	The project will replace bridge no. 0204600 over Rock Creek. The new bridge will maintain two 11' lanes along with 5' 5" bicycle compatible shoulders. Engineering began in 2015 using state only funds. Construction is not currently funded.	2 to 2 lanes	Exempt	TBD	N/A
SHA	MD 18B: Castle Marina Road to the Kent Narrows Corridor Study	67-2301-41	Planning study to identify multi-modal transportation needs and develop conceptual capacity and multi-modal improvements on MD 18B (Main Street) from Castle Marina Road to the Kent Narrows.	2.5 Miles	Exempt	TBD	N/A
SHA	MD 22: MD 462 to Mount Royal Avenue Noise Abatement	65-2301-31	This project will extend the existing noise barriers along both sides of MD 22 from MD 462 to Mount Royal Avenue. Construction funding will be programmed at a later date.	0.4 Miles	Exempt	2026	N/A
SHA	MD 24: South of Stirrup Run Culvert to Deer Creek Bridge, Section G	65-1601-12	MD 24 will be resurfaced and reconstructed including slope repair and guardrail replacement. This is the southern section (Section G) of MD 24, Rocks Road, from 900' south of Sharon Road to 1,700' north of Ferncliff Lane.	1.8 Miles	Exempt	2026	N/A
SHA	MD 32: 2nd Street to Main Street	64-2301-12	This project will improve intersection geometry, extend turn lanes, and modify access along MD 32 from 2nd Street to Main Street.	Lanes vary, 0.5 miles	Exempt	2026	N/A

Appendix C-1: Exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
SHA	MD 91: Bridge Replacements over North Branch of Patapsco River and MD Midland Railroad	64-2201-13	This project replaces bridge no. 06020 over the North Branch Patapsco River and bridge no. 06047 over the Maryland Midland Railroad. The bridges will carry two 12' lanes with 8' bicycle compatible shoulders.	2 to 2 lanes	Exempt	2024	N/A
SHA	MD 97: MD 140 to MD 496 Corridor Study	64-2302-41	Planning study to identify multi-modal transportation needs and develop conceptual safety and capacity improvements on MD 97 from MD 140 to MD 496.	2.4 miles	Exempt	TBD	N/A
SHA	Morgan State University Transportation Research Program	60-0702-99	Transportation research, education and technology transfer activities involving university faculty, staff and students.	NA	Exempt	Ongoing	N/A
SHA	TSMO System 1	60-2301-41	This project is a combination of information technology and geometric improvements within TSMO System 1 including I-70 from I-695 to MD 32, US 29 from I-695 to I-70, and US 40 from MD 99 to MD 100.	I-70: 11.7 miles, US 40: 10.5 miles, US 29: 3.5 miles	Exempt	2029	N/A
SHA	US 1: Bridge Replacements at Tollgate Road and Winters Run	65-2101-13	The project will replace bridge no. 12066 over Tollgate Road and bridge no. 12065 over Winters Run along US 1 in Bel Air. The bridge over Tollgate Road will maintain three 12' lanes with a 10' 6" shoulder on each side of the roadway. The bridge over Winters Run will maintain two 12' lanes with a 10' shoulder on one side of the roadway and a 19' 6" shoulder on the other side.	Tollgate Road: 3 to 3 lanes; Winters Run: 2 to 2 lanes	Exempt	2026	N/A

Appendix C-2: Non-exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Baltimore County	Mohrs Lane Bridge No. B-0143 over CSX Railroad	13-0803-13	This project will construct a new bridge carrying Mohrs Lane over the CSX rail line. The proposed bridge will accommodate 3 lanes of traffic and two 8 foot shoulders. In addition, Mohrs Lane will be widened for approximately 900' on the west approach and 400' on the east approach. The previous bridge was a single lane timber structure owned and maintained by CSX. Due to its deteriorated condition, the previous bridge was closed to traffic in 2007 and removed in 2011.	1 to 3 Lanes	Not Exempt	2026	2035
Harford County	Woodley Road Extension to MD 715	15-2403-14	This project will provide a connection from MD 715 to the existing terminus of Woodley Road. The proposed connection to MD 715 will provide a critical second access to the area. The majority of this road (approximately 11,100 feet) has already been constructed by the Eastgate development, leaving approximately 1,000 feet of road to complete the connection.	0 to 2 lanes, 1000 feet	Not Exempt	2026	2035
Harford County	Chesnut Hill Road Bridge #41	15-2402-13	This project will replace the existing bridge on Chesnut Hill Road over Cabbage Branch. The current structure is a single lane bridge is posted at 25,000 lbs for a single unit vehicle and 46,000 lbs for combination vehicles. The new bridge would eliminate posting and provide a new two lane bridge.	1 to 2 lanes	Not Exempt	2031	2035
Harford County	Glenville Road Bridge #30 over Mill Brook	15-1601-13	This project includes replacement of the bridge that carries Glenville Road over Mill Brook. Three foot shoulders are planned on both sides of the road. Engineering funds through NEPA were authorized in FY 2021.	1 to 2 lanes	Not Exempt	2026	2035

Appendix C-2: Non-exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Harford County	Madonna Road Bridge #113 over Deer Creek	15-2101-13	This project includes replacement of the entire bridge that carries Madonna Road over Deer Creek. The bridge will not include sidewalks but will include shoulders on each side of the roadway (width TBD during engineering). Engineering funds in FY 2022 are for preliminary engineering through the NEPA phase. FY 2023 engineering funds are for final design. Design has not started yet. Still waiting on the NTP.	1 to 2 lanes	Not Exempt	2029	2035
Howard County	Marriottsville Road and I-70 Bridge Improvements	16-2101-41	This project is to design and widen Marriottsville Road from just south of US 40 to MD 99 from two to four lanes, including replacing the existing two lane bridge on Marriottsville Road over I-70 with a four lane section. The proposed bridge will also include six feet wide bicycle lanes and ADA compliant sidewalks on both sides of the proposed bridge. The project is divided into four phases: *Phase I includes the widening of Marriottsville Road from I-70 to MD 99 (complete) *Phase II includes improvements to the ramp for I-70 eastbound (complete) *Phase III includes the widening of Marriottsville Road from US 40 to the I-70 bridge *Phase IV includes the construction of the I-70 bridge	1.5 miles, 2 to 4 lanes	Not Exempt	2025	2025

Appendix C-2: Non-exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Howard County	Snowden River Parkway: Broken Land Parkway to Oakland Mills Road	16-1410-41	This project will design and widen Snowden River Parkway by adding a third lane in each direction and shared-use paths from Broken Land Parkway to Oakland Mills Road. The project will incorporate ten-foot-wide shared-use pathways to increase transportation alternatives to activity centers and public transit. This project is funded through local funds (bonds, developer contributions, and excise tax-backed bonds). Estimated Total Cost increased as a result of refining cost estimates as design progresses.	4 to 6 lanes, 6300 feet	Not Exempt	2030	2035
Howard County	US 29/Broken Land Parkway Interchange and North South Connector Road	16-1901-42	The project will provide new direct connections from the westbound US 29/Broken Land Parkway interchange ramp to a new road (Merriweather Drive) and to Little Patuxent Parkway. The project will also provide a direct connection from Merriweather Drive to Broken Land Parkway, including configuring the north and southbound US 29 ramps at Broken Land Parkway into a signalized intersection. The project will also remove an existing ramp from Broken Land Parkway to US 29 southbound. The project will be funded locally through the recently approved tax increment financing (TIF) district.	3.1 miles of new lanes on ramps and new roadways	Not Exempt	2025	2025

Appendix C-2: Non-exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Maryland Transportation Authority	I-895/Baltimore Harbor Tunnel Toll Plaza and Interchange Improvements	22-2201-19	The I-895/Baltimore Harbor Tunnel Toll Plaza and Interchange Improvements Project includes the removal of the toll booths and installation of an overhead gantry at the I-895/Baltimore Harbor Tunnel Toll Plaza. The project will provide two lanes of barrier-separated mainline through-traffic in each direction along I-895 between the K-Truss bridge and the Baltimore Harbor Tunnel. In addition, a two lane barrier-separated collector distributor road will be installed in each direction adjacent to the mainline traffic lane between the I-895 interchanges with Frankfurst Avenue and Childs Street. The proposed mainline I-895 modifications include replacing and raising the I-895 bridge over Frankfurst Avenue, replacing the I-895 bridge over Childs Street, and removing the I-895 bridge over the toll facility campus storage area. The project is funded with MDTA toll revenues.	4 mainline lanes maintained, 4 new 0.7 mile CD lanes	Not Exempt	2028	2035

Appendix C-2: Non-exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Maryland Transportation Authority	I-95 Express Toll Lanes Northbound Extension	25-1801-41	The I-95 Express Toll Lanes (ETL) Northbound Extension project is the first phase of implementation of I-95 Section 200. The project is funded by MDTA toll revenues and includes the provision of 2 additional ETLs on I-95 from N. of MD 43 to N. of MD 24, a distance of 11+ miles. Tolls are expected to be collected automatically at highway speeds using E-ZPass or Video Tolling. The project also includes: reconstruction of the I-95 interchanges at MD 152 and MD 24 along with a 1.7 mile auxiliary lane between the interchanges; widening MD 24 from two to three lanes from MD 924 to north of Singer Road; ramps from I-695 (WB & EB) to NB ETL; reconstruction of the overpasses at Raphel, Bradshaw, Old Joppa, Clayton, and Abingdon roads; construction of 5 noise walls; widening the I-95 northbound bridges over the Big and Little Gunpowder Falls and Winters Run; environmental mitigation; and additional safety improvements.	11.25 miles, 6 to 8 lanes	Not Exempt	2027	2035

Appendix C-2: Non-exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
Maryland Transportation Authority	I-95 Fort McHenry Tunnel: Port Covington I-95 Access Study	22-1901-45	MDTA and Baltimore City have developed a suite of improvements to I-95 ramps and other nearby transportation facilities to support ongoing and planned redevelopment of the Port Covington peninsula in South Baltimore and to address traffic needs in the Port Covington area. The study limits for these improvements are Caton Avenue to the Fort McHenry Tunnel, involving approximately seven miles of I-95 and sections of Hanover Street, McComas Street and Key Highway. The total project cost is estimated to be $495 million, with completion anticipated in 2029. The first phase of this project was MDTA's funding and oversight of the projects planning, with a NEPA study that is anticipated to be complete in 2023. Future planning efforts will be funded by a private developer. MDTA construction funding is anticipated in FY 2025 and would be MDTA's match for a potential future INFRA Grant.	7 miles, 8 lanes	Not Exempt	2029	2035
Maryland Transportation Authority	I-95 Southbound Part-Time Shoulder Usage	25-2101-41	This project will provide for the part-time use of the 12' left shoulder along I-95 southbound between the Maryland House Travel Plaza to north of the MD 24 overpass. It requires restriping I-95 southbound lanes and pavement improvements to the left shoulder lane for approximately 3.9 miles in Harford County. The project will also include the installation of intelligent transportation systems (ITS) devices to deploy a new ITS system, including lane-use control gantries, closed-circuit television cameras, traffic detectors, and dynamic message signs. It will allow for the left shoulder to be dynamically opened and closed based on traffic conditions. The project is funded by MDTA toll revenues. Project was delayed by one year due to decreased revenues resulting from the pandemic. Cost has increased as design has progressed.	3.9 miles, 3 lanes + Left Shoulder	Not Exempt	2027	2035

Appendix C-2: Non-exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
SHA	I-695: I-70 to MD 43	63-1802-41	The purpose of this project is to utilize the inside shoulder to create a new travel lane on the inner and outer loops of I-695 during daily peak travel periods from I-70 to MD 43. This project primarily uses federal funding due to toll credits.	6 to 8 lanes, 19 miles	Not Exempt	2024	2025
SHA	I-695: Reconstruction of Interchange at I-70	63-2201-12	This project will reconstruct the interchange at I-695 and I-70 and replace the existing bridges within the interchange. The ultimate configuration will be determined through the design build process. The cost increase of approximately $72 million is due to the latest engineer's estimate. This project primarily uses federal funding due to toll credits.	TBD	Not Exempt	2027	2035
SHA	I-695: US 40 to MD 144	63-1601-41	This project will widen the I-695 outer loop from US 40 to MD 144 from three to four through lanes. This project will also accommodate the final configuration of this section of the beltway. The noise barrier on the inner loop will be replaced and extended from south of Shady Nook Avenue to US 40 as part of this project. The roadway opened to traffic in summer 2021. Construction of the noise barrier is underway and expected to be complete in 2024. Estimated Total Cost decreased as a result of lower costs for noise wall contract.	3 to 4 lanes, 1.2 miles	Not Exempt	2021	2025
SHA	I-795: Dolfield Boulevard Interchange	63-0803-46	Construct an interchange at Dolfield Boulevard including widening and operational improvements along I-795 from Owings Mills Boulevard (MD 940) to Franklin Boulevard. TSMO strategies, including part-time shoulder use, will be utilized.	Full Interchange	Not Exempt	2031	2035

Appendix C-2: Non-exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
SHA	I-97: US 50 to MD 32 TSMO	61-2305-41	This project is a combination of information technology and geometric improvements along the corridor. The project also includes extending the left entrance ramp from eastbound US 50 to northbound I-97 by 2,600 feet to address heavy merge movements.	7 miles, TSMO improvements TBD	Not Exempt	2027	2035
SHA	MD 170: Norcross Lane to Wieker Road	61-2303-41	This project will include widening of MD 170 from Norcross Lane to Wieker Road to provide an additional through lane in each direction and increased capacity at the MD 170/MD 174 intersection. The project will also include new sidewalk and bicycle compatible shoulders. Shoulder width will be determined during design. Construction funding in FY 2024 is for utility work. The remaining construction funding will be programmed at a later date.	2 to 4 lanes, 0.83 miles	Not Exempt	2026	2035
SHA	MD 175: Sellner Road/Race Road to McCarron Court	61-1701-41	This project widens MD 175 from Sellner Road/Race Road to McCarron Court from two to six lanes, and reconfigures ramps in the NE and SW quadrants of the MD 295 interchange to create signalized left turns at MD 175. A shared use path on the south side of the road and bicycle compatible shoulders will extend from Race Road/Sellner Road to McCarron Court. The original project limits included the MD 175 segment from National Business Parkway to Sellner Road/Race Road. This segment was eliminated from the project to accommodate ongoing development in this area.	2 to 6 lanes, 0.7 miles	Not Exempt	2025	2025

Appendix C-2: Non-exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
SHA	MD 2: US 50 to Arnold Road	61-2301-41	This project will provide a continuous third lane on northbound MD 2 from US 50 to Arnold Road and sidewalk along northbound MD 2 from Chautaugua Road to Arnold Road and along Arnold Road from the B&A Trail to MD 2. This project was previously included in the FY 2022-2025 TIP as an Anne Arundel County project with TIP ID #11-2102-41. The estimated total cost has been reduced to reflect the current project scope. Construction is not currently funded. Anne Arundel County contributed $200,000 for project design.	2 to 3 lanes, 1.25 miles	Not Exempt	2026	2035
SHA	MD 214: MD 468 to Camp Letts Road	61-2304-41	This project will add an additional lane in each lane direction and improve intersections from MD 468 to Camp Letts Road. The project also includes bicycle and pedestrian improvements. Project will include a shared use path along MD 214. Sidewalk will be determined during design. This project was previously included in the FY 2022-2025 TIP as an Anne Arundel County project with TIP ID #11-2104-41. Anne Arundel County contributed $1.6 million for engineering. Construction funding will be programmed at a later date.	2 to 4 lanes, 0.92 miles	Not Exempt	2026	2035
SHA	MD 3: Waugh Chapel Road/Riedel Road to MD32/I-97	61-2302-41	This project will provide a continuous third lane on northbound MD 3 from St. Stephens Church Road to MD 175, a continuous third lane on southbound MD 3 from the MD 32 Ramp to Waugh Chapel Road/Riedel Road, a shared use path along MD 3 from MD 175 to Waugh Chapel/Riedel Road, and sidewalk and crosswalk improvements at the MD 3 and MD 175 intersection. This project was previously included in the FY 2022-2025 TIP as an Anne Arundel County project with TIP ID #11-2103-41. Construction is not currently funded. Anne Arundel County contributed $160,000 for project design.	4 to 6 lanes, 1.60 miles	Not Exempt	2026	2035

Appendix C-2: Non-exempt Projects from the 2024-2027 TIP

Sponsoring Agency	Project Name	TIP ID	Project Description	Physical Data	Conformity Status	YOP	First Analysis Year
SHA	MD 32: Linden Church Road to I-70, Capacity & Safety Improvements	66-1703-41	This project will widen MD 32 in both directions from a two-lane to a four-lane divided roadway, from just north of the Linden Church Road interchange to just south of the I-70 interchange. The project also includes replacement of the Triadelphia Road bridge over MD 32. This is Phase 2 of a design build project on MD 32 from MD 108 to I-70. Phase 1, MD 108 to Linden Church Road (TIP ID #66-1602-41) opened to traffic in 2019. Phase 2 opened to traffic in summer 2022. The remaining funding is needed for the construction of Type 1 noise abatement improvements for Phase 2. The total cost of the project increased by approximately $7 million due to the addition of noise abatement improvements, maintenance of traffic, and other capital program costs.	2 to 4 Lanes, 6.6 Miles	Not Exempt	2022	2025
SHA	US 29: Middle Patuxent River to Seneca Drive - Phase 2	66-1406-41	Widen the northbound section of US 29 from the Middle Patuxent River to Seneca Drive (Phase 2) from 2 to 3 lanes (1.7 miles), including intersection improvements at Rivers Edge Road. This project includes an east/west trail to connect the Rivers Edge Community to points west (TIP #66-2301-25 in the FY 2023-2026 TIP). The estimated total cost includes projected funding that will be required to construct this project. No schedule or funding for construction have been identified.	5 to 6 lanes; 1.7 miles	Not Exempt	2030	2035

Appendix C-3: Exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	Time Period
Anne Arundel County	Chesapeake Bay Ferry Service	**Project**: Establish a passenger ferry between numerous ports along the Chesapeake Bay.	Transit	Exempt	2045	2040-2050
Baltimore City	Keith Avenue / Broening Highway Improvements	**Project**: Keith Avenue and Broening Highway are part of Baltimore City's critical freight route network, connecting I-95 and the Seagirt and Dundalk Terminal Port facilities. Improvements are needed to upgrade roadway conditions, improve wayfinding, and integrate complete street amenities to better accommodate safety for transit, pedestrians, and bicyclists. (4 to 4 lanes)	Roadway	Exempt	2036	2028-2039
Baltimore City	Russell Street Complete Streets Improvements	**Project**: Russell Street (MD 295) in south Baltimore is in need of investments to improve asset conditions and multimodal Complete Streets infrastructure for automobile traffic as well as pedestrian, transit, and freight movement. Transportation improvements will support safe mobility and economic development in the city's growing southern edge and Camden Yards. (6 to 6 lanes)	Roadway	Exempt	2036	2028-2039

Appendix C-3: Exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	Time Period
Baltimore City	Druid Park Lake Drive Complete Streets	**Project**: Redesign Druid Park Lake Drive to implement guidelines and recommendations in the City's Complete Streets Manual. Reduce automobile traffic by removing travel lanes and adding or improving infrastructure and accessible connections for pedestrians, the handicapped, bicyclists, transit users, and e-scooters. **Limits**: Greenspring Ave in the northeast to I-83 in the southeast along Druid Hill Park (2.17 miles) **Justification**: Redesign Druid Park Lake Drive to make it safe and easy for residents to utilize all of the modes of transportation available to them, enable access to the world-class park in their backyards, rebuild property values, improve public health, and raise the quality of life for thousands of residents. **Road Diet**: 8 to 2 lanes	Roadway	Exempt	2028	2035
Baltimore City	Vietnam Veterans Memorial Bridge and Hanover/Potee Street Corridor Improvements	**Project**: Rehabilitate or replace the Vietnam Veterans Memorial Bridge and improve multimodal Complete Streets infrastructure along the Hanover/Potee Streets (MD 2) corridor in south Baltimore. Transportation improvements will improve accommodations for pedestrians, bicycles, transit, freight, and auto traffic to support safe mobility and economic development. (4 to 4 lanes)	Roadway	Exempt	2032	2028-2039
Carroll County	MD 31 Corridor Improvements	**Project**: Improve sidewalks, enhance bicycle and pedestrian accessibility, and improve the roadway. (2 to 2 lanes)	Roadway	Exempt	2028	2028-2039
Carroll County	MD 851 Urban Reconstruction	**Project**: Roadway reconstruction and improvements to pedestrian and bicycle facilities, as well as streetscape amenities. (2 to 2 lanes)	Roadway	Exempt	2028	2028-2039

Appendix C-3: Exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	Time Period
Harford County	Transit Signal Priority	**Project**: Construct queue jump lanes along MD 22 and MD 924 and install equipment on buses that syncs with traffic signals along these corridors.	Transit	Exempt	2030	2028-2039
Harford County	Abingdon Road	**Project**: Capacity improvements including turn lanes, bicycle lanes and sidewalks (2 to 2 lanes)	Roadway	Exempt	2040	2040-2050
Harford County	MD 152	**Project**: Capacity improvements including turn lanes and bicycle and pedestrian access where applicable (3 to 3 lane reconstruction)	Roadway	Exempt	2045	2040-2050
Howard County	TSMO System 1	**Project**: Implement a combination of information technology and geometric improvements to address safety and operations within TSMO System 1 including I-70 (I-695 to MD 32); US 29 (MD 99 to MD 100) and US 40 (I-695 to I-70)	Roadway	Exempt	2029	2028-2039
Howard County	Broken Land Parkway at Snowden River Parkway	**Project**: Capacity, operational, and safety improvements at this signalized intersection as well as access improvements to the MD 32 / Broken Land Parkway interchange ramps (length of project: 0.25 miles)	Roadway	Exempt	2030	2028-2039
Howard County	MD 108	**Project**: Improvements as articulated in the 2014 Clarksville Pike Streetscape Plan & Design Guidelines / Traffic Study. Includes selected road capacity enhancements, sidewalks, shared use paths, and traffic signal upgrades (5 to 5 lane reconstruction).	Roadway	Exempt	2045	2040-2050
MDOT MTA	Eastern Bus Division	**Project**: Reconstruct Eastern Bus Division as an electric bus facility.	Transit	Exempt	2030	2028-2039

Appendix C-3: Exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	Time Period
MDOT MTA	Zero Emission Bus Transition Phase 1	**Project**: Transition 50% of MDOT MTA's 760 bus fleet to zero-emission by 2030. Includes procurement of over 350 Battery Electric Buses by 2030, training the transit workforce, and retrofitting Kirk and Northwest bus divisions with charging infrastructure.	Transit	Exempt	2030	2028-2039
MDOT MTA	Fleet Replacement with Low-Floor Vehicle	**Project**: Transition to low-floor Light Rail Vehicles when replacement is needed. This will require significant station retrofits, modifying maintenance facilities, and amending standard operating practices	Transit	Exempt	2045	2040-2050
MDOT MTA	Light Rail Fleet Mid-life Overhaul	**Project**: Overhaul the entire Light Rail fleet, extending the fleet's life by approximately 15 years, improving safety and reliability, providing a more comfortable and secure ride, and lowering maintenance costs.	Transit	Exempt	2037	2028-2039
MDOT MTA	MARC Rolling Stock Overhauls and Replacements	**Project**: Short-term, medium-term, and long-term plans to replace and overhaul MARC locomotives and train sets, including: • GP39H-2 Locomotive Mid-Life Overhaul • MP36PH-3C Mid-Life Overhaul • MARC III and MARC IV Railcar Overhaul • Railcar Fleet Replacement • Locomotive Fleet Replacement	Transit	Exempt	2041	2040-2050
MDOT MTA	Zero Emission Bus Transition Phase 2	**Project**: Transition to a 95% zero-emission fleet by 2045. Capital costs for phase 2 are rough estimates and include retrofitting for Washington Boulevard, a 5th Division, and Battery Electric Buses.	Transit	Exempt	2045	2040-2050

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Anne Arundel County	Annapolis to Fort Meade / Columbia Transit	**Project**: New Express Bus service between Parole and Columbia with primary service to Fort Meade and stops at major communities along the way. **Limits**: Annapolis/Parole to Fort Meade to Columbia (25.0 miles) **Justification**: Expand economic opportunities for Annapolis and Columbia residents and reduce vehicular demands on those corridors. Expand access to Fort Meade / NSA. **Capacity**: New Transit Service	Transit	Not exempt	2035	2035
Anne Arundel County	Anne Arundel Countywide Microtransit	**Project**: Expand microtransit service in Anne Arundel County from one zone in the south to 7 zones, providing on-demand transit services to connect to existing fixed route services countywide. **Limits**: Countywide **Justification**: Address first/last mile issues with existing transit and increase the ability of county residents to take advantage of existing services. **Capacity**: New Transit Service	Transit	Not exempt	2030	2035
Anne Arundel County	Glen Burnie to Annapolis Transit	**Project**: New Express Bus service between Annapolis / Parole and Glen Burnie along I-97. **Limits**: Cromwell Light Rail Station to Annapolis along I-97 (16.0 miles) **Justification**: Create frequent, high-quality service connecting the Annapolis and Glen Burnie / BWI areas and to the City of Baltimore via the existing light rail service connection. Increase economic opportunities and reduce demand on MD 2 and I-97. **Capacity**: New Transit Service	Transit	Not exempt	2035	2035

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Anne Arundel County	MD 170	**Project**: Widen from 2 to 4 lanes, resurface, and restripe along MD 170 and along MD 174 to create new turn lanes and increased capacity at the MD 170 / MD 174 intersection, including sidewalks and bicycle compatible shoulders. **Limits**: Norcross Lane to Wieker Road (0.83 miles) **Justification**: Improve safety and operations along MD 170 from Norcross Lane to Wieker Road, including the intersection of MD 170 and MD 174. **Widening**: 2 to 4 lanes	Roadway	Not exempt	2028	2035
Anne Arundel County	Annapolis to New Carrollton Transit	**Project**: New Express Bus service between Parole and New Carrollton with stops at major communities along the way. **Limits**: Parole to New Carrollton along US 50 (21.0 miles) **Justification**: Expand transit options, economic opportunity, and regional mobility and accessibility for vulnerable populations in Annapolis and Prince George's County / Washington D.C. areas. **Capacity**: New Transit Service	Transit	Not exempt	2035	2035
Anne Arundel County	MD 198	**Project**: Widen from 2 to 4 lanes and construct a continuous center median. Widen ramp at MD 295. Provide bicycle and pedestrian facilities within project limits. **Limits**: MD 295 to MD 32 (2.7 miles) **Justification**: Support economic growth at and around Fort Meade by constructing additional travel lanes to reduce congestion and a median that will improve safety. **Widening**: 2 to 4 lanes	Roadway	Not exempt	2035	2035

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Anne Arundel County	MD 3	**Project**: Targeted widening from 4 to 5 lanes, including intersection improvements, access controls to address safety, TSMO strategies to address congestion, and bicycle and pedestrian improvements. **Limits**: MD 450 to MD 32 (6.2 miles) **Justification**: Address capacity issues along MD 3, improve operations at intersections, improve roadway safety, and enhance pedestrian and bicycle accessibility. **Widening**: 4 to 5 lanes	Roadway	Not exempt	2030	2035
Anne Arundel County	I-97	**Project**: Widen from 4 to 6 lanes, adding managed lanes (HOV lanes) to address capacity needs. Investigate need for additional interchange access in Crownsville. **Limits**: MD 32 to U.S. 50/301 (6.5 miles) **Justification**: I-97 provides a gateway to the City of Annapolis and the Eastern Shore. Bottlenecks occur on roadway year round. **Widening**: 4 to 6 lanes; full interchange	Roadway	Not exempt	2045	2045
Anne Arundel County	MD 175	**Project**: Widen from 4 to 6 lanes, including improvements at the MD 32 interchange, and bicycle and pedestrian facilities. **Limits**: Reece Road to MD 170 (2.7 miles) **Justification**: Support the 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 this major employment hub with bicycle and pedestrian facilities. **Widening**: 4 to 6 lanes	Roadway	Not exempt	2045	2045

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Anne Arundel County	MD 177	**Project**: Widen from 2 to 4 lanes, including intersection improvements and improved bicycle and pedestrian infrastructure. **Limits**: MD 2 to Lake Shore Drive (6.1 miles) **Justification**: Reduce vehicle crashes by installing a median island, improve capacity at various intersections, widen segments of MD 177, and provide bicycle and pedestrian infrastructure where none currently exists. **Widening**: 2 to 4 lanes	Roadway	Not exempt	2045	2045
Anne Arundel County	MD 2	**Project**: Widen existing 4-lane sections to 6 lanes to create a continuous typical section throughout corridor, including intersection improvements and pedestrian facilities throughout to connect MD 2 to the B&A Trail. **Limits**: US 50 to MD 100 (10.0 miles) **Justification**: Address existing congestion, improve lane utilization, and accommodate high volumes of MD 2 traffic utilizing TSMO strategies. **Widening**: 4 to 6 lanes	Roadway	Not exempt	2045	2045
Anne Arundel County	MD 214	**Project**: Travel lane extensions from 2 to 4 lanes east of MD 2, 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. **Limits**: MD 424 to Shoreham Beach Road (7.5 miles) **Justification**: MD 214 provides an essential link between the Edgewater area to the rest of the County and the Washington D.C. region, serving local traffic as well as commuters traveling to job centers in Washington D.C., Fort Meade, the NSA, and Annapolis. **Widening**: 2 to 4 lanes (east of MD 2 for 4.1 miles)	Roadway	Not exempt	2045	2045

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Anne Arundel County	MD 295	**Project**: Widen from 4 to 6 lanes, including a new full interchange at Hanover Road and an extension of Hanover Road from the CSX railroad tracks to MD 170. **Limits**: MD 100 to I-195 (3.27 miles) **Justification**: Support economic growth at BWI. Relieve congestion and improve freight movement. Develop a key component of the local network with the Hanover Road interchange and extension. **Widening**: 4 to 6 lanes; new full interchange	Roadway	Not exempt	2040	2045
Anne Arundel County	MD 713	**Project**: Construct corridorwide improvements including reconstruction and widening, intersection improvements and bicycle and pedestrian accommodations. Primary widening is from 2 to 4 lanes between MD 175 and Stoney Run Drive. **Limits**: MD 175 to MD 176 (2.6 miles) **Justification**: MD 713 connects Fort Meade and NSA to Arundel Mills and by connecting to MD 176, improves access for all modes to BWI Airport. **Widening**: 2 to 4 lanes	Roadway	Not exempt	2045	2045

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Baltimore City	US 40 Highway Deconstruction	**Project**: US 40 is a depressed expressway built in the 1970s cutting through neighborhoods in West Baltimore. It was intended to connect with I-70, but that connection was never made. Deconstructing the highway will offer over 60 acres for redevelopment and improvements to adjacent streets. **Limits**: Smallwood Street to Greene Street (1.5 miles) **Justification**: Building this fragment of an expressway has caused irreparable damage to community cohesion and economic stability and provides no real value to the transportation network. Deconstructing the highway will offer over 60 acres for redevelopment and improvements to adjacent streets as well as new opportunities for complete street retrofits. **Road Diet**: 10 to 4 lanes	Roadway	Not exempt	2034	2035
Baltimore County	I-695 at Broening Highway Interchange	**Project**: Construct a partial interchange at Exit 44 of I-695 to support redevelopment at Sparrows Point. **Justification**: Improve access to major activity center. Reduce truck traffic impacting residential communities on Dundalk Avenue and Holabird Avenue. **Capacity**: New interchange	Roadway	Not exempt	2035	2035
Baltimore County	I-795	**Project**: Widen from 4 to 6 lanes and construct a full interchange at Dolfield Boulevard, including TSMO strategies. **Limits**: Owings Mills Boulevard to Franklin Boulevard (2.63 miles) **Justification**: Improve access to the planned growth corridor along Red Run Boulevard in Owings Mills. **Widening**: 4 to 6 lanes and new interchange	Roadway	Not exempt	2035	2035

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Baltimore County	MD 140	**Project**: Widen from 4 to 6 lanes, including a raised median, bicycle compatible outside lanes, and pedestrian facilities. **Limits**: Painters Mill Road to Owings Mills Boulevard (0.4 miles) **Justification**: Accommodate ongoing development in the area by adding capacity. Addition of a median will manage turning movements and increase safety. **Widening**: 4 to 6 lanes	Roadway	Not exempt	2035	2035
Baltimore County	MD 7 at MD 43 Interchange	**Project**: Upgrade from partial to full interchange, including two new ramps to accommodate full movements at interchange. **Justification**: Improve mobility through the corridor and provide another important link between the MD 43 corridor and White Marsh Town Center **Widening**: Addition of interchange movements	Roadway	Not exempt	2045	2045
Carroll County	MD 27 Corridor Improvements	**Project**: Widen to a consistent four lanes, including dedicated turn lanes, signalized traffic control, boulevard separation of lanes, and controlled intersections to allow pedestrian crossings. **Limits**: Carroll County Line to Leishear Road (3.2 miles) **Justification**: Corridor serves Frederick and Carroll Counties, and is a vital link between I-70 and northern Carroll County. Several large undeveloped parcels in this area are targeted for significant employment and residential uses. **Widening**: 2 to 4 lanes	Roadway	Not exempt	2040	2045

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Carroll County	MD 97	**Project**: Widen from 3 to 5 lanes, with a full interchange at Meadow Branch Road and bicycle and pedestrian facilities. **Limits**: Bachmans Valley Road to MD 140 in Westminster (2.4 miles) **Justification**: Support economic vitality, reduce congestion and improve operations, including pedestrian and bicycle facilities. **Widening**: 3 to 5 lanes	Roadway	Not exempt	2028	2035
Carroll County	MD 32	**Project**: Widen from 2 to 4 lanes with pedestrian and bicycle facilities. **Limits**: Howard County Line to MD 26 (3.36 miles) **Justification**: Address anticipated traffic growth. Construction of a median and access controls will increase safety in the corridor. Pedestrian and bicycle facilities will improve multimodal connections. **Widening**: 2 to 4 lanes	Roadway	Not exempt	2040	2045
Carroll County	MD 140	**Project**: Widen from 6 to 8 lanes, with a full interchange at MD 97, continuous flow intersections at Center Street and Englar Road, and bicycle and pedestrian facilities. **Limits**: Market Street to Sullivan Road (2.5 miles) **Justification**: Improve mobility and provide additional capacity for planned growth and economic development within Westminster. **Widening**: 6 to 8 lanes; new full interchange	Roadway	Not exempt	2050	2050

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Carroll County	MD 26	**Project**: Widen from 4 to 6 lanes, including a raised median, intersection improvements, and pedestrian facilities. **Limits**: MD 32 to Liberty Reservoir (2.5 miles) **Justification**: Addition of a median and partial access controls will improve safety. Continuous pedestrian facilities will improve multimodal access to employment and service centers. **Widening**: 4 to 6 lanes	Roadway	Not exempt	2050	2050
Harford County	US 1	**Project**: Add travel lane in each direction (widen from 4 to 6 lanes), including turn lanes and bicycle and pedestrian access where applicable. **Limits**: Baltimore County Line to MD 152 (1.4 miles) **Justification**: Improve the safety and operational characteristics of US 1. **Widening**: 4 to 6 lanes	Roadway	Not exempt	2050	2050
Harford County	MD 543	**Project**: Widen from 2 to 4 lanes, including intersection upgrades at MD 136, turn lanes, capacity upgrades to the MD 543 / I-95 interchange, and bicycle and pedestrian access. **Limits**: MD 136 to I-95 (1.9 miles) **Justification**: Relieve congestion and improve access, capacity, mobility and safety for passenger and freight traffic as well as bicyclists, pedestrians and transit riders. Address extreme queuing issues at I-95 interchange. **Widening**: 2 to 4 lanes	Roadway	Not exempt	2035	2035

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Harford County	MTA Commuter Bus Service	**Project**: Additional MTA commuter bus service from Harford County to Downtown Baltimore and Harbor East. **Limits**: Harford County to Downtown Baltimore **Justification**: Improve service and mobility for current and future riders by addressing capacity, frequency and reliability. **Capacity**: New Transit Service	Transit	Not exempt	2030	2035
Harford County	Aberdeen MARC Station	**Project**: Transit Oriented Development (TOD); new train station, additional parking, US 40 "Green Boulevard," and remove pedestrian overpass and replace with Station Square Plaza - a new pedestrian underpass and green, terraced plaza/amphitheater. **Justification**: Improve service and mobility for current and future riders by addressing capacity, frequency and reliability. **Capacity**: New station and parking	Transit	Not exempt	2045	2045
Harford County	MD 22	**Project**: Widen existing 2 and 3 lane sections to 4 and 5 lanes, including an HOV lane from Old Post Road to the Aberdeen Proving Ground (APG) gate, bicycle and pedestrian access, and transit queue jump lanes and transit priority system where applicable. **Limits**: MD 543 to I-95 (7.9 miles) **Justification**: MD 22 corridor is a major east-west arterial connecting the municipalities of Bel Air and Aberdeen with direct access to the main APG gate. The road has interchanges with I-95 and US 40 and a segment is designated as part of the East Coast Greenway. **Widening**: 2 to 5 lanes	Roadway	Not exempt	2040	2045

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Harford County	MD 24	**Project**: Widen from 4 to 6 lanes, including sidewalks and bicycle accommodations where appropriate. **Limits**: US 1 Bypass to south of Singer Road (5.0 miles) **Justification**: Increased traffic volumes continue to stress the roadway network in and around the town of Bel Air. The MD 24 corridor links Bel Air, Forest Hill and communities in the northern part of Harford County with I-95 and the US 40 corridor. **Widening**: 4 to 6 lanes	Roadway	Not exempt	2040	2045
Harford County	MD 24 (Rock Spring Road)	**Project**: Add travel lane in each direction (widen from 2 to 4 lanes), including turn lanes and completion of shared use path adjacent to the roadway from Forest Valley Road to Red Pump Road. **Limits**: US 1 Bypass to MD 23 (1.8 miles) **Justification**: Increased traffic volumes continue to stress the roadway network in and around the Town of Bel Air. This section of roadway is a gateway into the County's growth area from rural northern Harford County communities. **Widening**: 2 to 4 lanes	Roadway	Not exempt	2045	2045
Harford County	MD 24 at Singer Road Interchange	**Project**: 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. **Justification**: Reduce congestion and improve safety and operations by transforming an at grade intersection into a full grade separated intersection. **Capacity**: New interchange	Roadway	Not exempt	2040	2045

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Harford County	Perryman Access - Mitchell Lane	**Project**: Construct a new 2-lane road and bridge over Cranberry Run in Perryman, including turn lanes and bicycle and pedestrian access. **Limits**: US 40 near Mitchell Lane to Canning House Road (2.0 miles) **Justification**: Improve access, mobility and safety into and out of the Perryman Peninsula for passenger and freight traffic as well as bicyclists, pedestrians and transit users. **Widening**: 0 to 2 lanes	Roadway	Not exempt	2045	2045
Harford County	US 1	**Project**: Widen from 4 to 6 lanes, including bicycle and pedestrian accommodations. **Limits**: MD 152 to MD 147 / US 1 Business (1.3 miles) **Justification**: Increased traffic volumes continue to stress the roadway network in and around the Town of Bel Air. US 1 is a major transportation corridor linking Bel Air with northeast Baltimore County. **Widening**: 4 to 6 lanes	Roadway	Not exempt	2040	2045
Harford County	US 1 Bypass	**Project**: Widen from 2 to 4 lanes and improve US 1 / MD 24 and US 1 / MD 924 interchanges. **Limits**: MD 147 / US 1 Business to Hickory Bypass (4.6 miles) **Justification**: Reduce congestion, support economic development and improve quality of life in Harford County communities. Interchange improvements will improve safety and operations. **Widening**: 2 to 4 lanes	Roadway	Not exempt	2045	2045

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Harford County	US 40	**Project**: Widen from 4 to 6 lanes, including turn lanes, a partial interchange reconstruction at MD 543 and bicycle and pedestrian access. **Limits**: MD 543 to Loflin Road (1.7 miles) **Justification**: Relieve some of the congestion on I-95 by providing local travelers an alternate route. **Widening**: 4 to 6 lanes	Roadway	Not exempt	2040	2045
Harford County	US 40 at MD 22 Interchange	**Project**: Make capacity improvements, reconfigure the existing interchange, restrict all left turn movements (allowing room for designated bike lanes), and relocate the existing signal from MD 22 to US 40. **Justification**: Improve capacity and safety at this interchange for passenger, freight, and transit traffic as well as bicyclists and pedestrians. **Capacity**: New interchange movements	Roadway	Not exempt	2045	2045
Harford County	Thomas Run Road	**Project**: Streetscape and capacity improvements, including center turn lane, sidewalks, bicycle accessibility, pedestrian-scale lighting with banners, crosswalks, and street furniture. **Limits**: MD 22 to West Medical Hall Road (0.8 miles) **Justification**: Project will improve safety, mobility, and access for passenger traffic, bicyclists, and pedestrians on and around Harford CC campus. Growth expected due to partnership with Towson University and planned expansion. **Widening**: 2 to 3 lanes	Roadway	Not exempt	2050	2050

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Howard County	I-95	**Project**: Create peak hour part-time shoulder use lanes. **Limits**: MD 32 to MD 100 (6.0 miles) **Justification**: Relieve congestion and improve freight movement by adding one outside lane in both directions during peak hours. Creating additional merge area at entrance ramps will increase safety. **Capacity**: Adding one outside lane in both directions during peak hours	Roadway	Not exempt	2034	2035
Howard County	MD 175 / MD 108 Interchange	**Project**: Construct a partial grade-separation with direct access into Columbia Gateway to improve intersection capacity and alleviate the high collision rate. **Limits**: 0.25 miles in all directions from current intersection including direct connection of MD 108 to Columbia Gateway Drive **Justification**: Mitigate and reduce impacts at this congested intersection within the I-95 corridor, which currently experiences very high rates of rear-end and sideswipe collisions. Improve access to I-95 and direct access to Columbia Gateway, a Regional Activity Center. **Capacity**: New Partial Interchange	Roadway	Not exempt	2030	2035
Howard County	Snowden River Parkway Widening	**Project**: Widen from 4 to 6 lanes, including auxiliary lanes and pedestrian, bicycle and transit improvements on both sides of the road. **Limits**: Broken Land Parkway to Oakland Mills Road (1.1 miles) **Justification**: Enhance capacity and safety, including significant pedestrian, bicycle and transit improvements. Reduce diverted traffic using the local road network. **Widening**: 4 to 6 lanes	Roadway	Not exempt	2035	2035

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Howard County	US 29	**Project**: Widen northbound US 29 from 2 to 3 lanes, including improvements at intersection with Rivers Edge Road. **Limits**: Patuxent River Bridge to Seneca Drive (1.7 miles) **Justification**: Reduce congestion by adding one lane in the northbound direction. Project will also improve safety at the Rivers Edge Road intersection. **Widening**: 2 to 3 lanes	Roadway	Not exempt	2035	2035
Howard County	US 29 Bus Rapid Transit	**Project**: BRT connecting Ellicott City to Columbia, Maple Lawn and Burtonsville at MD 198 in Montgomery County, including separated facilities on US 29 to integrate with Montgomery County improvements and the development of a transit center in Downtown Columbia. **Limits**: US 40 to MD 198 (16.0 miles) **Justification**: Strengthen and support transit and economic connections between the Baltimore and Washington, DC regions. Provide greater access to housing, educational, cultural and recreational opportunities in each region. Reduce peak hour congestion and enhance mobility. **Capacity**: New Transit Service	Transit	Not exempt	2028	2035

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Howard County	Bus Rapid Transit to BWI	**Project**: New bus rapid transit service from the Dorsey MARC station to Arundel Mills to BWI consolidated rental car facility to the BWI light rail station. **Limit**s: Dorsey Market Station to BWI Light Rail Station (9.7 miles) **Justification**: More closely link the Baltimore and Washington regions via connectivity to the MARC Camden Line, jurisdictions within the Baltimore region, and BWI airport, a major transportation facility. Reduce commuter traffic congestion on major arterials and automobile emissions. **Capacity**: New Transit Service	Transit	Not exempt	2040	2045
Howard County	MD 100 Widening	**Project**: Widen from 4 to 6 lanes with additional merge/diverge lanes. **Limits**: I-95 to Anne Arundel County Line (2.0 miles) **Justification**: MD 100 experiences daily capacity and safety issues (merging/weaving), especially during peak periods, that negatively impact commuting, freight/commercial and regional traffic as well as air quality and energy use. Local traffic diverts to local road networks, overloading the capacity and operational capability of these roadways. Widening MD 100 east of I-95 will relieve these problems as well as accommodate increasing demand for MD 100. **Widening**: 4 to 6 lanes	Roadway	Not exempt	2045	2045

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Howard County	MD 175	**Project**: Widen from 2 to 4 lanes, including bicycle, transit and pedestrian improvements consistent with Anne Arundel County widening proposals. **Limits**: Oceano Avenue to Anne Arundel County Line (0.54 miles) **Justification**: Improve multimodal inter-jurisdictional traffic, access to housing, commuting, and freight options to and from the Baltimore region. Facilitate freight access to and from Dorsey Run Road and MD 295 and access to the MARC Camden and Penn lines. **Widening**: 2 to 4 lanes	Roadway	Not exempt	2040	2045
Howard County	MD 175 at I-95 Interchange	**Project**: Improve existing full interchange consistent with preferred options in the MDOT SHA MD 175 Improvement Study. **Justification**: Reduce congestion and improve mobility at this critical point on the regional and national highway network and support freight movement to and from distribution centers located in the area. **Widening**: 8 to 10 lanes; full interchange	Roadway	Not exempt	2040	2045
Howard County	MD 32	**Project**: Widen from 2 to 4 lanes to provide safety, capacity, operational, and access improvements on MD 32. **Limits**: North of I-70 to Carroll County Line (4.0 miles) **Justification**: MD 32 connects high growth area of Carroll County with growing job markets in Howard County. **Widening**: 2 to 4 lanes	Roadway	Not exempt	2045	2045

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Howard County	US 1	**Project**: Widen from 4 to 6 lanes and construct the revised typical section in the State / County MOU for US 1 revitalization, including connecting community destinations in the US 1 corridor to support safety and access as per the US 1 safety evaluation, functional plans and the regional active transportation priority project. **Limits**: Baltimore County Line to MD 175 (5.5 miles) **Justification**: Improve access, mobility, safety, and enhance economic activity and opportunity in the corridor. **Widening**: 4 to 6 lanes	Roadway	Not exempt	2045	2045
Howard County	US 1 at MD 175 Interchange	**Project**: Construct a new grade-separated Single Point Urban Interchange (SPUI), with MD 175 passing over US 1. **Justification**: Support commercial revitalization of the US 1 corridor by relieving congestion with a grade separated interchange. Improve safety by removing at grade turning movements. **Capacity**: New interchange	Roadway	Not exempt	2045	2045
Howard County	US 1 Corridor Bus Rapid Transit	**Project**: Bus Rapid Transit will emulate light rail operation at a lower cost, and is designed to link Howard County commuters from the Dorsey MARC to the Laurel MARC Station and the City of Laurel as well as to College Park and the Purple Line Light Rail. **Limits**: Dorsey MARC Station to College Park Purple Line (19.5 miles) **Justification**: More closely link the Baltimore and Washington regions to foster greater economic, educational, housing, cultural and recreational opportunities without peak hour and other congestion. **Capacity**: New transit service	Transit	Not exempt	2040	2045

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Howard County	US 1 Revitalization Breakout Projects	**Project**: Widen from 4 to 6 lanes along with bicycle, pedestrian, transit, streetscape, and access improvements consistent with the US 1 Design Manual. **Limits**: MD 175 to Whiskey Bottom Road (4.5 miles) **Justification**: Enable active transportation modes, improve access to affordable housing and commuting options, improve safety and freight movements, and eliminate bottleneck locations such as the skewed intersection at Guilford Road. **Widening**: 4 to 6 lanes	Roadway	Not exempt	2040	2045
MDOT MTA	East-West Transit Corridor	**Project**: New east-west transit service to connect major Baltimore region destinations like West Baltimore, Downtown, East Baltimore, and the western suburbs as identified in the RTP. Specific transit routes and/or stations, modes, alignments, or service levels have not been determined. **Limits**: Ellicott City to Essex (17.0 miles) **Justification**: Corridor represents a major area of transit infrastructure need and was selected for its potential to benefit the highest number of people, jobs and households in the region in the short term, as well as a high concentration of vulnerable populations. **Capacity**: New Transit Service	Transit	Not exempt	2030	2035

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
MDOT MTA	MDOT MTA Transit Hubs: • Charles Center • Mondawmin • Penn Station • Penn-North • Rogers Avenue • Owings Mills • Patapsco • BWI Airport • Glen Burnie • Bayview Medical Center • Camden Station • Johns Hopkins Hospital • Lexington Market • State / Cultural Center • UM Medical Center • Essex • White Marsh	**Project**: MDOT MTA has identified transit hub locations as part of the Regional Transit Plan. Typically, a transit hub includes enhanced amenities (shelters, benches, information). Projects are still in planning, but service changes in the form of reduced headways are assumed. **Justification**: Improve transferring from one system, mode or vehicle to another. Include items such as coordinated signage and wayfinding, bicycle parking and shared mobility options, shelters, benches, real-time information, CCTV for security, park-and-ride and TOD in some cases, and potential comfort stations for operators. **Capacity**: Increase transit service frequency	Transit	Not exempt	 • 2033 • 2028 • 2030 • 2040 • 2040 • 2040 • 2040 • 2050 • 2050 • 2050 • 2050 • 2050 • 2050 • 2050 • 2050 • 2050 • 2050 • 2050	 • 2035 • 2035 • 2035 • 2045 • 2045 • 2045 • 2045 • 2050 • 2050 • 2050 • 2050 • 2050 • 2050 • 2050 • 2050 • 2050 • 2050

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
MDOT MTA	North-South Transit Corridor	**Project**: New North-South transit service to connect Towson to Downtown Baltimore, with associated investments to significantly improve the speed and reliability of transit service in this busy corridor, as identified as an early opportunity corridor in the RTP. Specific transit routes and/or stations, modes, alignments, or service levels have not been determined. **Limits**: Towson to Downtown Baltimore; potentially Lutherville to Port Covington (14.0 miles) **Justification**: Corridor represents a major area of transit infrastructure need and was selected for its potential to benefit the highest number of people, jobs and households in the region in the short term, as well as a high concentration of vulnerable populations. **Capacity**: New Transit Service	Transit	Not exempt	2045	2045
MDTA	I-95: Port Covington Access Improvements	**Project**: Improve I-95 ramps along approximately 7 miles of I-95 and sections of Hanover Street, McComas Street, and Key Highway. Improvements include new ramps, ramp removal, ramp realignment, reconstruction of Hanover Street, realignment of McComas Street; widening of Key Highway between McHenry Row and McComas Street, and pedestrian and bicycle connections. **Limits**: Caton Avenue to Fort McHenry Tunnel (7.0 miles) **Capacity**: New ramps and movements		Not exempt	2029	2035

Appendix C-4: Non-exempt Projects from Resilience 2050

Sponsoring Agency	Project Name	Project Description	Project Type	Conformity Status	Year of Operation	First Analysis Year
Queen Anne's County	MD 18	**Project**: 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. **Limits**: Kent Narrows to east side of Bay Bridge (5.0 miles) **Justification**: Widening MD 18 to add capacity, improve safety, and maintain mobility as volumes and congestion on U.S. 50/301 increase is vital while MDOT plans for additional capacity for crossing the Chesapeake Bay. **Widening**: 2 to 4 lanes	Roadway	Not exempt	2035	2035
Queen Anne's County	MD 8 / U.S. 50/301 Interchange and Service Roads	**Project**: Widen from 2 to 4 lanes, convert MD 8 overpass to full 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. **Limits**: Skip Jack Parkway south to Davidson Drive; east to Thompson Creek service road (2.0 miles) **Justification**: MD 8 is predominantly 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. **Widening**: 2 to 4 lanes	Roadway	Not exempt	2035	2035

Appendix D: Round 10 Cooperative Forecasts

Round 10 Population

JURISDICTION	2020	2025	2030	2035	2040	2045	2050	CHANGE 2020-2030	CHANGE 2030-2040	CHANGE 2040-2050	CHANGE 2020-2050	PERCENT CHANGE 2020-2030	PERCENT CHANGE 2030-2040	PERCENT CHANGE 2040-2050	PERCENT CHANGE 2020-2050
Anne Arundel County	592,695	621,687	646,214	664,214	677,424	687,119	694,235	53,519	31,210	16,811	101,540	9.0%	4.8%	2.5%	17.1%
Baltimore City	585,708	594,526	596,393	596,916	599,216	603,436	609,776	10,685	2,823	10,560	24,068	1.8%	0.5%	1.8%	4.1%
Baltimore County	854,523	868,112	876,726	894,541	909,000	920,275	934,521	22,203	32,275	25,520	79,998	2.6%	3.7%	2.8%	9.4%
Carroll County	172,891	176,399	179,140	181,580	183,956	186,253	188,357	6,249	4,816	4,401	15,466	3.6%	2.7%	2.4%	8.9%
Harford County	260,924	270,059	277,819	285,759	293,569	301,252	308,810	16,895	15,750	15,241	47,886	6.5%	5.7%	5.2%	18.4%
Howard County	332,317	349,697	363,987	380,016	393,641	404,607	414,820	31,670	29,654	21,179	82,503	9.5%	8.1%	5.4%	24.8%
Queen Anne's County	49,874	52,712	54,935	56,000	56,667	56,883	57,032	5,061	1,732	365	7,158	10.1%	3.2%	0.6%	14.4%
Baltimore Region	2,848,932	2,933,192	2,995,213	3,059,026	3,113,473	3,159,824	3,207,550	146,281	118,260	94,077	358,618	5.1%	3.9%	3.0%	12.6%

Round 10 Households

JURISDICTION	2020	2025	2030	2035	2040	2045	2050	CHANGE 2020-2030	CHANGE 2030-2040	CHANGE 2040-2050	CHANGE 2020-2050	PERCENT CHANGE 2020-2030	PERCENT CHANGE 2030-2040	PERCENT CHANGE 2040-2050	PERCENT CHANGE 2020-2050
Anne Arundel County	219,971	228,528	236,781	244,935	251,583	256,061	260,349	16,810	14,802	8,766	40,378	7.6%	6.3%	3.5%	18.4%
Baltimore City	251,479	258,233	260,583	262,036	264,323	267,459	271,532	9,104	3,740	7,209	20,053	3.6%	1.4%	2.7%	8.0%
Baltimore County	329,955	334,975	338,408	345,501	351,261	355,753	361,428	8,453	12,853	10,167	31,473	2.6%	3.8%	2.9%	9.5%
Carroll County	63,050	64,455	65,595	66,670	67,701	68,709	69,704	2,545	2,106	2,003	6,654	4.0%	3.2%	3.0%	10.6%
Harford County	98,282	101,919	105,719	109,519	113,319	117,119	120,919	7,437	7,600	7,600	22,637	7.6%	7.2%	6.7%	23.0%
Howard County	118,781	126,599	133,334	141,148	147,881	153,953	159,721	14,553	14,547	11,840	40,940	12.3%	10.9%	8.0%	34.5%
Queen Anne's County	19,240	20,355	21,223	21,636	21,892	21,975	22,033	1,983	669	141	2,793	10.3%	3.2%	0.6%	14.5%
Baltimore Region	1,100,758	1,135,064	1,161,643	1,191,444	1,217,960	1,241,029	1,265,686	60,885	56,317	47,727	164,928	5.5%	4.8%	3.9%	15.0%

Round 10 Employment

JURISDICTION	2020	2025	2030	2035	2040	2045	2050	CHANGE 2020-2030	CHANGE 2030-2040	CHANGE 2040-2050	CHANGE 2020-2050	PERCENT CHANGE 2020-2030	PERCENT CHANGE 2030-2040	PERCENT CHANGE 2040-2050	PERCENT CHANGE 2020-2050
Anne Arundel County	340,555	375,489	389,833	404,256	419,012	434,725	451,505	49,278	29,179	32,493	110,950	14.5%	7.5%	7.8%	32.6%
Baltimore City	365,047	377,443	396,188	413,808	430,379	446,685	450,996	31,141	34,191	20,617	85,949	8.5%	8.6%	4.8%	23.5%
Baltimore County	398,693	411,260	425,058	428,306	434,620	441,159	444,251	26,365	9,562	9,631	45,558	6.6%	2.2%	2.2%	11.4%
Carroll County	62,814	64,313	65,821	67,319	68,809	70,290	71,789	3,006	2,988	2,979	8,974	4.8%	4.5%	4.3%	14.3%
Harford County	100,748	110,606	120,560	130,808	141,273	151,868	162,499	19,812	20,712	21,226	61,751	19.7%	17.2%	15.0%	61.3%
Howard County	185,600	193,976	203,284	217,619	231,970	238,935	245,600	17,684	28,686	13,630	60,000	9.5%	14.1%	5.9%	32.3%
Queen Anne's County	16,562	16,775	17,125	17,250	17,375	17,525	17,700	563	250	325	1,138	3.4%	1.5%	1.9%	6.9%
Baltimore Region	1,470,019	1,549,862	1,617,869	1,679,367	1,743,438	1,801,187	1,844,339	147,850	125,568	100,902	374,320	10.1%	7.8%	5.8%	25.5%

Note: This data was submitted by CFG membership. The final revisions were submitted on April 1, 2022.

Note: The Population figure for Anne Arundel County for year 2020 deviates from the decennial Census figure. It appears that the Naval Academy was omitted from the Group Quarters population count in the 2020 Decennial Census. An estimated GQ population has been added to the appropriate TAZ, and is included here in the county and regional totals.

Note: Anne Arundel County data includes the City of Annapolis.

Source: Local jurisdictions; Cooperative Forecasting Group.

Appendix E: *Excerpt- Baltimore Metropolitan Council InSITE Activity Based Travel Model: Model Validation Report*

Excerpt – Approval of InSITE Activity Based Travel Model

Documentation of InSITE enhancements and 2019 validation. The 2019 validated InSITE model will be used in the 2024 to 2027 mobile source emission analysis, updated long-range transportation plan project evaluation and other regional corridor studies. The original InSITE model was estimated using the 2008 Household Travel Survey and validated to 2012.

The original InSITE model geography was modified to incorporate the recently developed 2020 Transportation Analysis Zone (TAZ) boundaries. BMC staff in cooperation with the Cooperative Forecasting Group adjusted, combined, and added TAZs based on 2020 Tiger Line File and 2020 Census PL 94-171 block population and household counts. The model geography was expanded to cover Queen Anne's County, Maryland as well as Adams and York Counties, Pennsylvania. The expanded model contains over 3,000 TAZs with a 2020 base year population of 6.4 million.

Cambridge Systematics, developer of InSITE, incorporated model enhancements in order to improve runtime. The Cambridge Systematics Activity-Based Model (ABM) software, TourCast was modified to adopt a multi-threaded approach to take advantage of multiple server cores and applying a 25% synthetic population sampling approach.

The Cambridge Systematics team analyzed and summarized the 2019 Maryland Household travel survey travel patterns, choices, and behavior. Survey summary statistics were used to adjust InSITE model component parameters. The calibrated InSITE model components capture the change in travel behavior observed between 2008 (model estimation year) and 2019 observed conditions.

The consultant team used other independent data sources to validate InSITE network travel. A Location-Based Services (LBS) data set was purchased in order to validate distribution patterns, time-of day, and trip lengths. Classified counts and On-Board Transit Survey was used to validate network loadings.

Appendix F: HPMS Adjustment Factors

HPMS Adjustment Factors by Jurisdiction

		Interstate	*Freeway*	*Principal Arterial*	*Minor Arterial*	*Collector*
Urban	Baltimore City	1.4006	1.0379	0.9232	1.0208	2.8658
	Anne Arundel	1.0025	1.0997	1.0269	1.4418	1.9055
	Baltimore	1.0671	1.5574	1.1561	1.6577	2.1016
	Carroll	0.7469	0.7469	1.1061	1.3359	1.3052
	Harford	1.0185	1.2867	1.6632	1.5932	2.5613
	Howard	0.9377	1.1339	1.2545	1.4644	1.3711
Rural	Baltimore City	1.4006		0.9232	1.0208	2.8658
	Anne Arundel	0.5253		1.0260	0.8183	1.6537
	Baltimore	0.4013		0.5666	0.9796	0.9139
	Carroll	0.7469		0.6844	0.8392	0.8246
	Harford	1.2227		1.1653	0.9775	1.1701
	Howard	0.7242		1.1644	0.5573	0.9674

Local to Non-local Ratios by Jurisdiction

Jurisdiction	*Urban*	*Rural*
Baltimore City	0.0731	0.0731
Anne Arundel	0.0732	0.2019
Baltimore	0.0733	0.2013
Carroll	0.0722	0.1861
Harford	0.0731	0.1916
Howard	0.0733	0.2104

Appendix H: Public Participation

Public Comment Period Promotion Overview

Paid promotion for the *2024—2027 Transportation Improvement Program, Resilience 2050* long-range transportation plan and associated *Air Quality Conformity Determination* included a total of $10,314.78 across 13 print, radio and digital outlets, including:

1. The Baltimore Sun (print)
2. The Columbia Flier (print)
3. The Towson Times (print)
4. The Harford Aegis (print)
5. Latin Opinion Baltimore (print, in Spanish)
6. 88.1 WYPR (radio)
7. Magic 95.9 Radio One (radio)
8. The Baltimore Sun (digital)
9. Latin Opinion Baltimore (digital, in Spanish)
10. Maryland Public Television (digital)
11. Baltimore magazine (digital)
12. Facebook (digital)
13. Instagram (digital)

Reporting from digital ads reflects a minimum of more than 166,000 impressions from digital alone. Combining audience data across outlets and modes suggests a potential reach of more than a million impressions during the comment period.

Reporting from social media shows that 75 related posts across BMC's Twitter, Instagram, Facebook and LinkedIn generated more than 9,200 impressions and 310 engagements.

In addition to sponsored content in *Baltimore* magazine and an op-ed in *The Baltimore Sun* from the BRTB and BMC Board Chairs, earned media during the comment period included coverage from *Maryland Matters*, WYPR's *On The Record*, *Railway Age*, *Construction Equipment Guide*, *Planetizen* and *WBAL*.

To manage the review and response to comments, BMC staff grouped them into 9 categories. These categories are broad, so a variety of comments may be grouped under an individual heading. Between BRTB members, several other committees and BMC staff, we have thoroughly reviewed and responded to all comments submitted. The full set of comments was shared with all BRTB, Technical Committee, and Interagency Consultation Group members and are also located on the PublicInput.com site.

Let us say up front that we are very appreciative of the effort so many individuals and organizations have gone through to review materials and send in comments. This is informative for all of our members and does have an impact on the planning process. As is customary for the BRTB, we share all comments and responses with everyone who commented as well as on the BMC website and include them in the final TIP, *Resilience 2050* and Conformity Determination documents.

ACTIVE TRANSPORTATION (10 comments)

1. **Anonymous**

   I am disappointed to see that many of the pedestrian and bicycle upgrades in Harford County are dependent on road widening projects. Could the pedestrian and bicycle improvements be made independently of the road widening projects, allowing an alternative to driving and potentially alleviating the need for widening the roads at all?

   BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The funding for the necessary road projects cannot be reallocated to bicycle and pedestrian projects, however pedestrian and bicycle improvements can be made independently of road widening with other funding sources. Examples of this include the MA & PA trail and a recent study of a separated path for US 40.

   Thank you again for your comment.

2. **Anonymous**

   Expand funding for more bicycle infrastructure! Having safe routes encourages bicycle transportation, and reduces needs more continued road expansion.

   BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. In recent years, the Baltimore Regional Transportation Board has made important progress in planning and building a range of bicycle facilities, but there is much more to do. We welcome your support for these improvements. More of these improvements are on the way and new funding and policies from the Infrastructure Investment and Jobs Act (IIJA) has provided support in these areas.

Though most of the projects in *Resilience 2050* are large-scale roadway and transit projects, it also includes significant investments in bicycle and pedestrian infrastructure. Nearly 3/4 of the projects in *Resilience 2050* include bicycle and pedestrian facilities as part of their project scope. *Resilience 2050* also includes $250 million in funding set-aside for strategies improving air quality in the Baltimore region. Sixteen regional bicycle and pedestrian priority projects are included in *Resilience 2050* as part of this set-aside funding (see page 30 of Chapter 7).

And we encourage you to be involved in the Vision for a Regional Bicycle Network project which will begin in fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities that was developed in spring 2022. The Vision for a Regional Bicycle Network project will also go into more depth on the benefits of active transportation and potential funding sources for bicycle and multiuse projects.

Thank you again for your comment.

3. **Anonymous**

I reviewed the Executive Summary and scanned the Baltimore Region Transportation Improvement Program DRAFT 2024-2027. These are great projects that will very likely contribute to increased Physical Activity (walking, biking and e-scooter riding) in Baltimore and ultimately combat Chronic Diseases (obesity, hypertension, diabetes and mental illnesses).

I have not looked up the routes listed in the document. Nevertheless, I hope that one or more projects will focus on improving transportation access and frequency to Parks and Recreational Centers for the youth and adult populations.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We appreciate your support for the projects in *Resilience 2050* and the *2024-2027 TIP*. As you note, there is a connection between increased physical activity and public health. Research has shown that bicycling and walking can assist in people meeting recommended levels of physical activity and potentially improve public health due to the health benefits of increased physical activity. A well-connected and comfortable active transportation network can also increase access to recreational areas and parks. Also, replacing a vehicle trip with biking, walking or scooting reduces greenhouse gas emissions that contribute to poor air quality. However, walking and bicycling rates are impacted by the presence or lack of sidewalks and other pedestrian infrastructure, bicycle lanes, shared-use paths and bicycle boulevards.

In recent years, the Baltimore Regional Transportation Board has made important progress in planning and building a range of bicycle facilities, but there is much more to do. We welcome your support for these improvements. More of these improvements are on the way and new funding and policies from the Infrastructure Investment and Jobs Act (IIJA) has provided support in these areas.

We encourage you to be involved in the Vision for a Regional Bicycle Network project, which will begin in fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities that was developed in spring 2022. The Vision for a Regional Bicycle Network project will also go into more depth on the benefits of active transportation and potential funding sources for bicycle and multiuse projects.

Thank you again for your comment.

4. **Brigitte Carty**

On behalf of the Lower Susquehanna Heritage Greenway, I am writing to express our support for Susquehanna River Bicycle and Pedestrian Bridge project to create a fully accessible pedestrian and

bicycle bridge, independent of the proposed Amtrak Bridge over the Lower Susquehanna River between Havre de Grace and Perryville.

Importantly, the Susquehanna River Bicycle and Pedestrian Bridge project will create pedestrian access for people of all physical abilities where there currently is none, and it will drastically increase safety for cyclists who currently must endure high-stress conditions without any traffic separation, only fit for the most fearless and experienced cyclists, over the Hatem Bridge and Conowingo Dam Bridge. A new bicycle and pedestrian bridge would also expand reliable, affordable, and healthy mobility options to residents and visitors alike to access economic, social, and recreation opportunities. People will be able to travel without a vehicle between Havre de Grace, Perryville, and Aberdeen via multimodal transfers by bus and the MARC Penn Line with first/last mile connections across the river to get to and from destinations, furthering the state's sustainable transportation and development goals, while attracting investments into each town's downtown as part of the region's fast-growing outdoor recreation economy.

This project would become a national destination unto itself, showcasing incredible views of both Havre de Grace's and Perryville's waterfronts with its natural and historic scenery, where the Susquehanna River meets the Chesapeake Bay. More broadly, a dedicated crossing for people of all ages and abilities on walking, biking, and rolling would finally resolve one of the most challenging gaps for nine major regional and national trails and routes: the Lower Susquehanna Heritage Greenway, Mason Dixon Trail, September 11th National Memorial Trail, East Coast Greenway, US Bicycle Route 201, Washington-Rochambeau Revolutionary Route, Star-Spangled Banner National Historic Trail, and Captain John Smith Chesapeake National Historic Trail, all while connecting to Susquehanna State Park trails. Finally, the crossing would align with the proposed creation of a Chesapeake National Recreation Area, linking the region to its wealth of cultural, historical, and natural resources.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. As you noted, on behalf of the Lower Susquehanna Heritage Greenway, access to public transit is important and can be enhanced by improving first-mile/last-mile active transportation connections such as sidewalks and bike lanes. Creating local and regional active transportation networks with connections to transit has the potential to increase bicycling and walking rates in the region and will expand the reach of each mode. Improving last-mile connectivity will also increase equity by improving access to employment and core services for residents with low incomes, individuals with disabilities, children and older adults.

The Concept Plan for Bicycle and Pedestrian Improvements along US 40 includes a recommendation for future studies to explore bicycle and pedestrian crossing opportunities across the Susquehanna River to improve regional connectivity and for connectivity of other area bicycle and pedestrian routes (i.e. the East Coast Greenway, U.S. Bicycle Route (USBR) 201, Lower Susquehanna Heritage Greenway Trail, North Park Loop (Joe K Trail), Mason Dixon Trail System, and Lafayette Trail).

Thank you again for your comment.

5. **Wyn Dobbs**

I support many of the goals of this project, but I see strikingly little devotion to improving the cycling infrastructure of this space, which is unfortunate given cycling infrastructure is cheap, helps reduce air pollution and contributes to the health of the individuals cycling.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. It is accurate that most of the big-ticket projects in the long-range transportation plan, *Resilience 2050*, and the short-range Transportation Improvement Program (TIP) are highway

and transit focused. There are multiple fund sources for bike and pedestrian projects, not all of which are federal funds. Only projects seeking federal funds are included in the TIP, and the Plan only includes projects anticipated to receive federal funds in the future. The scopes of nearly 3/4 of the projects in *Resilience 2050* include bicycle and pedestrian facilities. *Resilience 2050* also includes $250 million in funding set-aside for strategies improving air quality in the Baltimore region. Sixteen regional bicycle and pedestrian priority projects are included in *Resilience 2050* as part of this set-aside funding (see page 30 of Chapter 7).

In recent years, we have increased regional planning funds dedicated to 30% design for a range of bicycle facilities to make progress on a number of projects. However, due to our funding structure, the Baltimore Regional Transportation Board cannot use planning funds beyond 30% design. The BRTB and member jurisdictions have made important progress in planning and building a range of bicycle facilities, but there is much more to do. We welcome your support for these improvements. More of these improvements are on the way and new funding and policies from the Infrastructure Investment and Jobs Act (IIJA) has provided support in these areas.

And we encourage you to be involved in the Vision for a Regional Bicycle Network project which will begin in fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities that was developed in spring 2022. The Vision for a Regional Bicycle Network project will also go into more depth on the benefits of active transportation and potential funding sources for bicycle and multiuse projects.

Thank you again for your comment.

6. **Diane K**

Please consider additional active transportation projects in the northeast region of the Baltimore Metropolitan Area like the US 40 Bike Ped Concept Plan to reimagine Route 40 as a multimodal transportation corridor with rail, transit, and bikeway options -- specifically between Havre de Grace and Aberdeen but potentially a farther reaching concept. Please also consider the opportunity for a bike/pedestrian crossing of the Susquehanna River between Havre de Grace and Perryville for connecting the East Coast Greenway, the September 11th National Memorial Trail, and US Bikeway 201 through northeastern Maryland. This is particularly relevant with regard the mega-regional project of the Susquehanna River Rail Bridge project where the 1906 Amtrak bridge is being replaced with 2 new bridges. A separate bike/pedestrian bridge has been explored for 2 decades in this region and it would be a lost opportunity not the consider a river crossing at this time. Both US 40 and the Amtrak rail line are in close proximity (within a half a mile of each other) and bisect Havre de Grace and Perryville. Lastly, it is great to see the MARC service connection to WILMAPCO supported in this document to provide regional rail and commuter gap service between MARC and SEPTA systems. Re-thinking active transportation and rail systems in this heavily traveled Northeast Corridor is appreciated and timely.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. Thanks for your support of the Concept Plan for Bicycle and Pedestrian Improvements along US 40, which was completed in spring 2023. The plan explored a shared-use path (an off-road path separated from motor vehicle traffic by an open space or barrier and intended for use by bicyclists, pedestrians, and other non-motorized users) along US 40 between the train station in the City of Aberdeen and Erie Street in the City of Havre de Grace, which currently has intermittent sidewalks and lacks dedicated bicycle infrastructure.

The Concept Plan for Bicycle and Pedestrian Improvements along US 40 includes a recommendation for future studies to explore bicycle and pedestrian crossing opportunities across the Susquehanna

River to improve regional connectivity and for connectivity of other area bicycle and pedestrian routes (i.e. the East Coast Greenway, U.S. Bicycle Route (USBR) 201, Lower Susquehanna Heritage Greenway Trail, North Park Loop (Joe K Trail), Mason Dixon Trail System, and Lafayette Trail).

In recent years, BMC and member jurisdictions have made important progress in planning and building a range of bicycle facilities, but there is much more to do. We welcome your support for these improvements. More of these improvements are on the way and new funding and policies from the Infrastructure Investment and Jobs Act (IIJA) has provided support in these areas.

Thank you again for your comment.

7. **Robert Krasnansky**

I would like help to get the Catonsville Short Line Trail Pedestrian Overpass over 695 added to the long term plan.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. Unfortunately, this project idea would need to be better developed and be sponsored as a candidate project by a BRTB member agency to be considered at this time. To advance this project concept it is important to work with a project sponsor such as Baltimore County Department of Public Works and Transportation. Baltimore County DPW&T is finalizing the Baltimore County Bicycle and Pedestrian Master Plan which will provide important updates to the County's existing Eastern and Western Pedestrian and Bicycle Access Plans, which were developed more than 15 years ago.

On a regional level, we encourage you to be involved in the Vision for a Regional Bicycle Network project, which will begin in fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities that was developed in spring 2022. The Vision for a Regional Bicycle Network project will also go into more depth on the benefits of active transportation and potential funding sources for bicycle and multiuse projects.

Thank you again for your comment.

8. **Jennifer S**

Investments in reliable public transit that connects the city is key to a sustainable Baltimore. Bike lanes should also be prioritized as an alternative to automobile infrastructure. Many of the neighborhoods are small and could be traveled by bike, lessening traffic and a need for road expansions; however, the city currently is not designed for bike transit including a lack of parking options for bikes in many areas of the city.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that access to public transit is important and can be enhanced by improving first-mile/last-mile active transportation connections such as sidewalks and bike lanes. Creating local and regional active transportation networks with connections to transit has the potential to increase bicycling and walking rates in the region and will expand the reach of each mode. Improving last-mile connectivity will also increase equity by improving access to employment and core services for residents with low incomes, individuals with disabilities, children and older adults.

Resilience 2050 includes over $3.8 billion in funding for two major transit corridors, the East-West and North-South Transit Corridors. It also includes funds for eleven transit hubs throughout Baltimore City, among other transit investments. Nearly 3/4 of the projects in *Resilience 2050* include bicycle

and pedestrian facilities as part of their project scope. *Resilience 2050* also includes $250 million in funding set-aside for strategies improving air quality in the Baltimore region. Sixteen regional bicycle and pedestrian priority projects are included in *Resilience 2050* as part of this set-aside funding (see page 30 of Chapter 7).

Baltimore City accepts bicycle parking rack requests from the property owner of a location and from the general public through the Bicycle Parking Rack Request Form. Property owners who submit a request will be contacted by the City within 30 days and the location will be added to the queue for installation if the location is determined to be suitable. A request submitted by the general public will alert the Baltimore City Department of Transportation to the need for bicycle parking in the area. However, approval by the property owner adjacent to the location is needed. You can learn more here: https://transportation.baltimorecity.gov/bikerackrequestform

Also, MDOT Maryland Transit Administration is adding bike racks at 29 Local Bus, Light Rail, Metro Subway, MARC Train and Park-and-Ride locations around the state as part of its $43 million Fast Forward: Customer Experience Enhancement Project. Once completed, bike racks will be available at every rail station in the MTA system. Learn more here.

Thank you again for your comment.

9. **Tim S**

My family and I support expanded bike lanes. Also, extending the Jones Falls Trail northward to Lake Roland and beyond - possibly to the Ashland trailhead for the NCR trail.

Mass Transit is hugely important as well, although I have no idea how to successfully implement it. I always failed at that part of SimCity.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that both improving active transportation infrastructure and access to public transit are vital components of the transportation network. In addition, transit and bicycling infrastructure can work together. Creating local and regional active transportation networks with connections to transit has the potential to increase bicycling and walking rates in the region and will expand the reach of each mode. Improving last-mile connectivity will also increase equity by improving access to employment and core services for residents with low incomes, individuals with disabilities, children and older adults.

Resilience 2050 includes over $4.8 billion in funding for transit expansion projects throughout the region. These projects include two major transit corridors, the East-West and North-South Transit Corridors, seventeen transit hubs throughout the region and several new express bus and BRT routes, among others. In addition, nearly 3/4 of the projects in *Resilience 2050* include bicycle and pedestrian facilities as part of their project scope. *Resilience 2050* also includes $250 million in funding set-aside for strategies improving air quality in the Baltimore region. Sixteen regional bicycle and pedestrian priority projects are included in *Resilience 2050* as part of this set-aside funding (see page 30 of Chapter 7). One of these projects includes additional Torrey C. Brown/NCR Trail connections in Baltimore County.

In recent years, we have increased regional planning funds dedicated to 30% design for a range of bicycle facilities to make progress on a number of projects. However, due to our funding structure, the Baltimore Regional Transportation Board cannot use planning funds beyond 30% design. The BRTB and member jurisdictions have also made important progress in planning and building a range of bicycle facilities, but there is much more to do. We welcome your support for these improvements.

More of these improvements are on the way and new funding and policies from the Infrastructure Investment and Jobs Act (IIJA) has provided support in these areas.

And we encourage you to be involved in the Vision for a Regional Bicycle Network project which will begin in fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities that was developed in spring 2022. The Vision for a Regional Bicycle Network project will also go into more depth on the benefits of active transportation and potential funding sources for bicycle and multiuse projects.

Thank you again for your comment.

10. Steve Wagner

Proposed bike and walking along US40 (Pulaski Hwy) Aberdeen to HdG. Currently bikers and walkers are already using this route, day and night, with minimal separation from car traffic. A separation between vehicular traffic and the bike & sidewalk path would be a significant safety improvement.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. As you noted, there is currently a lack of sidewalks or other pedestrian infrastructure along the majority of US 40 between the train station in the City of Aberdeen and Erie Street in the City of Havre de Grace. This section also lacks dedicated bicycle infrastructure. The concept plan for a shared-use path (an off-road path separated from motor vehicle traffic by an open space or barrier and intended for use by bicyclists, pedestrians, and other non-motorized users) was completed in spring 2023. Funding has not yet been identified for future phases of design and construction of the project. However, the project will be eligible to apply for a variety of state and federal funding programs that could fund future phases of the project.

Thank you again for your comment.

AIR QUALITY (8 comments)

1. Dave Arndt

We need to electrify everything. Especially trucks, trains and ships. Let's restructure the toll fees on trucks so diesel & gas trucks pay 3x what electric trucks have to pay.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The BRTB works mainly on surface transportation, which doesn't include freight trains and ships. At the State level, there are many regulations and legislation proposed to improve car and truck efficiency and reduce emissions. The Advanced Clean Cars II regulation will require manufacturers to sell 100% zero emission vehicles by 2035. The Advanced Clean Truck rule requires that manufacturers who produce a certain class truck sell zero-emission trucks as an increasing percentage of their Maryland sales up to 2035. To respond to your second point about toll fees, the BRTB does not play a role in toll collection or revenue. The Maryland Transportation Authority (MDTA) facilitates toll collection and toll revenue.

Thank you again for your comment.

2. Will Fedder

How can $7b dollars in highway expansion not worsen air quality, relatively to not doing so?

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The LRTP shows the transportation investments prioritized and funded through the entire Baltimore Region up until 2050. The emissions for the invested projects are modeled, based on a variety of factors. The modeling results show that the projects in the plan do not exceed the

National Ambient Air Quality Standards (NAAQS) for pollutants that cause ozone pollution. This happens because of more stringent emission regulations for car manufacturers in the State, and more efficient vehicles. At the State level, there are many regulations and legislation proposed to improve car and truck efficiency and reduce emissions. The Advanced Clean Cars II regulation will require manufacturers to sell 100% zero emission vehicles by 2035. The Advanced Clean Truck rule requires that manufacturers who produce a certain class truck sell zero-emission trucks as an increasing percentage of their Maryland sales up to 2035.

Thank you again for your comment.

3. **Patrick Ireland**

I don't think the highway expansion projects would benefit air quality. Bigger roads means more cars and more pollution. Even the move to electric cars would not be quick enough to mitigate this. The only real solution to improve air quality is to shift to more and better public transit.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The air quality conformity determination report documents the emissions analysis and methodology as federally required. The Clean Air Act requires Metropolitan Planning Organizations for regions in nonattainment or maintenance of National Ambient Air Quality Standards (NAAQS) to perform technical analyses to demonstrate that regional transportation plans and programs conform to the most recently approved or adequate motor vehicle emission budgets approved by the U.S. Environmental Protection Agency (EPA). The Baltimore Regional Transportation Board does not model emissions for specific projects, but as a region, the emission analysis results are showing pollution levels below the federally approved allowable limits, or budgets. Also, *Resilience 2050* shows investments in transit, bike and pedestrian projects, which will further improve emission reduction efforts.

Thank you again for your comment.

4. **Hal Alan Long**

The urgency of zero carbon by 2050 does not come through with these plans. Transportation is a major factor. There are recommendations for EV buses, and some improvements to mass transport, and some bike lane additions and improvements. But I doubt it is serious enough to get anywhere close to the carbon reduction we will need in the transportation sector.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. Implementing programs and plans to reduce carbon emissions takes coordination and effort among many agencies and groups. The conformity determination document is a federally required document under the Clean Air Act, to show that the transportation plans and programs in nonattainment areas, like the Baltimore region, do not cause new air quality violations, worsen existing violations, or delay timely attainment of the National Ambient Air Quality Standards (NAAQS). The conformity determination report documents criteria pollutants, which doesn't include carbon dioxide. Fortunately, our partners at the state level, including MDE and MDOT are working to decrease emissions. Related to transportation, there are many regulations and legislation proposed to improve car and truck efficiency and reduce emissions. The Advanced Clean Cars II regulation will require manufacturers to sell 100% zero emission vehicles by 2035. The Advanced Clean Truck rule requires that manufacturers who produce a certain class truck sell zero-emission trucks as an increasing percentage of their Maryland sales up to 2035.

Thank you again for your comment.

5. **Quinlan M**

The current realities around climate change require decisive action. These plans do not adequately address air quality in the region. Additionally, current increases in wildfires demonstrate that air quality could become a massive concern very soon. Addressing climate through increased public transit, rail transit, and active transportation is needed to help offset changes in air quality due to climate by reducing Maryland VMT and thereby vehicle emissions.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The air quality conformity determination report documents the emissions analysis and methodology as federally required. The Clean Air Act, as amended in 1990, requires MPOs for regions in nonattainment or maintenance of National Ambient Air Quality Standards (NAAQS) to perform technical analyses to demonstrate that regional transportation plans and programs conform to the most recently approved or adequate motor vehicle emission budgets approved by the U.S. Environmental Protection Agency (EPA). Regarding your comment about wildfire smoke, we agree that this is a concern. Climate change is exacerbating conditions for wildfires, and increasing particulate matter pollution. Fortunately, related to transportation, we are seeing more stringent emission reduction regulations at the state and federal level for cars and trucks, especially regarding electric vehicles. Additionally, *Resilience 2050* shows investments in transit, bike and pedestrian projects, which will further improve emission reduction efforts.

Thank you again for your comment.

6. **Andrew S**

I have multiple people in my household who fall in the 'sensitive groups' category, and this year's wildfire smoke has made everyday life more challenging for us. But to be honest, we were struggling with the air here before this summer. Consequently, our priority is to see this TIP aim well above its modest goals related to developing projects that realize significant emissions reductions. Electrification facilities, such as upgrading the bus depot on Eastern Avenue in Baltimore City, are excellent investments to that end. So, too, are projects that embed street trees and other 'green' infrastructure that reduces ambient particulate matter into bricks-and-mortar transportation project costs. Greenway construction that offers safe, viable alternatives to motorized transportation is a welcome inclusion too, although details in this plan are much too sparse to take seriously. Our view is that these kinds of projects occupy far too little of the planned investments in the next 5 years. Please step back from this proposal and look forward with a clearer sense of what is needed to address current, but especially future, levels of air pollution and get those projects started sooner than 5+ years from now.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that wildfire smoke is a concern. Climate change is exacerbating conditions for wildfires, and increasing particulate matter pollution. Fortunately, related to transportation, we are seeing more stringent emission reduction regulations at the state and federal level for cars and trucks, especially regarding electric vehicles. Additionally, *Resilience 2050* shows investments in transit, bike and pedestrian projects, which will further improve emission reduction efforts. Maryland has the impressive goal of reducing emissions 60% by 2031 and becoming net zero by 2045. There is coordination between many state and federal agencies to achieve these goals and implement programs and regulations to promote cleaner air and improve air quality. Greenhouse gas emission reductions are proposed for different sectors including buildings, energy, and transportation. The Advanced Clean Cars II regulation will require manufacturers in Maryland to sell 100% zero emission vehicles by 2035. There are some promising regulations happening now and on the horizon to help improve air quality in Maryland.

Thank you again for your comment.

7. **Sharon Smith**

   Always concerned about air quality. Studies show higher incidence of Asthma in urban cities which often have larger minority populations.

   BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The Baltimore region is in nonattainment for the 2015 ozone federal standard. We are aware that high levels of ozone pollution impact vulnerable populations, mostly the elderly and children. Fortunately, there are regulations in place or underway to improve air quality for all Marylanders. The Maryland Department of Environment (MDE) has adopted new regulations for cleaner cars and trucks. The air quality in the Baltimore region is improving. Based on the 2023 Clean Air Report from MDE, all monitors are measuring pollution levels below the National Ambient Air Quality Standards. Learn more here: https://mde.maryland.gov/programs/air/Pages/AirQualityReports.aspx.

   Thank you again for your comment.

8. **Will**

   If I can follow up RE: air quality & highway widenings, many folks question the predictive power of these travel demand models due to the phenomenon of "induced demand", where vehicle miles traveled increases to offset the travel time savings. Is there empirical evidence that MDOT SHA highway widenings have improved air quality?

   BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The Air Quality conformity determination report documents regional emissions, not project-level emissions. Also, the model provides outputs for the precursors of ozone, which are NOx and VOCs, because the Baltimore Region is in nonattainment for ozone. The emission results show that VOC and NOx pollution levels decrease in every horizon test year up to 2050. This is attributed to the stringent regulations in place or proposed in Maryland, to help make cars more efficient and less polluting.

   We believe this comment was asked during the virtual public meeting where BMC staff said that some highway capacity can improve traffic flow, thus reducing emissions from idling. This is one piece of a complicated network and not a blanket solution.

   Thank you again for your comment.

EMERGING TECHNOLOGY (3 comments)

1. **Anonymous**

   nice to see planning but things may change by 2050 with AI and remote work. Most 75% drive alone per census and that will never change. 40 years of work and I rode Mass Transit 3 years out of 40. the rest was driving. I work remote and save 40 hours of time a month. Better to pay a company to have remote work. BTW 695 backs up even on weekends more lanes as planed but when 2025 ? 2027.

   BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. You're certainly right that many factors and trends will affect the regional transportation network and travel patterns by 2050, including AI and remote work. The impacts of these trends remains uncertain, but the BRTB continually monitors these and other trends to monitor potential risks and impacts and identify actions to take.

While the specific rates of adoption of remote work may be uncertain, it is clear that working from home is more than a short-lived response to a public health crisis. Chapter 2 of *Resilience 2050* discusses the potential impacts of remote work. We also released a white paper discussing a variety of demographic trends, including remote work, in more detail. Chapter 3 of *Resilience 2050* discusses additional factors and trends, including a variety of emerging technologies, some of which relate to or utilize AI. Emerging technologies discussed include Mobility on Demand (MOD), micromobility, advanced driver assistance systems and Connected and Automated Vehicles (CAV), Truck Platooning and Personal Delivery Devices. We also released a white paper discussing these emerging technologies in more detail. See www.Resilience2050.com for the *Resilience 2050* document and www.publicinput.com/Resilience2050whitepapers to read the white papers.

Regarding I-695, the short-range 2024-2027 Transportation Improvement Program (TIP) includes two large-scale beltway projects. The first will utilize the inside shoulder to create a new travel lane on the inner and outer loops during daily peak travel periods from I-70 to MD 43 (western and northern portions of I-695), a distance of 19 miles. The project is anticipated to be complete in 2024. The second project reconstructs the interchange at I-695 and I-70. This project is anticipated to be complete in 2027. You can view these and other projects in the 2024-2027 TIP at https://baltometro.org/transportation/plans/short-range-transportation-improvement-plan/2024-2027-TIP.

Thank you again for your comment.

2. **Joel Hurewitz**

The Baltimore Regional Transportation Board's (BRTB) draft Resilience 2050 Plan needs to include urban air mobility (UAM) and electric vertical takeoff and landing (eVTOL) air taxis. The Plan states on page 37:

Emerging Technologies and Resilience 2050 *Technologies are constantly changing and there remains a significant amount of uncertainty surrounding the impact of emerging technologies. As use of these emerging technologies becomes more widespread, we will continue to monitor potential risks and impacts and identify actions to take. Understanding the potential and consequences of technologies is important to help to ensure the region harnesses the positive effects of technology and avoids or minimizes potential negative effects. We must be prepared to face rapid advances and implementation issues while continuing to make investment decisions and develop programs and projects that support a safe, efficient, accessible, equitable and environmentally responsible transportation system for all users.*

Our specific actions will include:

• *Tracking technology development and deployment within the region, nationally and internationally to understand and plan to take full advantage of the benefits and minimize disadvantages from new and emerging technologies*

• Investigating how to use newly available data to enhance transportation planning

• Working with stakeholders, especially elected officials and the public, to manage expectations and perceptions, minimize future problems and leverage opportunities

• Building technical, institutional and policy capacity, and including new partners as necessary

• Working to monitor deployment throughout the region to ensure equitable distribution of the benefits technology can offer

https://www.baltometro.org/sites/default/files/bmc_documents/general/transportation/long-range/2050/Resilience2050_Full.pdf

While the Plan has a short discussion about drones, there is no discussion about UAM. This was generally confirmed during discussion with the staff at the Howard County public meeting on June 15, 2023. If BRTB were to follow its own statements on emerging technologies, it would include UAM and eVTOL technologies. Additionally, tracking the regional, national and international developments of UAM would include noticing that

- Blade Air Mobility Inc. and Beta Technologies, in February 2023 flight-tested eVTOLs in the New York City area;
  https://fortune.com/2023/02/14/flying-taxi-companies-beta-blade-test-flights-nyc/
- United Airlines announced plans to start eVTOL air taxi service with Archer Aviation in 2025 between the downtown Vertiport Chicago and O'Hare International Airport;
  https://arstechnica.com/cars/2023/03/united-airlines-reveals-first-evtol-passenger-route-starting-in-2025/
- on June 14, 2023, United Airlines announced plans to start air taxi service with Eve Air Mobility in San Francisco in 2026; https://eveairmobility.com/united-airlines-and-eve-air-mobility-collaborating-to-bring-first-electric-commuter-flights-to-san-francisco/
- Delta Airlines announced plans to provide home-to-airport services with Joby Aviation beginning in New York and Los Angeles;
  https://news.delta.com/delta-joby-aviation-partner-pioneer-home-airport-transportation-customers
- eVTOL manufacturers including Archer, Eve, and Joby are exhibiting at the Paris Airshow; https://www.ainonline.com/aviation-news/advanced-air-mobility/2023-06-19/future-fliers-flock-paris
- eVTOL service is planned for the 2024 Paris Olympics; https://www.futureflight.aero/news-article/2022-11-10/vertiport-testbed-opens-paris-air-mobility-development-project
- the State sponsored Maryland Technology Development Corporation (TEDCO), with its office in Columbia, invested in Lusby, Maryland based eVTOL developer Hop Flyt;
  https://www.tedcomd.com/tedco-backed-hop-flyt-inc-raises-15m-series.
- in August 2023, the Baltimore Convention Center is hosting the first Federal Aviation Administration (FAA) Advanced Air Mobility Summit; "*Sessions and workshops will focus on how air taxis and electric vertical take-off, and landing (eVTOL) aircraft will change the future of aviation*." https://www.faa.gov/newsroom/mark-your-calendar-2023-faa-drone-symposium-and-advanced-air-mobility-summit

The FAA also published proposed rules on June 14, 2023 which include eVTOLs:

Powered-lift will also be utilized to support the deployment of advanced air mobility (AAM) operations. AAM is an umbrella term for an air transportation system that moves people and cargo using revolutionary new aircraft. *These aircraft are often referred to as air taxis or electric Vertical Takeoff and Landing (eVTOL) aircraft.* Congress has recently directed the Department of Transportation to establish an advanced air mobility working group to plan for and coordinate efforts to integrate advanced air mobility aircraft into the national airspace system through the Advanced Air Mobility Coordination and Leadership Act. This rulemaking is an important step in facilitating the integration of powered lift and AAM into the [National Airspace System].

38946 Federal Register / Vol. 88, No. 114 / Wednesday, June 14, 2023 / Proposed Rules Integration of Powered-Lift: Pilot Certification and Operations; Miscellaneous Amendments Related to Rotorcraft and Airplanes. https://www.govinfo.gov/content/pkg/FR-2023-06-14/pdf/2023-11497.pdf

Furthermore, the FAA released its Urban Air Mobility (UAM) Version 2.0 Concept of Operations April 26, 2023. Therein, it it states how local governments and metropolitan planning organizations should prepare:

1.2.3. *Vertiport Considerations*

State and local governments are being encouraged to actively plan for UAM infrastructure to ensure transportation equity, market choice, and accommodation of demand for their communities. The vertiports and vertistops should be sited to ensure proper room for growth based on FAA evaluated forecasts and be properly linked to surface transportation (when possible), especially if the facility primarily supports cargo operations. Local governments should also have zoning protections in place to protect airspace in and around vertiports and vertistops.

Metropolitan planning organizations, including state and local governments, may incorporate UAM infrastructure planning into larger transportation and utility planning efforts to ensure seamless coverage and capacity. Community engagement and strategic connectivity to larger transportation planning efforts is key to ensuring UAM provides maximum benefits.

Concept of Operations p. 2, https://www.faa.gov/sites/faa.gov/files/Urban%20Air%20Mobility%20%28UAM%29%20Concept%20of%20Operations%202.0_0.pdf

See also "Federal guidelines for eVTOL operations encourage cities to plan for infrastructure" May 16, 2023, https://www.smartcitiesdive.com/news/federal-faa-gudielines-air-taxi-urban-air-mobility-eVTOL-aircraft/650399/

Other jurisdictions have done UAM planning. "[T]he Texas Transportation Commission [established] the Urban Air Mobility Advisory Committee 'to assess current state law and any potential changes to state law that are needed to facilitate the development of urban air mobility operations and infrastructure in this state'." Additionally, one of its functions is to:

• Direct the State to work with municipalities to provide technical assistance to local governments in adapting and integrating urban air mobility/advanced air mobility in their communities.

Report and Recommendations of the Urban Air Mobility Advisory Committee, Executive Summary, https://ftp.txdot.gov/pub/txdot/avn/uam-report-executive-summary.pdf

The City of Los Angeles published a UAM report after the release of the FAA's Urban Air Mobility Concept of Operations v1.0, June 26, 2020, which includes:

MULTIMODAL CONNECTIVITY

* * * *Connections with Ground Transportation: Vertiport locations should be well-connected with existing and future ground transportation, medical centers, and fulfillment locations. Locations within close proximity to high capacity transit systems, such as Metro Rail and Bus, Metrolink, and Amtrak, should be prioritized.*

LAND USE COMPATIBILITY

Current and Potential Land Uses: *Vertiport locations should consider what types of land uses may support UAM demand, such as major retail centers, stadiums and arenas, major tourist attractions, higher education campuses, offices, and major transportation facilities.* Certain types of land use may be more incompatible with vertiports, such as K-12 schools, and other sensitive uses.

Zoning: DCP can consider which current zoning or new zoning may be needed to allow for vertiport development.

Los Angeles Department of Transportation Urban Air Mobility Policy Framework Considerations September 13, 2021, p. 27. https://ladot.lacity.org/sites/default/files/documents/ladot-uam-policy-framework-considerations.pdf

Therefore, the BRTB should do as Texas and Los Angeles have done and follow its own statements on emerging technologies and include UAM in Resilience 2050 Plan. Furthermore, the BRTB and the local governments should take action to include future UAM technologies as part of land use and zoning planning and include future development for UAM in appropriate transit projects; this should include in particular Howard County's Columbia Transit Center which is planned for a location--similar to the land uses enumerated by Los Angeles--near the Mall in Columbia and the Merriweather Post Pavilion.

If you build it, UAM might come. On the other hand, if development is made incompatible with UAM, it might never be a transit option. Sincerely

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. You raise important issues regarding this topic not included in our draft. Although we were not aware of the FAA regulation, the FAA is indeed encouraging State and local governments to actively plan for UAM infrastructure to ensure transportation equity, market choice and accommodation of demand for their communities. The BRTB will add language to Chapter 3 to include these concepts and the importance of working with the FAA to gain an understanding of where vertiports and vertistops could be sited to ensure proper room for growth and how these systems link to our surface transportation network for both passenger and cargo operations.

Thank you again for your comment.

3. **Gregory Shafer**

The section in Chapter 3 on automated and CAV vehicles fails to recognize that this technology is advancing quickly and will require infrastructure to fully implement. The region will fall behind other areas in realizing the benefits of this technology, if preparations including infrastructure investment are not made early. This is a huge change in transportation modality and will require innovative thought on how to implement and ensure that it's equitably implemented.

I was particularly concerned by the statement that automated vehicles are not anticipated to be available until late in the planning period. This timing is critical to having the infrastructure ready and there is NO basis for the statement on timing. Due to the impact that this technology will have on the transportation system, there is a huge potential for wasted funds on infrastructure that becomes outdated. Therefore, a study should be undertaken by BRTB to anticipate when the technology will be available and what investments will be most promising.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. A comprehensive review on recent advances of CAV technology published in the Journal of Traffic and Transportation Engineering discusses the challenges and uncertainties associated with the implementation of CAVs, including inter-CAV communications, security of CAVs, intersection control for CAVs, collision-free navigation of CAVs, and pedestrian detection and protection. Another study published in Transportation Research Record evaluates the effectiveness of CAVs in a large-scale network by considering both vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication technologies. The study found that the application of CAVs reduced travel time rate significantly compared with the base condition even with a low market penetration level.

Additionally, and illustrating the difficulty of implementation, there are significant concerns about the vulnerability of CAVs to cyber-attacks. A study published in Accident Analysis & Prevention discusses the many vulnerabilities and uncertainties in CAVs in terms of cyber-attacks. These challenges and uncertainties suggest that it may take longer for CAV technology to be widely adopted and significant in the region.

While we will acknowledge technology is advancing quickly and breakthroughs occur daily it is equally important to note that CAV technologies are vast and evolving and public funds must be used judiciously. The Baltimore Regional Transportation Board (BRTB) recently produced a document entitled *"Connected and Automated Vehicle (CAV) Planning Guide: Recommended Actions for Local Agencies to Prepare for CAVs"* (or the CAV Planning Guide). This guide outlines the potential benefits and challenges of connected and automated vehicles and recommends local, regional and state agency actions to guide CAV implementation to support local and regional goals. The accompanying User Guide for CAV Planning provides a structure that local and regional staff can use to implement the recommended actions over the next 1-2 years. The document and user guide will be available on the BMC website by early August 2023. The BRTB will continue to evaluate the timing and infrastructure investments that make sense for the region. The BRTB is committed to ensuring that the region is prepared for this change in transportation modality while also being responsible with public funds.

Thank you again for your comment.

INDUCED DEMAND (5 comments)

1. **Micah Dezort**

The sheer number of projects whose scope includes widening roads is astounding. Claiming these projects have the potential to reduce congestion is disingenuous and is counter productive to the health and safety of this region. The use of traffic models is a technique that is outdated and assumes that car use is a guaranteed fact of life. This plan should be making genuine attempts to reduce the car dependence of the area.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. Current regional scale travel forecasting models are able to simulate some, but not all, elements of induced demand. Our model does recognize that when a roadway is improved, speeds will increase. This will result in more vehicles being attracted to this facility that may result in longer travel distances. The model also has a mode choice module that will look at alternate modes and may shift trips to/from transit or highways depending on the mode (highway or transit) travel time. These effects will show up in the Vehicle Miles Traveled (VMT) figures in Appendix C of *Resilience 2050*. Increased travel time reliability that induces additional household trip making is not captured in travel models. However, model household behavior trip rates are adjusted with the collection of observed data. Our modeling team continues to review national best practices and will try to include any modeling advancements that may improve our model in these areas.

Thank you again for your comment.

2. **Reid K**

PLEASE take induced demand into consideration and STOP expanding existing roads. Focus instead on expanding public transportation options and improving facilities for pedestrians and cyclists.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. Current regional scale travel forecasting models are able to simulate some, but not all, elements of induced demand. Our model does recognize that when a roadway is improved, speeds will increase. This will result in more vehicles being attracted to this facility that may result in longer travel distances. The model also has a mode choice module that will look at alternate modes and may shift trips to/from transit or highways depending on the mode (highway or transit) travel time. These effects will show up in the Vehicle Miles Traveled (VMT) figures in Appendix C of *Resilience 2050*. Increased travel time reliability that induces additional household trip making is not captured in travel models. However, model household behavior trip rates are adjusted with the collection of observed data. Our modeling team continues to review national best practices and will try to include any modeling advancements that may improve our model in these areas.

We agree that improving active transportation infrastructure and access to public transit are vital components of the transportation network. *Resilience 2050* includes over $4.8 billion in funding for transit expansion projects throughout the region. These projects include two major transit corridors, the East-West and North-South Transit Corridors, seventeen transit hubs throughout the region and several new express bus and BRT routes, among others. In addition, nearly 3/4 of the projects in *Resilience 2050* include bicycle and pedestrian facilities as part of their project scope. *Resilience 2050* also includes $250 million in funding set-aside for strategies improving air quality in the Baltimore region. Sixteen regional bicycle and pedestrian priority projects are included in *Resilience 2050* as part of this set-aside funding (see page 30 of Chapter 7).

And we encourage you to be involved in the Vision for a Regional Bicycle Network project which will begin in fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities that was developed in spring 2022. The Vision for a Regional Bicycle Network project will also go into more depth on the benefits of active transportation and potential funding sources for bicycle and multiuse projects.

Thank you again for your comment.

3. **James Pizzurro**

It's my understanding that your modeling for road and highway projects doesn't consider any of the effects of induced demand, and thus roadway widening projects, for example, get points under your scoring rubric for "reducing emissions." Your organization plays an important role in shaping the long-term future of transportation in our region through the prioritization of transportation projects, so it's nothing short of tragic and embarrassing that you do not properly account for all the ways some of these projects further incentivize driving over other modes of transportation, subjecting more people to soul-sucking traffic and congestion more often, and worsening people's quality of life while also further polluting our air. It is critical that you revisit the way such projects are evaluated to properly account for the disproportionate amount of damage they cause. Please lead Baltimore on a path to true sustainability and resiliency; do not be complacent in its further degradation.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. Current regional scale travel forecasting models are able to simulate some, but not all, elements of induced demand. Our model does recognize that when a roadway is improved, speeds will increase. This will result in more vehicles being attracted to this facility that may result in longer travel distances. The model also has a mode choice module that will look at alternate modes and may shift trips to/from transit or highways depending on the mode (highway or transit) travel time. These effects will show up in the Vehicle Miles Traveled (VMT) figures in Appendix C of *Resilience 2050*. Increased travel time reliability that induces additional household trip making is not

captured in travel models. However, model household behavior trip rates are adjusted with the collection of observed data. Our modeling team continues to review national best practices and will try to include any modeling advancements that may improve our model in these areas.

Thank you again for your comment.

4. **Melanie**

The council is aware that induced demand is a well recognized effect of high speed roads, and that road widening with the purpose of improving level of service will only provide short term relief to congestion, and ultimately will lead to higher numbers of cars on the road adding more pollution with a return to similar idling times?

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. Current regional scale travel forecasting models are able to simulate some, but not all, elements of induced demand. Our model does recognize that when a roadway is improved, speeds will increase. This will result in more vehicles being attracted to this facility that may result in longer travel distances. The model also has a mode choice module that will look at alternate modes and may shift trips to/from transit or highways depending on the mode (highway or transit) travel time. These effects will show up in the Vehicle Miles Traveled (VMT) figures in Appendix C of *Resilience 2050*. Increased travel time reliability that induces additional household trip making is not captured in travel models. However, model household behavior trip rates are adjusted with the collection of observed data. Our modeling team continues to review national best practices and will try to include any modeling advancements that may improve our model in these areas.

Thank you again for your comment.

5. **Nick Snider**

It has been mentioned that the current plans to not have any indication or mention of induced demand, however I feel that is an important point to note and question.

Overall: Roadway expansion should be among the lowest priorities, with a focus more on public transit and sustainable growth in ways that align to regulations such as the City of Baltimore's "Complete Streets" and other similar policies that require a re-examination of existing roads, highways, and car-centric avenues to modernize and be more pedestrian, transit, and alternative transportation option friendly, and encourage safety through decreased speeds to align to Vision Zero aspirations.

Maryland has the opportunity to lead the way in becoming a transit-forward state to reduce reliance on cars and increase equity and the ability for residents and visitors to get around without needing automobiles. Our plans should reflect these aspirations and goals.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. Current regional scale travel forecasting models are able to simulate some, but not all, elements of induced demand. Our model does recognize that when a roadway is improved, speeds will increase. This will result in more vehicles being attracted to this facility that may result in longer travel distances. The model also has a mode choice module that will look at alternate modes and may shift trips to/from transit or highways depending on the mode (highway or transit) travel time. These effects will show up in the Vehicle Miles Traveled (VMT) figures in Appendix C of *Resilience 2050*. Increased travel time reliability that induces additional household trip making is not captured in travel models. However, model household behavior trip rates are adjusted with the collection of observed data. Our modeling team continues to review national best practices and will try to include any modeling advancements that may improve our model in these areas.

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And we encourage you to be involved in the Vision for a Regional Bicycle Network project which will begin in fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities that was developed in spring 2022. The Vision for a Regional Bicycle Network project will also go into more depth on the benefits of active transportation and potential funding sources for bicycle and multiuse projects.

Thank you again for your comment.

LESS HIGHWAY, MORE TRANSIT, BIKE, PEDESTRIAN (33 comments)

1. **Anonymous**

As an extremely car-centric city, Baltimore is way behind. We need more and better bike and pedestrian infrastructure and improved rapid transit (subway and light rail). Dedicated bus lanes do not cut it. In general, de-prioritizing car culture is necessary for making Baltimore a 21st century city.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. In addition, Baltimore City is committed to growing a multi-modal transportation network that includes a wide array of bicycle and pedestrian facilities, transit-oriented development and enhancements to transit infrastructure. Baltimore City has been actively planning, designing and constructing protected bike lanes and multi-use paths with the goal of creating a multimodal network that serves all road users per the City's Complete Streets Manual. This network will expand over time as the City continues to pursue funding for implementation.

Supporting transit is evidenced by the Baltimore Regional Transit Governance and Funding Workgroup, established July 2022 by BMC's Board of Directors with the objective of preparing recommendations regarding the management of transit in the Baltimore region.

The Workgroup held four meetings from September to December 2022 and based their work on the BRTB's extensive 2021 analysis of this issue. The Workgroup considered the alternatives from the original study, and compared peer state and regional transit entities.

Each meeting was open to interested groups and individuals and included opportunities to provide comments both virtually and in-person. Prior to the creation of the final report, members of the public were invited to comment on a set of draft-final recommendations.

The Workgroup ultimately developed consensus around a set of five recommendations for timely action by our local governments, the Maryland General Assembly and the Moore-Miller administration. Out of that work, the MD General Assembly in the 2023 legislative session approved HB0794/ SB0504 - Baltimore Regional Transit Commission. This new Commission is expected to begin work in October 2023.

Thank you again for your comment.

2. **Anonymous**

We need to address car congestion not by expanding roads (which only leads to more drivers and then more traffic) but rather by expanding other forms of non-car transportation — light rail, subway, reliable and frequent buses.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Thank you again for your comment.

3. **Anonymous**

This once again reflects no community feedback and drives us on expanded highways straight into a climate crisis. We need extreme investments in public transportation in lieu of road widening.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Thank you again for your comment.

4. **Anonymous**

Please stop expanding the roads. Just build reliable mass transit it'll take people of the roads and make people less reliant on cars. If you want to see where widening highways leads look at Los Angeles. It's the poster child of sprawl. Denser walkable cities are the way forward not bigger highways.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Thank you again for your comment.

5. **Anonymous**

Better and more reliable public transit over highway widening should be the emphasis. More quality light rail options (think Amsterdam) over busses would be a huge opportunity to increase ridership and make getting around Baltimore City much easier. Regional light rail transit from downtown centers would also be huge.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Thank you again for your comment.

6. **Anonymous**

I believe more mass transit should be the focus for the future. Population growth will only continue and highways can only expand so much.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While

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Thank you again for your comment.

7. **Dave Arndt**

No more road expansion. Create bike lanes. Let's remove greenhouse gases caused by transportation.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that alternatives to driving, such as transit and bike lanes, are critical to the region's transportation system. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

In addition, nearly 3/4 of the projects in *Resilience 2050* include bicycle and pedestrian facilities as part of their project scope. *Resilience 2050* also includes $250 million in funding set-aside for strategies improving air quality in the Baltimore region. Sixteen regional bicycle and pedestrian priority projects are included in *Resilience 2050* as part of this set-aside funding (see page 30 of Chapter 7).

We encourage you to be involved in the Vision for a Regional Bicycle Network project which will begin in fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities that was developed in spring 2022. The Vision for a Regional Bicycle Network project will also go into more depth on the benefits of active transportation and potential funding sources for bicycle and multiuse projects.

Thank you again for your comment.

8. **Dave Arndt**

We need to move away from a car centric model and think mass transit, walking, bikes and scooters. Plus we need to concentrate on making mass transit reliable, today many people would like to use the bus system for work, however they can not because it is not dependable.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Regarding transit reliability, there are several ongoing MDOT MTA bus projects to increase bus reliability, speed and passenger safety throughout the core bus system. Potential targeted investments to the roadway that prioritize transit riders include curb-extensions at bus stops, transit signal priority, dedicated bus lanes, queue jumps, and more. Current corridor efforts include the RAISE Transit Priority Project (CMS to Fox Ridge), Garrison Boulevard, and the Belair Rd Gay St corridor.

MTA's Fast Forward Program is investing $43 million in our core service area by accelerating projects that create a transit system that is more reliable, accessible, and easier to use. Investments include bus stops and shelters, wayfinding, real-time information signs, and dedicated bus lanes. Three pilot dedicated bus lanes were installed on York Road, Harford Avenue, Charles/Light Street to bring quick improvements to riders.

We also encourage you to be involved in the Vision for a Regional Bicycle Network project which will begin in fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities that was developed in

spring 2022. The Vision for a Regional Bicycle Network project will also go into more depth on the benefits of active transportation and potential funding sources for bicycle and multiuse projects.

Thank you again for your comment.

9. **Spencer B**

I very much support creating a protected bike lane along Falls Road. It is frustrating that the one that is there cuts off and the existing road, Clipper Mill Road, is incredibly dangerous to bike on. It would also be great to expand the number of protected bike lanes throughout the city.

I would like Baltimore City to focus on expanding public transportation, pedestrian zones, and bike lanes instead of roadways. We need to move forward in a more sustainable and accessible direction.

The light rail is great but needs to be expanded to accommodate more areas and people.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. Regarding bicycle infrastructure, Baltimore City is committed to increasing the viability of sustainable transportation alternatives by continually growing its network of protected bike facilities, which can help reduce dependence on driving. This network will expand over time as the City continues to pursue funding for implementation.

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Thank you again for your comment.

10. **Yuki C**

I am disappointed in how many of the transit projects are pushed 25 years out. Baltimore is already struggling to keep up with its neighbors let alone the nation, and widening highways, especially without accounting for induced demand, is not the future.

We need to be on top of more rail and bus projects to be able to compete in the next part of the 21st century. Baltimore has the bones to make transit work, the streetcar system of long ago and more modern plans like the 2002 rail plan are proof that the potential is there, we just need to act on it. This region will never keep up without it.

We don't need to become Texas with highways, we need to become something better.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Thank you again for your comment.

11. Henry Cook

I have read through the *Resilience 2050* document and I find it to be a very long, very detailed document that is utterly demoralizing for anyone that wishes to address the emerging impacts of climate change in a resilient manner. I view this overall document is a dramatic missed opportunity to talk about resilient adaptations that our region must undertake to mitigate and begin to turn around carbon-induced climate change. After embarking on a year-long white paper effort to study what transportation should look like by 2050, BRTB has determined that the majority of spending must go not only to automobile-centered transportation, but also calls for more and more increased capacity to further sprawl.

Furthering my disappointment, BRTB fails to meaningfully engage with well-documented causes of congestion and sprawl, such as excessive parking requirements and exclusionary zoning.

BRTB has hyped up how this long range plan has significantly more transit spending programmed than past plans, but it is still a focus on enormous capital projects that will take decades to realize. While we wait decades for a large capital investment in public transportation, we will burn piles of cash on "highway capacity expansion" that is wasteful, counter-productive, and only adds to our automobile dependence. Somehow, a plan called "*Resilience 2050*" includes Technical Scoring that awards points for Greenhouse Gas Emission Inducing Projects! (Ref Appendix B, Table 2, page 10, where "A majority of emissions inducing components = 1 point"). A responsible long range plan

would subtract points for projects that induce greenhouse gas emissions or are projected to increase VMT.

Although I unfortunately acted too late to make the co-sign period with the Strong Towns Baltimore letter, I definitely support the comments included in that document. Michael Scepaniak and company have done a more thorough job than I could given the short time period and the exceptionally long document.

In closing, this plan would have been progressive and forward-looking a decade ago, but in 2023 we have so many other examples of truly forward-looking global cities that are changing their transportation system away from failed private vehicle priorities, this plan is simply not enough to keep our region competitive. We must do better and stop wasting precious capital funding on highway expansion!

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Thank you again for your comment.

12. Anna Ellis

This looks to be more of the same - mostly highway expansion. For the last 60+ years, we have built and/or widened highways, and yet traffic keeps getting worse. We need transit as an alternative to driving.

I see in Table 7 of the executive summary that there is a planned mid-life overhaul of light rail vehicles planned for 2028-2039. There has been a mid-life light rail overhaul going on for at least the

last 5 years. Also, Table 9 shows a planned replacement of light rail vehicles in 2040-2050. My understanding was that the process to replace light rail vehicles is in the early stages, not almost 20 years away.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Regarding your comments on the mid-life overhaul and replacement of light rail vehicles, the timelines included in *Resilience 2050* reflect those originally submitted by MDOT MTA during the call for projects in 2022. MDOT MTA is continuing work on the mid-life overhaul and plans to complete it as soon as 2024, with warranty work continuing through at least 2027. Thus, it is possible that the overhaul will be complete prior to the 2028-2039 time period. A new fleet of light rail vehicles could begin coming online as soon as 2030, depending on funding availability. While new vehicles could begin coming online prior to the 2040-2050 time period, the timeframe listed reflects completion of the conversion to low-floor rail vehicles. Completion of the fleet replacement with low-floor rail vehicles will require significant additional funding including station retrofits, modifying maintenance facilities and amending standard operating practices. Future LRTP updates will incorporate adjustments to the anticipated timeline for replacing the light rail vehicle fleet as the project progresses.

Thank you again for your comment.

13. Matt Francis

In reviewing the goals of the *Resilience 2050*, they are admirable objectives to achieve, but I am left concerned that mistakes that we as a society have made in the past will be repeated. The priority

above all else should be to maintain and expand public transport and pedestrian/cycling infrastructure.

In addressing the Zero Deaths Maryland objective, the only way to achieve this is to reduce car usage as cars are the primary cause of vehicular and pedestrian deaths on our streets. Including items like road and freeway expansion in the long term plans of the Baltimore area does not reflect the goal of having zero deaths on our roads. Increasing the number of lanes on roads will encourage speeding and dangerous driving as many studies have demonstrably shown.

Increasing the number of lanes does not solve the problem of traffic either. It creates an induced demand where people take more car trips and feel okay living in even more remote locations. The increased lane is quickly absorbed and the traffic problem still persists. The only way to decrease traffic is to increase the abundance of alternative methods of travel. This is a two fold benefit as it pulls cars off the road and prevents the need to expand our road infrastructure further.

Reducing car dependency is also key to achieving the regions goal to provide a more environmentally sustainable society. The highways that have destroyed large swaths of the Baltimore area have allowed severe sprawl to damage our city and cause large amounts of pollution and environmental harm. The reliance on cars has also had secondary effects on our health by encouraging a lack of physical movement (no walking or biking) along with the direct air pollution that cause severe health issues.

The average American now spends approximately $10,000 a year on their automobile. From an equity standpoint, this cost is the largest burden on the poor and disenfranchised (and increasingly on the middle class) in our society as the car centric infrastructure Baltimore has built over the past 70 years forces people to pay this cost in order to participate in the economy thereby continuing the cycle of poverty. If people were able to walk, bike or take public transport this can help break that cycle and the money originally spent on cars would be able to be used in the local economy to a greater degree lifting the region as a whole.

I do appreciate that there is increased focus on biking, walking and public transport infrastructure in this plan which will increase the quality of life for the citizens of the Baltimore metropolitan area. To reiterate my original fear it seems that whenever these types of improvements are put forth they get scrapped or reduced in scope due to demands that larger and larger roads and highways are provided regardless of the harm these roads cause economically and socially. One more lane will not fix our traffic problem, EV cars will not fix our climate problem and in order to achieve Zero Deaths we must provide safer and greener forms of travel.

Thank you for your consideration. I look forward to seeing how *Resilience 2050* is implemented in the years to come.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Regarding induced demand, current regional scale travel forecasting models are able to simulate some, but not all, elements of induced demand. Our model does recognize that when a roadway is improved, speeds will increase. This will result in more vehicles being attracted to this facility that may result in longer travel distances. The model also has a mode choice module that will look at alternate modes and may shift trips to/from transit or highways depending on the mode (highway or transit) travel time. These effects will show up in the Vehicle Miles Traveled (VMT) figures in Appendix C of *Resilience 2050*. Increased travel time reliability that induces additional household trip making is not captured in travel models. However, model household behavior trip rates are adjusted with the collection of observed data. Our modeling team continues to review national best practices and will try to include any modeling advancements that may improve our model in these areas.

Transportation Demand Management (TDM) strategies focus on understanding how people make their transportation decisions and influencing people's behavior to use existing infrastructure in more efficient ways, working to reduce single occupancy vehicle trips and getting people to use transit, ridesharing, walking, biking, and telework. State and federal funding supports transit, guaranteed ride home, rideshare services, as well as commuter tax credits through employers.

Thank you again for your comment.

14. Bakari H

Why is there very little going to transit? This will not make Maryland competitive with any other state if you don't expand your transit system.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While

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Thank you again for your comment.

15. Bakari H

Put more transit in here. Maryland needs to start future-proofing its transportation system and that includes transit. Not roads.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Thank you again for your comment.

16. David Highfield

As well as highway safety and bridge repair, I believe that prosperity, economic opportunity, and public service could be better accomplished by expanding Baltimore Metro and/or Light Rail into Carroll County (Finksburg area) and having it extend and connect directly to BWI Airport and Rail Station.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The policy of Carroll County, through the adopted plans and Board of County Commissioners' resolutions, has always been to provide transit services only within the County. There are currently no plans to expand this type of service outside of the County. The most recent Transit Development Plan (TDP), which provides a plan for public transportation improvements in the County over a five year period, reinforced this policy.

Thank you again for your comment.

17. David House

I appreciate the effort that has gone into this planning document and on collecting public comment. However I take issue with some of the outlined plans and goals. First, any highway expansion in this region is a waste of money. We have all the roads we could ever need and then some. The only way to ease congestion in this region is to increase options for public transit, cycling and walking. If we really want to address air quality in this region, more capacity for cars is not the way to go.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Thank you again for your comment.

18. Tim Hreha

Maximize investment in protected bike lanes and multi-use paths to create a city-wide network that connects with existing surrounding infrastructure. Minimize investment in automobile infrastructure.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. Regarding bicycle infrastructure, Baltimore City has been actively planning, designing and constructing protected bike lanes and multi-use paths with the goal of creating a multimodal network that serves all road users per the City's Complete Streets Manual. This network will expand over time as the City continues to pursue funding for implementation.

We also encourage you to be involved in the Vision for a Regional Bicycle Network project which will begin in fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities that was developed in spring 2022. The Vision for a Regional Bicycle Network project will also go into more depth on the benefits of active transportation and potential funding sources for bicycle and multiuse projects.

Thank you again for your comment.

19. Patrick Ireland

Generally I am disappointed by majority of the projects focused road expansion and road capacity increase. That does not seem to be the best way to reduce congestion and travel time, nor would it improve environmental impacts. With the additional noise and air pollution related to the increased volume of traffic (wider roads means more and higher speed traffic), this is not a sustainable solution. More focus should be put on public transit project expansion and improvement. Reducing the number of trips needed to be taken by car is the real only long term sustainable solution.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Thank you again for your comment.

20. Nathan Kalasky

Resilience 2050 is a step in the right direction, with an unprecedented amount of funding allotted to transit projects across the region, but still allocates billions of dollars to suburban road construction and expansion. This is antithetical to the region's sustainability goals. The current preferred alternative suggests stagnant transit modeshare while VMT will increase by 19%. Reducing vehicle miles traveled and increasing the transit mode share substantially need to be prioritized in the plan. The Minnesota Department of Transportation's 2050 plan reduces VMT per capita by 20%, which is projected to save the state $91bn over 30 years. The Baltimore region should embrace a similar goal. The region cannot afford to keep subsidizing unsustainable suburban sprawl, and a system preservation and transit first approach is the path forward.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Regarding a VMT reduction goal, neither the BRTB nor MDOT have a stated VMT goal. However, local and state partners are working toward slowing VMT growth or reducing it by means of Transportation Demand Management (TDM) strategies. TDM focuses on understanding how people make their transportation decisions and influencing people's behavior to use existing infrastructure in more efficient ways, working to reduce single occupancy vehicle trips and getting people to use transit, ridesharing, walking, biking, and telework. State and federal funding supports transit, guaranteed ride home, rideshare services, as well as commuter tax credits through employers.

Thank you again for your comment.

21. John L

Give me other options besides sitting in soul-crushing traffic on a newly-widened highway or road, please. Devote real resources and manpower to helping us decouple from the automobile-centric patterns of sprawling, soulless, inefficient development. Walking is transportation, so is biking- fund projects that make our neighborhoods better and healthier places to work and live.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Also, we encourage you to be involved in the Vision for a Regional Bicycle Network project which will begin in fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities that was developed in spring 2022. The Vision for a Regional Bicycle Network project will also go into more depth on the benefits of active transportation and potential funding sources for bicycle and multiuse projects.

Thank you again for your comment.

22. John L

I appreciate the heady words devoted to some admirable (non-automobile centric) goals within this plan, but I am afraid that we will once again surrender to the siren song of highway widening and induced demand when it comes time to make decisions and move out with action. Please, commit to decoupling our region from the dead end road of car-centric development with real action when it matters, otherwise we will continue to lose out in the competition for new residents and jobs to other regions with real transit networks.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Regarding induced demand, current regional scale travel forecasting models are able to simulate some, but not all, elements of induced demand. Our model does recognize that when a roadway is improved, speeds will increase. This will result in more vehicles being attracted to this facility that may result in longer travel distances. The model also has a mode choice module that will look at

alternate modes and may shift trips to/from transit or highways depending on the mode (highway or transit) travel time. These effects will show up in the Vehicle Miles Traveled (VMT) figures in Appendix C of *Resilience 2050*. Increased travel time reliability that induces additional household trip making is not captured in travel models. However, model household behavior trip rates are adjusted with the collection of observed data. Our modeling team continues to review national best practices and will try to include any modeling advancements that may improve our model in these areas.

Thank you again for your comment.

23. Quinlan M

The disparity in TIP funding between MDOT SHA and MDOT MTA is hard to believe. Similar to the LRTP, the TIP is misaligning priorities with the challenges and needs faced by the state in the future. Environmental concerns, active transportation concerns, equity concerns--these are all underrepresented. Mass transit projects are underrepresented. Highway capacity projects are over-represented. Additionally, the Red Line project has been identified as a specific priority of the Moore administration. The 2024-2027 TIP needs to reflect projections for the Red Line project and its federal funding needs.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

Regarding the inclusion of the Red Line project in the TIP, *Resilience 2050*, the long-range transportation plan, includes funding for the East-West Transit Corridor. This project is now being referred to as the Red Line by MDOT and MTA. A Red Line website has been created to share progress with the public. The TIP can only include projects that have been allocated federal funding over the next four fiscal years in a capital budget such as the MDOT Consolidated Transportation Program. Inclusion in the LRTP allows the Red Line to move forward with planning and NEPA. When the Red Line is allocated federal funding it will be added to the TIP via amendment or in the next annual update of the document. The LRTP also includes $2 billion in funding for an additional early opportunity corridor, the North-South Transit Corridor.

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Thank you again for your comment.

24. Quinlan M

Mass rail transit is significantly underrepresented in the LRTP, *Resilience 2050*. In reviewing *Resilience 2050* it appears that the primary vision for transit in the baltimore region for the next 30 years is buses, benches and signs... Please reallocate greater portions of funding to transit expansion projects, identified early opportunity regional transit corridors, the creation of transit hubs, transit system preservation projects, and increased funding for LOTS, which provide crucial services to local communities.

Additionally, the revived Red Line project needs to be included in this plan before it is approved. Given our climate and conservation crisis, equity needs, and changing societal values, we don't have time for the vision of a lagging document. We need *Resilience 2050* to meet the moment right now and be responsive to Maryland's present priorities. The BRTB is aware of Governor Moore's transportation priorities and should not willfully exclude a projection for the Red Line transit expansion project within this current document.

Additionally, please reconsider the preponderance of highway widening projects in this plan. VMT has been increasing in Maryland over time, and this plan directly encourages a continued rise in that statistic do to an overabundance of highway widening projects.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a benefit to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

Funding for the Red Line is included in *Resilience 2050* under the East-West Transit Corridor project (see project ID 9 in Chapter 7). Given the Governor's recent announcement, the final document will include a note stating that the East-West Transit Corridor is now known as the Red Line. *Resilience 2050* also includes funds for another major Early Opportunity Corridor, the North-South Transit Corridor. *Resilience 2050* includes a total of over $3.8 billion in funding for these two major transit corridors. As you note, the LRTP also includes funds for seventeen transit hubs throughout the Baltimore region, among other transit investments. *Resilience 2050* is a living document that can be amended to reflect updated project information (estimated cost, scope, etc.) as projects move forward in the planning process. Identifying projects in the LRTP allows projects to progress through required National Environmental Policy Act (NEPA) planning efforts that will determine details on the projects.

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Thank you again for your comment.

25. Daniel Paschall, East Coast Greenway Alliance

Please prioritize sustainable transportation investments over roadway expansion with new transit investment and first-/last-mile bike and pedestrian connections. In particular please prioritize the advancement of the Regional Bicycle and Pedestrian Priorities along the East Coast Greenway, namely the South Shore Trail, the Torrey C. Brown/NCR Trail Connections to the Jones Falls Trail, the MA & PA Trail Connection between Towson and Bel Air, the Baltimore Greenway Trail Network, and completing the gaps along the East Coast Greenway between the BWI Trail and South Baltimore's Middle Branch Trail on both sides of the Patapsco River, filling the gaps between the B&A Trail and downtown Annapolis, the WEE Trail, and the South Shore Trail, and creating off-road biking and walking connections in Harford County between Bel Air, Havre de Grace, and the US-40 corridor to expand on the US-40 sidepath plan between HDG and Aberdeen. Finally, please prioritize the advancement of a bike and pedestrian crossing of the Susquehanna River between Havre de Grace and Perryville along the Lower Susquehanna Heritage Greenway, the East Coast Greenway, and the September 11th National Memorial Trail.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*.

Regarding the advancement of regional bicycle and pedestrian priority projects (included in the $250 million in set-aside funding detailed in Chapter 7), we encourage you to be involved in the Vision for a Regional Bicycle Network project which will begin in fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities that was developed in spring 2022. The Vision for a Regional Bicycle Network project will also go into more depth on the benefits of active transportation and potential funding sources for bicycle and multiuse projects.

Thank you again for your comment.

26. Charlie Smith

I appreciate you opening the most recent TIP and *Resilience 2050* plan to comment.

By ignoring additional transit capacity, the TIP in its current form does a huge disservice to the region. Transit capacity, or the lack thereof, consistently cooked up as a roadblock to growth in the Baltimore region. Major employers and events pass us over due to a lack of transit capacity.

While *Resilience 2050* includes funding for transit capacity, adding even more funds for road capacity will only make our roads worse. More roads will attract more drivers - and more traffic, adding to congestion and pollution. Better transit options and funding are critical to actually changing this environment.

And while *Resilience 2050* does include over $4 billion in potential transit capacity projects, that is outweighed by over $7 billion in new roads and highways. According the plan's own modeling of the outcomes of this sort of spending plan, this will only make our region's transportation outcomes worse: more driving, more time spent in traffic and no increase in transit ridership.

Baltimore and its region is desperate for transit leadership. Please don't pass the buck to yet another generation. Let's get this done.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Regarding the lack of transit in the TIP, MTA is leading multiple efforts to expand the current transit system. The Regional Transit Plan, published in 2020, identified thirty corridors to be studied. Each corridor has or is projected to have sufficient ridership demand to support all-day, frequent transit and would require additional infrastructure investment to fully support successful transit. Additional study is needed to determine mode, specific route or alignment, levels of service and station locations. Investments may include dedicated right-of-way, signal priority, shelters or stations and

other customer amenities. Additionally, in certain corridors, transit supportive land use patterns controlled by local jurisdictions would play a critical role to make future transit successful. Currently, MTA is advancing the Red Line, which will provide an essential east-west connection from Woodlawn to Bayview with the potential for expansion to eastern Baltimore County. The North-South Corridor Study is evaluating existing and future transit demand between Towson and Downtown Baltimore. Baltimore Metropolitan Council is leading a pilot feasibility study for mid-opportunities corridors like BWI Airport to Columbia Town Center. As projects move forward and are allocated federal funds, they will be amended into the TIP or added as part of the next annual update of the TIP.

The short- and long-range transportation plans also both support state of good repair for transit. In addition to the match to federal money, Maryland devotes a considerable amount of state money to transit that is not reflected in these documents. State funds support both MTA and locally operated transit systems.

Thank you again for your comment.

27. Sharon Smith

The plan appears to be very comprehensive and inclusive. I agree that road expansions should be secondary to transit expansion.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Thank you again for your comment.

28. Nick Snider, Ross Medico, Kim Dulay, Ramie Mays, Phil Sherer, Charles McManus, Amy Sheridan, Logan Shertz, Brian O'Malley, Ian Fitzpatrick, Jeenly Louis, Brandy Savarese, Billy Humphrey, Alex Walinskas, Jo'Elie Louis

Dear BRTB Members: Thank you for the opportunity to comment on the 2024 - 2027 Transportation Improvement Program (TIP) and the region's long-range plan, *Resilience 2050*.

Unfortunately, both plans are woefully inadequate for meeting the region's transportation, economic, and environmental challenges and will, in fact, exacerbate them. The TIP proposes to spend over $900 million to widen roads and highways, while spending nothing on additional transit or commuter rail capacity. And while *Resilience 2050* does include over $4 billion in potential transit capacity projects, that is outweighed by over $7 billion in new roads and highways. According the plan's own modeling of the outcomes of this sort of spending plan, this will only make our region's transportation outcomes worse: more driving, more time spent in traffic and no increase in transit ridership.

There are many worthy projects the BRTB could be funding instead of widening highways, including:

- Increase the number of bus stops that comply with the Americans with Disabilities Act (currently only about 19% do)
- Make transit faster and more reliable in the eleven Early Opportunity Corridors identified in the 2020 Central Maryland Regional Transit Plan
- Make transit safer and more reliable by funding the backlog of state of good repair needs at the MTA that are listed in the MTA Capital Needs Inventory
- Fund the backlog of road and highway state of good repair needs before building more expansions

Our region deserves better. We've been splurging on spreading asphalt for too long while our transit, biking, and walking infrastructure lags behind. We need real leadership to step up and change our transportation trajectory. Please re-balance the spending priorities in these plans so that highway capacity projects are minimized and investments in transit, biking, and walking are maximized.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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The Workgroup held four meetings from September to December 2022 and based their work on the BRTB's extensive 2021 analysis of this issue. The Workgroup considered the alternatives from the original study, and compared peer state and regional transit entities.

Each meeting was open to interested groups and individuals and included opportunities to provide comments both virtually and in-person. Prior to the creation of the final report, members of the public were invited to comment on a set of draft-final recommendations.

The Workgroup ultimately developed consensus around a set of five recommendations for timely action by our local governments, the Maryland General Assembly and the Moore-Miller administration. Out of that work, the MD General Assembly in the 2023 legislative session approved HB0794/ SB0504 - Baltimore Regional Transit Commission. This new Commission is expected to begin work in October 2023.

The short- and long-range transportation plans both support asset management (for roads) and a state of good repair (for transit). In addition to the match to federal money, Maryland devotes a considerable amount of state money to transit that is not reflected in these documents. State funds support both MTA and locally operated transit systems.

Thank you again for your comments.

29. willy

I disapprove on any roadway lane expansion since it will only create more car traffic congestion even more. I rather use that money in maintaining the roads we have now and definitely more on public transportation in Maryland/ DMV area. We must wean ourselves from car dependence and create a more options people can get around. I prefer Project 44 for a light rail infrastructure connecting Towson to the Baltimore city (hoping it can stop at Penn Station) and the West East, Project 9.

While I do commute to Annapolis from Towson, again I disapprove of road expansion in Project 48. It's worse now for the few pedestrians and cyclists now and it'll be more deadlier if it widens for more traffic and higher speeds potentially causing more accidents. It'll be worst for the residents and businesses there since basically a 6 lane highway will cut through it. We do need better public transportation options going to Annapolis though and can potentially bring in more people and thus commerce into the capital.

While Project 29 BRT is a good idea but I feel making improvements to the light rail/ metro line there would be better investment in the long term. At least improving more frequency and time reliability on MARC train should be considered.

TL,DR Basically more public transport, walking and bike paths. And no more road expansions.

But the major roadblocks (pun intended) is the land use and stigma associated with transit and cycling/walking. And there should be marketing to more affluent people to try public transit. Perhaps at first promoting routes to fun local events happening or something to get the idea that you don't need a car for every trip or something.

In short, "A developed country is not a place where the poor have cars. It's where the rich use public transportation."— Gustavo Petro. And we know the wealthy have more influence, so we need them to get on board in public transit

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary

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Transportation Demand Management (TDM) strategies focus on understanding how people make their transportation decisions and influencing people's behavior to use existing infrastructure in more efficient ways, working to reduce single occupancy vehicle trips and getting people to use transit, ridesharing, walking, biking, and telework. State and federal funding supports transit, guaranteed ride home, rideshare services, as well as commuter tax credits through employers.

Thank you again for your comment.

30. willy

No more road expansions. More public transportation!

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Thank you again for your comment.

31. Willy Wong

I don't approve of any roadway expansion unless its adding more bike and walking paths and public transit. More roads creates more traffic. I do hope one day instead of cars people have other options of transport.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Regarding bike and walking paths, nearly 3/4 of the projects in *Resilience 2050* include bicycle and pedestrian facilities as part of their project scope. *Resilience 2050* also includes $250 million in

funding set-aside for strategies improving air quality in the Baltimore region. Sixteen regional bicycle and pedestrian priority projects are included in *Resilience 2050* as part of this set-aside funding (see page 30 of Chapter 7).

We encourage you to be involved in the Vision for a Regional Bicycle Network project which will begin in fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities that was developed in spring 2022. The Vision for a Regional Bicycle Network project will also go into more depth on the benefits of active transportation and potential funding sources for bicycle and multiuse projects.

Thank you again for your comment.

32. Willy Wong

It seems to be more focus on roadway expansion. I'd rather see public transit have more funding.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that a good transit system is critical to the region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Thank you again for your comment.

33. Eyob Worku

I'm concerned about how much road widening and interchange construction is included when improving car access is so antithetical to the listed goals of *Resilience 2050*.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that alternatives to driving such as a good transit system are critical to the

region. There are a number of significant items relating to transit in *Resilience 2050*. Regarding project scoring, transit projects became eligible for more total points than highway projects. Additional criteria were added to transit scoring that allows for more robust projects to receive higher scores. Ultimately, all transit projects that were submitted for consideration have been included in the Preferred Alternative. While additional transit and reliable transit will be a boon to many riders, highways are also a necessary component of a good transportation network that supports people and freight. This region benefits from the large and active port of Baltimore as well as access to I-95. The highways that feed into I-95 also allow for the efficient movement of goods and services to businesses throughout the region – and beyond.

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Thank you again for your comment.

MULTIPLE TOPICS (3 SETS OF COMMENTS) BRTB RESPONSES ARE SPREAD THROUGHOUT EACH SET OF COMMENTS DUE TO THE RANGE OF ISSUES SUBMITTED

1. **CMTA Coalition Letter, Signed by: Baltimore County Progressive Democrats Club, Baltimore MARC Riders, Bikemore, Cedar Lane Environmental Justice Ministry Bethesda, Central Maryland Transportation Alliance, Climate Reality Greater Maryland, Coalition for Smarter Growth, Downtown Residents Advocacy Network (Baltimore), Elders Climate Action Maryland, Fix Maryland Rail, Greater Baltimore Group of the Sierra Club, Indivisible Howard County MD Climate Action, Maryland Sierra Club, Our Revolution Baltimore City/County, Policy Foundation of Maryland, St. Vincent de Paul Green Team, Transit Choices**

   Thank you very much for the opportunity to comment on the draft long-range transportation plan, *Resilience 2050*, as well as the draft short-range Transportation Improvement Program (TIP). As stakeholders in the Baltimore region, many of our organizations have been commenting on previous TIPs and, despite not seeing any changes in the spending priorities of the region, we continue to believe it is crucial to offer constructive feedback and to hold regional leadership accountable for their votes to approve these plans.

   2024 - 2027 TIP

   In line with comments from previous years, we once again object to the lopsided spending priorities in this year's TIP. For the third year in a row, our region's TIP has zero dollars programmed for transit capacity or commuter rail capacity. Meanwhile, also for the third year in a row, highway capacity projects exceed $900 million. Year after year, new highway capacity projects get added into the TIP's

project pipeline and the result is that every single year we add new lane miles to our road network. Historically, the results are dismal. For example, according to a Central Maryland Transportation Alliance analysis of data from the Texas Transportation Institute, the region increased highway lane miles by 76% from 1982 and 2011. During that time, the region's population grew from 1.7 million to 2.5 million – a 48% increase. Freeway expansion far outpaced population growth so we had more lane miles per person, but congestion got worse. Congested lane miles increased from 31% to 58% and the annual hours of delay per auto commuter more than quadrupled – from nine hours a year to 41 hours a year.

Trying to widen our way out of congestion is a proven failed strategy. As stated in previous comment letters, the region is in a deep transportation hole and the first thing we need to do is put down the shovel and stop adding new road and highway expansion projects to the TIP. Once again, we ask the BRTB to remove from the Draft TIP, the three highway capacity and road widening projects listed in "Table II-2: New Projects in the 2024-2027 TIP". Prioritizing highway capacity projects over investment in transit, biking, walking, and ADA compliance is a policy choice that the BRTB continues to make despite having options to change course. The massive Infrastructure Investment and Jobs Act (IIJA) provides a once-in-a-generation opportunity to transform transportation in Maryland in the right direction. Federal guidance on how to implement the IIJA allows states to transfer up to 50% of certain formula funds traditionally thought of as highway formulas to programs that allow for spending on uses such as transit, biking, pedestrian infrastructure, and vehicle electrification. Specifically, states are allowed to spend funds from the two largest formulas, the Surface

Transportation Block Grant (STBG) and National Highway Performance Program (NHPP), on transit, biking and pedestrian infrastructure. However, the state of Maryland treats them as highway formulas, spending over 97% on roads and highways, much of it on new capacity. Looking at our region in particular, according to the draft TIP, we're expecting over $600 million in STBG and NHPP funds for FY 24. Of those funds, zero dollars are being flexed to transit or commuter rail and just $2.5 million are being flexed to bicycle or pedestrian projects – that's flexing less than 0.5%, well below the already anemic statewide amount.

BRTB Response: MTA is leading multiple efforts to expand the current transit system. The Regional Transit Plan, published in 2020, identified thirty corridors to be studied. Each corridor has or is projected to have sufficient ridership demand to support all-day, frequent transit and would require additional infrastructure investment to fully support successful transit. Additional study is needed to determine mode, specific route or alignment, levels of service and station locations. Investments may include dedicated right-of-way, signal priority, shelters or stations, and other customer amenities. Currently, MTA is advancing the Red Line which will provide an essential east-west connection from Woodlawn to Bayview with the potential for expansion to eastern Baltimore County. The North-South Corridor Study is evaluating existing and future transit demand between Towson and Downtown Baltimore. Baltimore Metropolitan Council is leading a pilot feasibility study for mid-opportunities corridors like BWI Airport to Columbia Town Center.

MTA's Fast Forward Program is investing $43 million in our core service area by accelerating projects that create a transit system that is more reliable, accessible, and easier to use. Investments include, Bus Stops and Shelters, Wayfinding, Real-Time Information Signs, and dedicated bus lanes. Three pilot dedicated bus lanes were installed on York Road, Harford Avenue, Charles/Light Street to bring quick improvements to riders.

Resilience 2050

Similar to the TIP, the draft long-range transportation plan, *Resilience 2050*, falls well short of improving transportation outcomes for the region. We do note that *Resilience 2050* includes significant transit capacity projects such as the East-West transit corridor, the North-South transit corridor, and US 29 Bus Rapid Transit – totalling over $4 billion. However, the plan also calls for almost $7 billion in roadway expansion projects, which would completely swamp any progress made on the transit expansions. As mentioned above in our TIP comments, the region has been spending zero dollars on transit capacity year after year while continually adding new lane miles. The region's transit system is so far behind at this point that we need to be spending disproportionately more on transit capacity than road capacity to make up for lost ground. Remember that the region hasn't added any real transit capacity since the mid-90s, while it's been adding road capacity every single year.

The modeled results of *Resilience 2050* indicate that the focus on expanding roadway capacity will not improve transportation outcomes for the residents of this region. Appendix C, Table 2 shows the quantified results for congestion and other performance measures. According to the model, building out the plan in *Resilience 2050* will result in the following:

- People will drive more. An increase in average daily weekday vehicle miles traveled per person (going from 24.1 VMT/capita to 25.3 VMT/capita)
- People will spend twice as much time stuck in traffic. An increase in average daily weekday hours of delay per person (going from about 9 minutes of delay per day to 18 minutes of delay per day)
- Transit will continue to languish as an option. Zero increase in the share of population riding transit (staying at 3.6%)

Additionally, *Resilience 2050* plans for our roadway conditions to deteriorate in the near term. Our current baseline is that 52% of our interstate highways are in good condition. By 2026 that number is expected to fall to 43%. Our current baseline of non-interstate pavement in good condition is 24%. By 2026, that number falls to 22%. (Source: *Resilience 2050*, Chapter 5, Table 15). In essence, taking the TIP and *Resilience 2050* together, the BRTB has proposed spending $74 billion to maintain the status quo for transit ridership, while forcing people to drive farther in worse traffic on crumbling roads. We can and must do better. At minimum, please remove the new highway capacity projects being added to this year's TIP and increase spending on system preservation and new capacity for transit, biking and pedestrians.

BRTB response: The BRTB shares your desire to focus on improving the transit system in the Baltimore region. As such, the Board adopted every candidate transit project that was submitted for consideration in *Resilience 2050*. The Board is also expanding planning efforts around other transit projects that could translate into new candidate projects for future plan updates.

We also support MDOT's Commuter Choice program that offers financial support for rideshare coordinators in each jurisdiction, a statewide Guaranteed Ride Home program and other programs such as the incenTrip mobile app. On the pedestrian side consider Walktober. October in Maryland becomes WALKTOBER, a month where the Maryland Department of Transportation (MDOT) and other partnering agencies promote and host events and webinars spotlighting Maryland pedestrians' safety, health and commuting options in current walk programs and Initiatives.

Thank you for your comment and for participating in the planning process for *Resilience 2050*.

2. **Robert Reuter**

You have a 346 page document but no where does it say how to comment. Had to go to a sub page on your advertisement flier.

This document falls under the category of "if you can't dazzle them with your brilliance, bury them in redundant numbers and useless facts. This document is a textbook case of that.

Before I even comment on the facts when I could dig them out some examples of how you have managed to hide the facts.

- All sorts of beautiful photos of mostly non highway transportation, you had more photos of bikes than you had projects for them, same for light rail and commuter rail.
- Even when you presented transit projects they weren't really for the actual user, and mostly suburban commuter buses, buses, buses and more buses. But only a few photos of buses.
- Statistical data that ends mostly in 2020 the middle of the pandemic, I am sure more data has come in the 3 years since then to make the charts and data more reflective of reality.

BUT THE WELL HIDDEN MEAT OF THE DOCUMENT:

- Almost 2/3 of the money goes towards highways and what little is set aside for other projects often is used for highways or pavement projects.
- you have over a dozen transit hubs, People don't want hubs that is for the convince of the transit operator not the rider. Passengers want to be on something that is moving not transferring from vehicle to vehicle. Eliminate all the funding for transit hubs. Put in some transit shelters but little else in needed.
- Bus Rapid Transit is nothing more than a bus with lipstick, it is still a bus. And it takes 8 buses to equal one light rail train (400people on Light rail 50 on the bus.) and BRT is not really "rapid" it is just in the name. A bus last 12 years a light rail vehicle 40 yrs so to equal one light rail train oven it's lifetime one would need at least 32busus (and drivers) the buses alone would be over 30million dollars at today's prices and of course the price would go up. A 3 car light rail train would cost less than that and give a smoother ride and draw more passengers.
- There are several levels of bus rapid transit, you can't get gold standards with bronze level funding, Every report shows that to achieve gold level BRT standards one would have to spend the same or more than one would spend on light rail. To get decent East-West service by bus across downtown Baltimore one would need to COMPLETELY take over one of the East-West streets thru downtown Baltimore, or dig a bus tunnel which would need to be larger in diameter than a light rail tunnel. So again more expensive.

Of course this would not happen because no bus rapid transit line in the USA carries the volume of people that routinely ride light rail. BRT is penny wise but pound foolish. Oh and the "flexibility" of BRT argument is actually an argument against BRT as people don't want their transit to move. Part of the reason that "the LINK" was losing 3% of it's ridership per year before the pandemic. The only people that made out well with bus flexibility are used car dealers. I know several regular bus riders that after the change squired a used car, to the detriment of the environment.

- The document says that Baltimore will acquire 350 battery electric buses in the plan, but they have yet to even test in service their first battery Electric bus.What about the rest of the fleet?
- And this acquiring battery electric buses goes exactly the opposite of what MDOT is doing

with MARC buying Diesel buses that run on an electrified railroad, Nothing more polluting than a diesel train under electric wires.

- MARC is a gem that is ignored in this document. Yes in the next 25years you will fix up a few stations. But that is all. Nothing on the Brunswick line or Camden line just fix up a few stations on the Penn line.
- A long advanced plan to extend the current subway from Johns Hopkins hospital to Ashland street and then East to a terminal at a station with the MARC Bayview station and station of the Red Line light Rail system. Making for a major transit hub. And a park and ride or rail terminal could be built on the contaminated steel plant site just West of Bayview
- Not one word about the long planned extension of Marc Penn line Service to Elkton and Newark DE. This natural connection with SEPTA would allow full commuter service all the way from DC to New Haven CT. Why not.
- The document keeps referring to the Cromwell/Glen Burnie station on the light rail line, the line is a mile short of Glen Burnie with a 66ft wide right of way waiting for the light rail to go to Glen Burnie, but not a word is this document about finishing the light rail line we already have into it's natural destination downtown Glen Burnie.
- Why does this document propose cheap BRT for the purple line extension from New Carrollton to Dorsey. It is a long known fact that as much as 50% of potential ridership is lost with a forced transfer.
- And while the deconstruction of the highway to nowhere is long overdue it would also destroy the natural Right of Way for any potential East-West rail line either subway or light rail. And there is no mention of where the route 40 traffic that cunnertly uses the highway to nowhere would go. This traffic will not vanish with the removal of the roadway.
- Bikes and cars do not mix well. Will more and more lanes be removed along with the parking so more bike ways can be constructed, on will bikes be forced to mingle with traffic, possibly with severe consequences. And making lanes narrower does not help it just makes for more fender benders in the tighter traffic.
- Most of the highway projects are in the rural or semi rural areas of the state surrounding Baltimore metro area, this takes for farmland and woodlands out of useful service, and of course many thousands of mature trees.

BRTB Response: Details about our public meetings to discuss the *Resilience 2050* plans in more detail are listed on the second of three tabs on our *Resilience 2050* PublicInput project page, 'Public Meetings.' In addition to in-person meetings with each of our jurisdictional partners at various times on weekday evenings throughout the comment period, we hosted a virtual meeting on Wednesday, May 24 at 12 p.m. We apologize if you missed us, and encourage you to view a recording of the meeting available on our YouTube channel (@BaltoMetroCo). Also, in our print ads we weren't able to include more details beyond the address of each meeting due to space and budget limitations. Going forward, we will more carefully consider ways to share more detailed information about how to access in-person meetings.

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BRTB Response: MTA is leading multiple projects that focus on improving service, particularly for core bus. For instance, MTA's Fast Forward Program is investing $43 million in our core service area by accelerating projects that create a transit system that is more reliable, accessible, and easier to use. Investments include bus stops and shelters, wayfinding, real-time information signs and dedicated bus lanes. The goal of these investments is to improve the customer experience and improve reliability across the system.

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BRTB Response: Transit hubs were identified in the Central Maryland Regional Transit Plan (RTP) as an important feature of the transit network. Transit is most effective when it works as a robust network, allowing riders to transfer between lines to take full advantage of the system. Transit hubs are important for both transit passengers and transit operators. Well-situated and well-designed transit hubs can significantly improve transferring from one system, mode or vehicle to another. Additionally, having layover space and operator rest and relief space in the right places in the network is crucial to effectively and efficiently route and schedule service, eve for one seat rides.

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BRTB Response: Through the Regional Transit Plan studies MTA is investigating both Light Rail and Bus Rapid Transit as potential options for transit expansion. Both Bus Rapid Transit and Light Rail have various trade-offs in their capital and operating characteristics. These trade-offs will be evaluated as the Regional Transit Plan studies move forward.

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- The document says that Baltimore will acquire 350 battery electric buses in the plan, but they have yet to even test in service their first battery Electric bus. What about the rest of the fleet?

BRTB Response: The Maryland Greenhouse Gas Reduction Act Reauthorization set a 40 percent reduction target for statewide emissions by 2030 from 2006 levels. MTA subsequently established a goal to convert 50 percent of its Core Bus fleet in Greater Baltimore to zero emission buses (ZEBs) by 2030. This goal was also included in the 2020 Greater Baltimore Regional Transportation Plan (CMRTP), along with a longer-term goal to convert 95 percent of the Core Bus fleet to zero-emission buses by 2045. The passage of Senate Bill 137 in 2021 and of Senate Bill 67 in 2022 prohibited MTA from entering into new procurements for non-ZEBs beginning in fiscal year 2023. Phase II of the Zero Emission Bus Transition to a 95% zero-emission fleet by 2045 is included in the *Resilience 2050* preferred alternative and is detailed on page 26 of Chapter 7.

In 2022, MTA ordered its first seven zero-emission buses which will be delivered and put into service this year. Utility upgrades have been completed to power vehicle chargers at the Kirk Bus Division and implementation of a training plan has begun across the Administration. Additionally, MTA advanced engineering and operational planning for the ZEB transition by issuing a Request for Proposal (RFPs) for a new multiyear zero-emission bus contract, a bus depot, support chargers, and an electrification partner to install and support chargers. For the Eastern Division, which will be reconstructed into one of the first bus divisions purpose-built for BEBs in the U.S. MTA is advancing design and applying for federal grant opportunities to upgrade this critical bus division.

- And this acquiring battery electric buses goes exactly the opposite of what MDOT is doing with MARC buying Diesel buses that run on an electrified railroad, Nothing more polluting than a diesel train under electric wires.

BRTB Response: The MARC system includes both diesel and electric locomotives. The expected useful life of MARC locomotives ranges from 20 to 30 years. MTA will replace MARC locomotives as they reach their useful life. Currently the Camden and Brunswick Lines are not electrified requiring diesel locomotives from an operational perspective. With the upgrades to the Frederick Douglas Tunnel only electric locomotives will be used on the Penn Line after the construction of this critical asset.

- MARC is a gem that is ignored in this document. Yes in the next 25years you will fix up a few stations. But that is all. Nothing on the Brunswick line or Camden line just fix up a few stations on the Penn line.

BRTB Response: MTA recently released the Brunswick Line Study Technical Report that provides markets for increased ridership, potential future service enhancements on the Brunswick Line. MTA coordinates with host railroads for investments and service enhancements. MTA will continue to advocate for improvements to the host rail road right of ways to improve MARC service.

- A long advanced plan to extend the current subway from Johns Hopkins hospital to Ashland street and then East to a terminal at a station with the MARC Bayview station and station of the Red Line

light Rail system. Making for a major transit hub. And a park and ride or rail terminal could be built on the contaminated steel plant site just West of Bayview.

BRTB Response: MTA is currently working on 30% Design for a new Bayview MARC Station in East Baltimore. The design of this station prioritizes multimodal connections, making it future-ready for a robust transit hub.

- Not one word about the long planned extension of Marc Penn line Service to Elkton and Newark DE. This natural connection with SEPTA would allow full commuter service all the way from DC to New Haven CT. Why not.

BRTB Response: MARC-SEPTA connection is outside the jurisdiction of this planning document. The project is included in the long range transportation plan for the Wilmington Area Planning Council (WILMAPCO). However, the importance of the project along with BRTB support is noted on page 35 of Chapter 7. The BRTB continues to support this project, but it is not included in the *Resilience 2050* preferred alternative to avoid double counting the project with the WILMAPCO LRTP. MTA is working on expanding the MARC service to Newark and/or Wilmington. The agency is actively engaged with its partners in Delaware and host railroads to identify the steps needed to implement a pilot service between Perryville and Newark, DE.

At the June 2023 meeting of the BRTB, MDOT MTA gave a presentation on progress to date with the MARC-SEPTA connection as well as the MARC-VRE connection to the south.

- The document keeps referring to the Cromwell/Glen Burnie station on the light rail line, the line is a mile short of Glen Burnie with a 66ft wide right of way waiting for the light rail to go to Glen Burnie, but not a word is this document about finishing the light rail line we already have into it's natural destination downtown Glen Burnie.

BRTB Response: The Cromwell/Glen Burnie light rail station was opened in 1993. This was part of an extension of the original line, and was never intended to extend to downtown Glen Burnie. Further extension into downtown Glen Burnie is not mentioned in the Central Maryland Regional Transit Plan, and is not currently being considered.

- Why does this document propose cheap BRT for the purple line extension from New Carrollton to Dorsey. It is a long known fact that as much as 50% of potential ridership is lost with a forced transfer.

BRTB Response: Two transit expansion projects in *Resilience 2050* connect to purple line stations. The first, submitted by Anne Arundel County, is a new express bus service between Parole and New Carrollton. The second, submitted by Howard County, is a new BRT line along US 1 from the Dorsey MARC Station to the College Park Purple Line Station. The BRTB supports the importance of these regional transit links and to more closely linking the Baltimore and Washington regions via transit access. While future considerations for these connections could include rail, or some other form of higher capacity transit, in the next 25 years we anticipate express bus service and/or BRT as being the most likely to get implemented within the fiscal constraints of this plan. If we were to allocate the amount of resources required towards a rail connection for these corridors in *Resilience 2050*, numerous other projects would have to be eliminated from the plan to stay within the anticipated revenues as shown in the *Resilience 2050* Financial Plan (Chapter 6). Should the proposed services be provided as planned in *Resilience 2050*, the ridership for these routes could provide justification for further service enhancements including increased frequency and potentially upgrades to a higher frequency mass transit option. Anne Arundel and Howard Counties will continue to advocate for the expansion of regional transit services to the Maryland Department of Transportation for inclusion in the annual Consolidated Transportation Program.

- And while the deconstruction of the highway to nowhere is long overdue it would also destroy the natural Right of Way for any potential East-West rail line either subway or light rail. And there is no mention of where the route 40 traffic that currently uses the highway to nowhere would go. This traffic will not vanish with the removal of the roadway.

BRTB Response: MTA is working with Baltimore City DOT on the Reconnecting Communities grant. Right of Way for transit is a priority for both agencies. The Red Line project team will work in collaboration with projects being led by partner agencies including The Reconnecting Communities\West Baltimore United planning study which will evaluate approaches to accommodating both transit and private vehicle travel through the study area.

- Bikes and cars do not mix well. Will more and more lanes be removed along with the parking so more bike ways can be constructed, on will bikes be forced to mingle with traffic, possibly with severe consequences. And making lanes narrower does not help it just makes for more fender benders in the tighter traffic.

BRTB Response: The Maryland Department of Transportation (MDOT) and local partners are committed to improving safety and multimodal accessibility for all users on its network. The *Context-Driven: Access and Mobility for All Users Guide* is a planning and design resource offering guidelines centered on establishing safe and effective multi-modal transportation systems. This guidance includes evaluating the feasibility of implementing proven safety countermeasures and innovative treatments, such as protected bicycle facilities, where feasible.

- Most of the highway projects are in the rural or semi rural areas of the state surrounding Baltimore metro area, this takes for farmland and woodlands out of useful service, and of course many thousands of mature trees.

BRTB Response: In many cases the State Highway Administration or local jurisdiction have sufficient Right-of-Way to accommodate a lane widening. Regardless, there are requirements related to environmental impacts that would preclude any project from carelessly taking trees, let alone thousands of trees.

Thank you again for your comments.

3. **Strong Towns Baltimore**: **Michael Scepaniak, Co-president, Cockeysville; David House, Co-president, Beechfield; Zachary Blanchard, President, Federal Hill Neighborhood Association; Danielle Bjorndalen, Beechfield; Nick Snider, Remington; Sarah Story, Westgate; Joshua Spokes, Woodberry; Alex Grube, South Baltimore; Tevis Tsai, Parkville; Omar Hamza, Madison Park; Shaun Lehmann, Ellicott City; Patrick Ireland, Towson; Charlie Smith, Towson; Ann Greenbaum, Towson; Tristan Stefanovic, Belvedere/Chinquapin; John Locke, Catonsville; James Pizzurro, Towson; Carson Drew, Old Goucher; Yuki Clarke, Woodbourne-McCabe/Govans; Josh Kelley, Baltimore; Mariel Acosta, Highlandtown; Nathan Kalasky, Glen Burnie; Melanie Scheirer, Mt Clare; Josh Poland, Federal Hill; Joshua Black, Butchers Hill; Brandy Savarese, Reservoir Hill; Chris Guinnup, Hampden; Michael Martin, Catonsville; Alisa Williams, Greenmount West; Thomas Dutkiewicz, Bolton Hill; Bleakney Matthew, Riverside**

   Separately supported: Adam Jones, Jay Louis

   Just as the Baltimore Regional Transportation Board (BRTB) obviously spent significant time and effort putting together Resilience 2050, the latest long-range transportation plan (LRTP) for the Baltimore metropolitan region, we have spent significant time and effort reading and analyzing it. We feel fortunate that our region is represented by such a professional and capable organization, who we can count on to create and circulate such top-notch plans.

As an organization which seeks to de-emphasize automobile-centric land use and development practices, we take the comment opportunity provided by the BRTB seriously. Given our aims, we see much to applaud in this LRTP, including the following:

- The advantage given to transit projects in the scoring process.
- All of the 36 transit projects submitted for consideration have been selected for inclusion in the preferred alternative.
- The inclusion of major transit expansion and preservation projects such as the East-West Transit Corridor, the North-South Transit Corridor, and a transition to low-floor Light Rail Vehicles.
- Approximately "70 percent of the Resilience 2050 projects include pedestrian and bicycle facilities".

With that being said, we also see many elements in the LRTP that give us pause and we feel merit reconsideration by the BRTB.

More Project Details

Despite the length of the plan document, it somehow fails to provide adequate detail regarding each individual project included in the preferred alternative.

We'd like to see a concise rationale provided for each project. Without that, we are left to guess what each project seeks to accomplish.

While the document clearly explains the components that factor into the technical score from a methodology standpoint, the document does not provide a breakdown of those itemized component scores for each specific project. Lacking those itemized amounts, we are left scratching our heads in trying to determine how a project such as US 1 from the Baltimore County Line to MD 175 (37 points) managed a technical score that is higher than the East-West Transit Corridor (35 points) and US 1 Corridor Bus Rapid Transit (33 points).

We'd like to see the policy scores assigned by each jurisdiction (BRTB member) to their submitted projects, so the priorities of each BRTB member are made clear.

No Highway Expansions

While the content of the plan document seems to place a majority of its focus on transit and active transportation, the actual preferred alternative seems to remain focused on roadways. In this way, the document comes across as somewhat of a marketing brochure, with 59% of the relevant document photographs (36 of 61) depicting the former, but 58% of the project dollars ($18.8B of $32.5B) earmarked for the latter.

That 58% includes 47 expansion projects, of which 34 call for additional automobile lanes. While we acknowledge that we aren't privy to the rationale behind each project, based on what we can surmise, we find nearly all of these roadway expansions to be poor choices.

Most of these expansions (with the exception of the I-695 at Broening Highway Interchange) appear to be in low density, automobile centric suburbs with exclusionary zoning in place that will prevent them from ever evolving beyond their initial state. With their development potential capped, their present and future productivity yield is likewise capped. Adding the liability of maintaining these additional lane miles (upwards of 250 lane miles, by our estimate) into perpetuity - in support of such low-return development - is fiscally irresponsible.

The plan seems to make the argument that highway expansions in these areas are necessary to improve connections of currently disconnected areas. However, our elected leaders (and BRTB members), both past and present, have willfully steered **substantial** automobile-centric greenfield development into areas of our region with **insubstantial** automobile-centric infrastructure. Circling back around after the fact and declaring that these "disconnected" areas require expensive automobile infrastructure expansions is a flawed and self-perpetuating chain of logic which needs to stop. We can't afford to continue with it.

One helpful graph that the plan document needs to add is one that plots the population growth forecast for the Baltimore region against the growth of system preservation costs in the Baltimore region (which would be based on historical growth). For the former, the plan document (under "Forecast Population, Household, and Employment Growth for the Baltimore Region") forecasts a **12.6% increase in population** from 2020-2050. For the latter, we have to do our own math.

Based on the dollar amounts provided in the "Baltimore Region State and Federal Operating, System Preservation and Expansion Revenue Forecast: 2028-2050" table in the plan document, we calculate a 103% increase in expenditures. However, when adjusting for the constant 4% rate of inflation that the plan document assumes, we get a number that is nominally higher than the $1,202 number provided in the table. This would seem to imply that the forecast assumes a **reduction** in (inflation-adjusted) system preservation costs between now and 2050. Is this reasonable?

In BRTB Resolution #23-13, MDOT provided historical Operating & Capital Expenditures - Statewide. In 1981, system preservation costs were $111M. In 2022, they were $1,931M. Over this 41 year period, the average inflation rate was 2.91%. Adjusted for inflation, that $111M equates to $363M. Yet $1,931M is many multiples more than $363M - **432% more**.

Please forgive us for any misunderstandings or math errors here. We'd much prefer to see the BRTB perform and provide these calculations. Specifically, we'd like to see the plan document provide the historical rate of increase (or decrease) in system preservation costs for the Baltimore region, extrapolate that out to 2050, and then compare that against the forecasted population growth rate. If the BRTB feels that this historic trend of cost increases will not continue into the future, the plan document should explain why. Lacking that, we are left wondering how the BRTB feels that they can justify adding on even more infrastructure liabilities to serve low-density developments. How do they foresee the tax base covering the resultant escalating system preservation costs?

The BRTB members (our county executives) pushing for these roadway expansions need to, instead, enable denser development in already well-connected areas via zoning reforms and transit.

Shaping Socioeconomic Changes

We find the socioeconomic forecasting portion of the plan document to be very frustrating. This entire section of the document takes a tone that implies transportation and land use decisions follow predetermined and unalterable trends which the BRTB is powerless to resist. Some examples:

- "Will migrants' residential location choices continue the region's sprawling residential pattern and increase demand for automobile infrastructure improvements? Or will migrants' residential location choices cluster in densely populated urban neighborhoods served more by non-automobile modes such as transit, walking and biking?"
- "The population of the Baltimore region is aging, mirroring national trends. A variety of factors are contributing to the demographic shift, including the large size of the aging "baby-boomer" generation, advances in science and medicine resulting in longer lifespans and changes in fertility rates largely due to differences in family formation preferences (many are having fewer children, later in-life)."

- "Understanding the age structure of the population can help planners anticipate demand for age-specific services… and make adjustments to the transportation system in order to better accommodate a changing age distribution."
- "Will WFH [(work from home)] increase sprawl? What are the implications to future land use?"

The BRTB members are not powerless observers to demographic and socioeconomic changes. Rather, such changes are strongly shaped by choices made by the BRTB in the LRTP. Through the transportation and land use decisions they make, the elected leaders comprising the BRTB are not simply making adjustments to accommodate predetermined forces, they are proactively shaping them.

If migrants choose to embrace the "sprawling residential pattern" and if WFH increases sprawl, it will be because that is the pattern powerful governmental forces (which are in control of transportation and land use policies) have been enabling and favoring since the end of World War II. If the Baltimore region continues to age in lock step with the nation, it will be partly because housing is unaffordable to younger residents, which is largely due to land use policies that dictate exclusionary zoning and expensive accommodations for automobiles.

Again, **the BRTB members are not powerless observers** or pawns to forecasted changes and shifts. They shape and induce them. They need to take responsibility for that role and plan and build accordingly. For the BRTB members to absolve themselves of all responsibility for who chooses to live in the Baltimore region, where in the Baltimore region they choose to live, and how they choose to move about the Baltimore region, is unacceptable.

Safety

It is clear that safety has become a major focus of the LRTP, what with the BRTB opting to double the technical points for safety in Resilience 2050 (as compared to the previous LRTP). However, the plan document demonstrates a lack of will on the part of government leaders to make decisions and sacrifices that will truly move the needle with regard to safety, at least when it comes to non-motorists.

The Look Alive campaign with Signal Woman and the law enforcement training seminar referenced in the plan document are continuations of a well-established practice of placing nearly all blame for crashes on drivers and road users, without placing any responsibility at the feet of roadway engineers. The Context-Driven Guide and Toolkit developed by the MDOT SHA is a nice step toward rectifying this, but the jury is still out on how effective it will prove to be in changing a culture that provides significant room for error on the part of drivers, but almost no similar affordances for non-drivers, especially when it comes at the expense of negatively impacting vehicular flow.

In comparison to the well-recognized and well-regarded Safe System Approach, MDOT SHA's home-grown Context-Driven Guide and Toolkit feels very watered-down and lacking in conviction. It is our hope that, sooner rather than later, the engineering professionals at the MDOT SHA will come to accept their outsized influence and responsibility when it comes to the safety of vulnerable road users and fully embrace the Safe System Approach.

In 2019, Maryland enacted a Vision Zero law that states the following: "THE GOAL OF VISION ZERO IS TO HAVE ZERO VEHICLE–RELATED DEATHS OR SERIOUS INJURIES ON STATE HIGHWAYS ROADWAYS BY THE YEAR 2030."

And yet, for simply the Baltimore region alone, the plan document's target for "Number of Non-motorized Fatalities and Serious Injuries by 2030" is 281. MDOT (and, by extension, the BRTB) has completely failed to provide any set of projections or identify any sort of corrective measures that

track to a 0 by 2030. In lieu of this, both parties have, instead, chosen to set their sights on "realistic" targets. We are left to conclude that MDOT has not put together a plan over the course of the past 3+ years to achieve Vision Zero. This is not acceptable.

What we get, instead, is the plan document calling for "research into better understanding the causes of bicycle and pedestrian crashes and injuries". There is no mystery here. The causes are interactions between fast-moving automobiles and everyone else. Given this, there is a rather simple solution readily available: slower roadway speeds. Unfortunately, it is a solution that exposes the BRTB's biases.

A pedestrian's odds of dying when struck by an automobile traveling at 40 MPH is 3-5x higher than at 30 MPH. At a rudimentary level, implementing slower speeds can take the form of lower posted speed limits on all non-highways. Over time, engineers could then work to implement road treatments that affect lower design speeds. (This is where embracing the Safe System Approach comes into play.)

We have to wonder how many projects in the LRTP preferred alternative incorporate slower roadway speeds. We speculate that the answer is "none". And we'll venture to guess that the reason why is "congestion". However, in the section(s) of the plan document focused on the BRTB's Congestion Management Process (CMP), the goal cited frequently is "improve travel time reliability" (as opposed to "travel time", period). If we take this to heart, we see no reason why slower speeds should prove so difficult for the BRTB to embrace. Yet, it would appear they are.

One of the goals listed in the plan document's executive summary is to "enable all individuals to reach their destinations safely and seamlessly". Nowhere in this goal does it say "fast". But, it seems clear that speed is an unspoken and assumed goal, at least for individuals driving automobiles.

This focus on minimizing automobile congestion (and maximizing vehicle speed/flow) comes at the expense of non-motorist safety and convenience in myriad ways. A couple obvious examples are roadway designs opting against including crosswalks that will interrupt the flow of traffic - and intersections with broad, open corners and slip lanes that drivers can take at speed.

A similar bias would appear to be in place when it comes to safety, where the safety of individuals driving automobiles takes precedence over the safety of individuals outside of those automobiles. In short, geometries that make the transportation system **safe** for motorists frequently make it **unsafe** for non-motorists. Think wide lanes on straight, level roadways with unobstructed clear zones to the sides. Contrast this with the geometries of a roadway that are more favorable to the safety of non-motorists (think narrow, complex, and twisty). The thing is, these alternative geometries result in slower **design speeds**, which is safest for **everyone**.

We would hope that it goes without saying that adding lanes to such a roadway already biased toward the safety and comfort of motorists only makes that roadway even less safe for non-motorists. This remains the case even if those additional lanes are accompanied by complete streets elements.

In the LRTP, where the preferred alternative roadway projects are listed, for 34 of the 47 Roadway Expansion Projects (72%), the project description calls for widening to accommodate additional lane miles. In contrast, those project descriptions mention bicycle and pedestrian improvements and accommodations (sometimes qualified by "within project limits"), only at the end. As such, these complete streets elements seem to come across as add-ons and secondary.

When we commented on this at a recent CMP meeting, we were told that, while lane additions are the most expensive component of these projects, they are not necessarily the priority. While we would

like to believe that, we find it very hard to do so. Even if the claim is true, including complete streets treatments in these projects will have minimal positive impact for non-motorists. The benefits yielded by isolated segments of bicycle lanes, especially when not protected from automobile traffic, are easily negated by additional lanes of traffic.

One of the goals listed in the plan document is to "invest in high quality, safe, sustainable and comfortable bicycle and pedestrian facilities, with an emphasis on facilities that are separate from vehicular traffic". We applaud this. However, we would like to see the preferred alternative projects explicitly commit to separated or protected facilities - via inclusion of such wording in their descriptions. Given the plan document's frequent mentions of safety for non-motorists, we don't feel that this is asking for too much. And given that Baltimore County, in particular, has yet to build **any** on-road protected bicycle infrastructure, we feel that we have reason to be skeptical.

Induced Demand

We find it noteworthy that the plan document, in general, and the Congestion Management section, specifically, makes no mention of or acknowledgement of induced demand. When applied to transportation, "induced demand" refers to the idea that increasing roadway capacity encourages more people to drive, thus failing (over the long run) to reduce congestion.

Given that so much of the preferred alternative is focused on roadway expansion, and that the phenomenon of induced demand is (we believe) well-known and well-proven, it seems to us that this disconnect needs to be addressed. Granted, the content of the Congestion Management section speaks primarily to non-expansion strategies. A simple scan of the "Likely Congestion Management Strategies" table yields repeated mentions of non-expansion strategies that we favor (such as public/active transportation). But, that same table also makes frequent mention of "Roadway changes (new lanes)".

Is the BRTB membership somehow of the opinion that induced demand is a discredited and meritless concept? Regardless, we'd like to see it addressed and an explanation provided as to how the preferred alternative will **not** induce additional demand for future roadway expansions. If the BRTB were to fully embrace the exercise, they could go further and provide an analysis of how expanding and improving transit and active transportation infrastructure goes on to induce more demand for those modes of travel, as well.

Low Standards for Transit

The "Analysis of Preferred Alternative - Environmental Justice" section in Appendix C is particularly frustrating. The conclusion of this section leads with the statement that "The measures analyzed indicate that the surface transportation investments in Resilience 2050 should not have disproportionate impacts on EJ TAZs." This is not an adequate goal. With this, the BRTB is essentially saying that they are not making things worse for EJ TAZs. We feel that the goal should, instead, be to have disproportionately **positive** impacts on EJ TAZs. There is a long history of inequity to recover from and compensate for. As such, moving forward in equal measure from an unequal baseline is unacceptable.

In "Table 15 - Full Results: Environmental Justice Analysis", we see most of the metrics color-coded green to signify improvement. However, the story being told here is very misleading.

With some deeper analysis, the finding we see here is that, for every metric but one (9 out of 10), the preferred alternative yields improvements that are greater (or declines that are lesser) for Non-EJ TAZs than EJ TAZs. And, as we have already mentioned, the baselines for both cohorts have

inequitable starting points. How are these results not disproportionate? More explanation needs to be provided.

Overall, the evaluation of potential effects of the preferred alternative suffers from two basic flaws:

1. Very low standards for public transportation and its riders.
2. An overwhelming bias in favor of automobile-centric transportation.

The two lead metrics in Table 15 are as follows:

1. Average number of jobs accessible by auto within 30 minutes
2. Average number of jobs accessible by transit (walk access) within 60 minutes

Why is the baseline time frame for accessibility by automobile **30 minutes**, and yet **60 minutes** by transit? That's twice as long. Does the BRTB believe that transit riders value their time any less than motorists? We find that unlikely. What seems more plausible to us is that the BRTB simply has lower standards for public transportation than it does for automobile-centric transportation. These numbers should be equivalent - 30 minutes for both.

Worse still, the plan document explains that, for transit, the time calculations "include time estimates for walking to a transit stop, wait times, transfer times (walking and waiting), and walking from the final transit stop to the destination." As much as we appreciate and value the sophistication of this formula, it is inadequate.

As most any rider of public transit in the Baltimore region will tell you, the system is rife with late-arriving and no-show buses and trains. As best they can, transit riders do their best to anticipate these service deficiencies and allocate buffer time accordingly. As such, the time calculation formula used in the plan document should factor in such metrics as headway adherence and schedule adherence, as provided by ARIES for Transit (or similar).

The "Average travel time in minutes for shopping purposes" metric is worth highlighting here, in particular. The preferred alternative will shorten travel times by transit and lengthen them by automobile. This is good. However, the resultant times (for EJ TAZs) are 9.67 minutes by automobile and 39.29 minutes via transit. If anything, shopping trips via transit should be **quicker** than by automobile. Carrying bulky purchases home via public transit simply isn't feasible. As such, shopping via that mode requires more frequent trips.

To the credit of the plan document, it does clearly state these imbalances:

- "Auto access to jobs within 30 minutes exceeds transit access to jobs within 60 minutes across all TAZs. For example, in the 2050 PA scenario, auto access is more than two times greater than transit access in EJ TAZs and more than three times greater in non-EJ TAZs."
- "Auto access to shopping opportunities exceeds that for transit regardless of TAZ type or scenario."
- "Average transit commute times are significantly longer than those for auto regardless of TAZ type."
- "As with commute times, the average travel time for shopping purposes is much longer by transit as compared to auto. Transit times are approximately four times longer than those for auto across both TAZs and scenarios."
- "As we saw with average commute and shopping travel times, average travel times to the closest hospital are longer for transit than they are for auto. As compared to auto, transit times are about four times higher for EJ TAZs and more than two times higher for non-EJ TAZs across both scenarios."

- "However, transit access is once again significantly less than that for auto travel."
- "Similar to the other closeness measures, the TAZ percentages for transit are significantly less than those for auto."
- "Auto access and mobility are uniformly better than that for transit."

We acknowledge and appreciate this transparency. However, the plan document seems to make a concerted effort to bury these lackluster results that the preferred alternative will yield. Instead, the plan document overstates the benefits of the preferred alternative for both transit riders and EJ TAZs.

The bottom line is that, with the preferred alternative, transit travel times will remain 2-4x higher than automobile travel times. The upper threshold for a one-person household defined by the BRTB as "low-income" is $29,000. Given the financial burdens of purchasing and owning an automobile, this result yielded by the preferred alternative is unacceptable.

Not Moving the Needle

This LRTP features some progressive changes from plans of the past, including the following:

- Transit projects are awarded extra points in the scoring process.
- All projects are awarded extra points for safety improvements.
- Impacts to Environmental Justice communities are analyzed at-length.
- From purely a content perspective, active transportation is given significant focus.

Unfortunately, despite these changes and efforts, the preferred alternative proposed by the LRTP will not move the needle in a significant way with regard to any of these dimensions.

The plan document seems to make much of the $8.9B the preferred alternative targets toward transit system preservation and the $4.8B it targets toward transit expansion. However, these amounts are eclipsed by the $11.9B targeted toward roadway preservation and $6.9B targeted toward roadway expansion.

Sadly (in our minds), the results are predictably disappointing.

As shown in "Figure 2 – Daily Trips in the Baltimore Region by Travel Mode" in Appendix C, the preferred alternative does **not** result in anything even remotely resembling a significant shift away from trips taken in single occupancy vehicles. The bars in the graph are level.

As shown in "Table 2 - 2019, 2050 Existing + Committed and 2050 Preferred Alternative Performance Measures" in Appendix C, the preferred alternative does **not** result in anything even remotely resembling a significant increase in transit ridership - and the average weekday mode share for transit remains **completely unchanged between 2019 and 2050** (at 3.63%). This is unacceptable.

We fully understand that our transportation system is large and complex and that change takes time. But, the preferred alternative proposed by the BRTB essentially yields **no changes to the bottom line over the course of the next 26 years**. This is unacceptable.

The construction of our automobile-centric transportation system began in earnest in 1956 (with the signing of the Federal-Aid Highway Act). That was **67 years** ago. Given that time frame, we don't believe that moving the needle in a different direction over the course of the next **26 years** is an impossible task. In fact, given historical precedent, we see it as being completely doable.

Consider that, from 1947 to 1963 (a span of only 16 years), Baltimore streetcar ridership declined 100%, from pervasive to extinct. It was policy changes pursued by past governmental, institutional,

and commercial interests that brought about tectonic shifts such as these to the Baltimore region's transportation system and built environment. Those forces remain in place in our region, although they take different forms these days. The BRTB is a manifestation of one of those forces.

The BRTB has it within their power to effect such changes to today's transportation system. Unfortunately, given the plan document, we aren't seeing a willingness among the BRTB members to do so. They are essentially choosing to maintain the status quo.

Closing

We understand that these comments are lengthy. However, the document/plan on which we are commenting is, itself, very lengthy. We hope that you take our comments to heart and appreciate the effort we have put into them. We believe they reflect the respect we have for the effort that the BRTB has placed in the LRTP and the plan document.

We understand that we have brought up a large number of points that we have requested be addressed and questions we would like to see answered. In order to make doing so easier, we have listed them below (16 items below).

Thank you very much for your efforts on behalf of the Baltimore region and the people who live here and care so much about its future. We appreciate the opportunity to comment and look forward to reading your reply.

We understand that we have brought up a large number of points that we have requested be addressed and questions we would like to see answered. In order to make doing so easier, we have listed them below.

BRTB: Thank you for the time you and Strong Towns Baltimore put into reviewing and developing thoughtful comments on the planning process for *Resilience 2050*.

1. Provide a concise rationale for each project.

   BRTB Response: Thank you for the comment from Strong Towns Baltimore and for participating in the planning process for *Resilience 2050*. The BRTB always struggles between trying to provide detailed and digestible information. The current draft plan is 346 pages long and we look for other ways to concisely tell the story of the plan. We have heard that the public responds best to graphic information and the BRTB has chosen to provide an interactive project map and ESRI Story Map in response. Many of these projects are envisioned to be planned, engineered and constructed 10 or 20 years from now and have not progressed through required National Environmental Policy Act (NEPA) planning efforts that will determine details on the projects. Candidate projects submitted for consideration into *Resilience 2050* have gone through various levels of local development and review such as inclusion in local comprehensive plans and transportation plans. Locally sponsored projects have more details provided in each jurisdiction's Annual Priority Letter.

   We strive to provide enough detail for public vetting, recognizing that project details are not finalized until the completion of NEPA. Projects being identified in a regional long range plan does allow for projects to progress through NEPA.

2. Provide a breakdown of itemized (technical) component scores for each project.

   BRTB Response: The project scoring sheet is now online and will be included in Appendix B.

3. Provide the policy scores assigned by each jurisdiction to their submitted projects.

   BRTB Response: The project scoring sheet is now online and will be included in Appendix B.

4. Provide a graph that plots the population growth forecast for the Baltimore region against the growth of system preservation costs in the Baltimore region.

   BRTB Response: It is true that system preservation and operations costs have increased, far outpacing population growth in the region. As such, system expansion funds have decreased to ensure that we adequately maintain and operate our current transportation system. This also translates into reduced funding for system expansion from previous Long Range Plans. This strain on Maryland's transportation trust fund was recognized by the General Assembly this past session. 2023 Senate Bill 024 establishes a Maryland Commission on Transportation Revenue and Infrastructure Needs. The Commission will review among other items: 1) Revenue trends, 2) Trends in operating and capital expenditures, and how existing resources have constrained programming, and 3) Methods other states are funding transportation needs.

   The Commission is scheduled to provide an interim report on or before January 1, 2024.

5. Explain how the BRTB expects the Baltimore region's tax base to cover the projected 103% increase in system preservation costs, given that the region's population is only projected to grow 12.6%.

   BRTB Response: See response to comment #4.

6. Provide the historical rate of increase (or decrease) in system preservation costs for the Baltimore region, extrapolate that out to 2050, and then compare that against the forecasted population growth rate of 12.6%. Provide an explanation as to a) why the historic trend of cost increases will not continue into the future or b) how the BRTB expects the Baltimore region's tax base to cover the projected escalating increases in system preservation costs.

   BRTB Response: See response to comment #4.

7. Rework the socioeconomic forecasting section of the plan document to acknowledge that such changes are shaped and induced by the BRTB.

   BRTB Response: The socioeconomic forecasts are based upon locally adopted Comprehensive Plans and zoning regulations that are governed under the State of Maryland Land Use Article, as well as socioeconomic and development trends, market conditions and other local growth-related policies. The BRTB adopted Resolution #23-1 in June 2022 that guides the transportation investments in *Resilience 2050*. Local Comprehensive plans do regularly get updated and economic development conditions are changing, resulting in updates to forecasts that will be reflected in plan updates and amendments.

8. Provide MDOT's/BRTB's plan for achieving Vision Zero by 2030, as enacted by law.

   BRTB Response: The Maryland Department of Transportation is implementing a statewide Strategic Highway Safety Plan (SHSP) (https://zerodeathsmd.gov/highway-safety-office/strategic-highway-safety-plan/) utilizing a Zero Deaths approach. That plan is developed by a variety of safety stakeholders and governed by an Executive Council composed of the Secretary of the MDOT, the MDOT MVA Administrator, the MDOT SHA Administrator, the Secretary of the Maryland Department of State Police (Superintendent), the Executive Director of the Maryland Institute for Emergency Medical Services Systems, the Chief of Police of the Maryland Transportation Authority, and the Deputy Secretary of Maryland's Department of Health and Mental Hygiene.

During the development of the Maryland SHSP, a vision of zero was identified to comply with the Maryland Vision Zero law and a target-setting methodology using five-year rolling averages and exponential trends was adopted to comply with federal reporting requirements.

All traffic safety documents in the state of Maryland conform to the same target-setting methodology, including the SHSP, the MDOT Transportation Plan (MTP), the MHSO Highway Safety Plan (HSP), the MDOT SHA Highway Safety Improvement Plan (HSIP), MDOT SHA's Commercial Vehicle Safety Plan (CVSP), and the Traffic Records Coordinating Committee's (TRCC) Traffic Records Strategic Plan (TRSP). Additionally, all planning documents developed by the MHSO staff and all State-level reporting to the Governor use the SHSP Emphasis Area fatality and serious injury target-setting methodology.

Per federal statute, the BRTB may adopt the State's safety targets or develop independent metrics. Since 2018, the BRTB has adopted the State's target-setting methodology, for consistency with safety performance reporting with partner agencies, and applied that to region-specific crash, serious injury, and fatality figures.

To improve safety in the Baltimore region, each of the seven jurisdictions has begun developing or implementing a Local SHSP. The structure, goals, and targets of each Local SHSP are determined by a multi-disciplinary team of local partners and are not required to conform to the State approach.

Speed on the roadway network is a major safety concern and the BRTB is adopting the Safe System Approach (SSA) by implementing a range of projects that address all five principles of the SSA. Those include the Look Alive campaign with Signal woman and the law enforcement training seminars that address the behavioral aspect, because research has shown that lowering speed limits on roadways does not translate into lower travel speeds with education, enforcement and engineering support. The BRTB also supports the implementation of Local SHSPs, all of which contain a speeding Emphasis Area, and local agency efforts to change speed limit policy and education, enforcement, and engineering improvements.

9. For roadway projects that call for bicycle accommodations, modify the project description to commit to separated or protected facilities (where such commitment exists).

   BRTB Response: Many of these projects are envisioned to be planned, engineered and constructed 10 or 20 years from now and have not progressed through required National Environmental Policy Act (NEPA) planning efforts that will determine details on the projects. We strive to provide enough detail for public vetting, recognizing that project details are not finalized until the completion of NEPA. Projects being identified in a regional long-range transportation plan does allow for projects to progress through NEPA. The Maryland Department of Transportation (MDOT) is committed to improving safety and multimodal accessibility for all users on its network. The *Context-Driven: Access and Mobility for All Users Guide* is a planning and design resource offering guidelines centered on establishing safe and effective multi-modal transportation systems. This guidance includes evaluating the feasibility of implementing proven safety countermeasures and innovative treatments, such as protected bicycle facilities, where feasible. Currently, MDOT is investigating opportunities to further align its regulations, policies and capital investments with its Context Guide principles and Vision Zero goals that create a safer transportation network for vulnerable road users.

10. Provide an explanation as to how the preferred alternative will not induce additional demand for future roadway expansions.

BRTB response: Current regional scale travel forecasting models are able to simulate some, but not all, elements of induced demand. Our model does recognize that when a roadway is improved, speeds will increase. This will result in more vehicles being attracted to this facility that may result in longer travel distances. The model also has a mode choice module that will look at alternate modes and may shift trips to/from transit or highways depending on the mode (highway or transit) travel time. These effects will show up in the Vehicle Miles Traveled (VMT) figures in Appendix C of *Resilience 2050*. Increased travel time reliability that induces additional household trip making is not captured in travel models. However, model household behavior trip rates are adjusted with the collection of observed data. Our modeling team continues to review national best practices and will try to include any modeling advancements that may improve our model in these areas. Thank you again for your comment.

11. Set a goal for the LRTP to have disproportionately positive impacts on EJ TAZs.

    BRTB Response: As mentioned previously, the regional long-range transportation plan is updated every four years and this is a good suggestion for the consideration of the next round of goals (goals and strategies for *Resilience 2050* were adopted via Resolution #22-6 in November 2021). In addition, the BRTB is near completion of an equity scan project. This project seeks to identify strategies to improve the integration of equity into BRTB policies and programs, with a focus on four key transportation planning documents. Several of the recommendations in the upcoming final report will relate to the LRTP, including project prioritization and analysis tools, and the BRTB will work to implement these recommendations in the next LRTP.

12. Explain how the preferred alternative does not have disproportionate impacts on EJ TAZs, given that, for 9 out of 10 metrics, the preferred alternative yields improvements that are greater (or declines that are lesser) for Non-EJ TAZs than EJ TAZs.

    BRTB Response: Sometimes percentage changes mask absolute number improvements for EJ Travel Analysis Zones (TAZs). For example, as shown in Table 7 of Appendix C, implementation of the projects in *Resilience 2050* is projected to increase the average number of jobs accessible by transit within 60 minutes by 43,780 (229,012-185,232) in EJ TAZs (a 23.6% change). The number of new accessible jobs by transit in Non-EJ TAZs is projected to increase by only 19,501 (91,978-72,477) (a 26.9% change). Absolute improvements for EJ TAZs are larger for 8 of the 12 measures (excluding the three auto proximity measures where EJ access is already near 100% and the average travel time for shopping purposes by auto measure, where EJ and non-EJ TAZs see near identical absolute increases).

13. Set the baseline time frames for accessibility by both automobile and transit to be the same - 30 minutes.

    BRTB Response: Reporting metrics by differing travel times for highway versus transit is a common practice in regional transportation planning across the nation. As reported by the US Census Bureau, 2019 American Community Survey, the 2019 Average Travel Time to Work by Means of Travel for drive alone is 26.4 minutes and 46.6 minutes for bus. Setting the transit bar too low may not paint an accurate picture of normal travel times. We can explore reducing the transit travel time in future updates to the long range transportation plan.

14. Modify the public transit time calculation formula to factor in such metrics as headway adherence and schedule adherence.

    BRTB Response: Unfortunately the regional travel demand model does not have the capability to adjust to match these factors with projections going out to 2050.

15. Highlight the fact that, with the preferred alternative, transit travel times will remain 2-4x higher than automobile travel times.

    BRTB Response: Unfortunately as mentioned previously, transit travel times are significantly higher nationwide versus highway travel times.

16. Propose a preferred alternative that results in the following:

    A significant shift away from trips taken in single occupancy vehicles.

    A significant increase in transit ridership.

    A significant increase in the average weekday mode share for transit.

    BRTB response: The BRTB shares your desire to focus on improving the transit system in the Baltimore region. As such, the Board adopted every candidate transit project that was submitted for consideration in *Resilience 2050*. The Board is also expanding planning efforts around other transit projects that could translate into new candidate projects for future plan updates.

    We also support MDOT's Commuter Choice program that offers financial support for rideshare coordinators in each jurisdiction, a statewide Guaranteed Ride Home program and other programs such as the incenTrip mobile app. On the pedestrian side consider Walktober. October in Maryland becomes WALKTOBER, a month where the Maryland Department of Transportation (MDOT) and other partnering agencies promote and host events and webinars spotlighting Maryland pedestrians' safety, health and commuting options in current walk programs and Initiatives.

    The Maryland Department of Transportation, the Maryland Department of Planning, the Maryland Department of Health, MDOT State Highway Administration, Maryland Highway Safety Office, Maryland Department of Natural Resources, America Walks, and AARP annually share a series of informational resources and free webinars for pedestrians throughout the month of October. The weekly webinars are tailored to interest pedestrian enthusiasts, advocates, planners, and residents.

    In closing, thank you again for your comments.

OTHER TOPICS (5 comments)

1. Anonymous

(1) Timeline - Every time I see projects like this, the projections are that things will be built and usable by like 2030, 2040, etc. I have lived in Baltimore 10 years, and have biked, walked or taken the bus through all of it. I don't want a better bike lane system when I am 50. I want it yesterday. The slowness of all these types of projects are their death knell, as opposition builds faster than infrastructure does, and the high cost and long timeline become reasons not to do this type of work. No leaders want to sign on, absorb all the blow back about costs, headaches, etc., and then let someone 4 election cycles later take credit for a ribbon cutting, meanwhile every political challenger runs on infrastructure opposition.

(2) Lack of Faith - How are we supposed to have faith in this project when all that ever seems to get built is more roadway, and at best mass transit gets some fancy map, a repainted bus, but little actual improvement. Seeing any money dedicated to roads is disheartening. The debacle with the Tiding's Bridge "bike" lane shows how hopeless these efforts often art. I will have in these projects when someone from the state comes out and tells people "no more roads, cars are not the priority, deal with the streets and traffic you have." In the end these projects get watered down

once a few people complain about difficulty driving, losing traffic lanes, or even 1 parking spot disappearing.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We agree that the slow pace of infrastructure projects can be frustrating. It can be disheartening to see timelines of years or decades before meaningful changes are implemented. The reality is that planning, designing and constructing major transportation infrastructure projects takes time. Key steps such as public involvement, addressing community concerns and environmental reviews are complex and time consuming, but are also vital to project success. While progress can be slow, we have to consider each phase carefully to ensure projects are effective and sustainable.

Opposition and cost are also common challenges for infrastructure projects. The projects in *Resilience 2050,* while broadly scoped at this stage, will require significant investments to implement. As projects move from the conceptual to the implementation phase, they enter the short-range Transportation Improvement Program, which details projects utilizing federal funds over the next four years. This process can take time, and opposition to projects as well as securing funding to move a project forward are often challenges. However, these elements make it even more crucial to spend significant time and effort throughout the planning and implementation process to address concerns and communicate the value of projects.

We think that *Resilience 2050* represents a step in the right direction for transit, bicycle and pedestrian investments. *Resilience 2050* includes over $4.8 billion in funding for transit expansion projects throughout the region. These projects include two major transit corridors, the East-West and North-South Transit Corridors, seventeen transit hubs throughout the region and several new express bus and BRT routes, among others. In addition, nearly 3/4 of the projects in *Resilience 2050* include bicycle and pedestrian facilities as part of their project scope. *Resilience 2050* also includes $250 million in funding set-aside for strategies improving air quality in the Baltimore region. Sixteen regional bicycle and pedestrian priority projects are included in *Resilience 2050* as part of this set-aside funding (see page 30 of Chapter 7).

And we encourage you to continue to be involved in the planning process for future BRTB products. An upcoming project you may be interested in is the Vision for a Regional Bicycle Network, beginning in summer/fall 2023. The regional bicycle network project will include extensive public engagement and the opportunity to update the list of top regional active transportation priorities developed in spring 2022.

Thank you again for your comment.

2. **Jim E**

Important to get this Right…but very challenging !! Relieve congestion, improve infrastructure, safety, mass transit without increasing taxes! ?? We GET what we pay for! Entertainment/Escapism “more important” to most citizens (vs. paying taxes for maintenance & improvement investments)?!

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The significant challenges you raise regarding congestion, maintenance, safety and transit emphasize the importance of long-range planning. Identifying regional goals and evaluating projects based on those goals helps to ensure that future transportation investments yield a safe, accessible and equitable transportation system. It’s also important to reevaluate plans. The long-range transportation plan is a living document that can be amended and is updated every four years.

While we work hard on public outreach materials and gathering public input, it can be a challenge to engage people in the long-range planning process. This makes it even more crucial to spend time

and effort communicating how long-range projects with timelines of years or decades can yield meaningful benefits for transportation. We encourage you to continue to engage with and comment on future BRTB plans.

Regarding taxes, financial trends over the last several LRTPs have shown increases in system preservation and operations costs. As such, system expansion funds have decreased to ensure that we adequately maintain and operate our current transportation system. This strain on Maryland's transportation trust fund was recognized by the General Assembly this past session. The 2023 Senate Bill 024 establishes a Maryland Commission on Transportation Revenue and Infrastructure Needs. The Commission will review, among other items: 1) Revenue trends, 2) Trends in operating and capital expenditures, and how existing resources have constrained programming, and 3) Methods other states are using to fund transportation needs. The Commission is scheduled to provide an interim report on or before January 1, 2024.

Thank you again for your comment.

3. **Paul Emmart**

Where is the registration link for the outreach meetings? No one has the time to go to in person meetings at dinner time. If you intended this, then please state it! Otherwise the outreach will result in a poor showing.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. Details about our public meetings to discuss the *Resilience 2050* plans in more detail are listed on the second of three tabs on our *Resilience 2050* PublicInput project page, 'Public Meetings.' In addition to in-person meetings with each of our jurisdictional partners at various times on weekday evenings throughout the comment period, we hosted a virtual meeting on Wednesday, May 24 at 12 p.m. We apologize if you missed us, and encourage you to view a recording of the meeting available on our YouTube channel (@BaltoMetroCo).

Thank you again for your comment.

4. **Bill Marker**

Comment one. I saw the note in Sunday's paper and went have a second comment I wanna make, but getting to the meeting was very problematic. There is nothing on the ad that says how'd to get to the meeting. It just says join for a virtual meeting on May 24th at 12:00 PM And then I tried doing the QR code and that just led me the information. I'm not sure how I, what I finally kicked in to get to it, but the, the ad is very deficient, I would say. I had to get to the meeting. And two, I have a procedural concern that I live in the Barry Circle, part of big town, a mile west of the Harbor in Baltimore. Two, I have a procedural concern that could affect substantive. I saw there's a meeting in each county, but counties at different sizes. I'm afraid that could give over representation and the results to smaller counties. So I would suggest that meetings should be probably each state senate district would essentially be giving a me equal meeting per population. I just, I think that, and certainly not all of Baltimore City can make it down easily. Make it to gay Street. You're all about transportation. So, you know, so I am, those are my comments. Thank you.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We're glad that you saw our print ad, and apologize that we weren't able to include more details beyond the address of each meeting due to space and budget limitations. Going forward, we will more carefully consider ways to share more detailed information about how to access in-person meetings. Regarding the number of meetings, we are limited by the duration of the comment period and the bandwidth of our staff. However, we will consider how we can continue to

make our opportunities for public involvement more accessible, particularly as we navigate a return to in-person programs. We would welcome the opportunity to work with any elected officials, community groups or other organizations looking to help us engage more of our community members in our transportation planning efforts.

Thank you again for your comment.

5. **Melanie**

The BRTB plans have finely detailed road widening projects and hugely ambiguous language about anything else from micromobility to transit infrastructure. The lack of any detail on what these goals are for transit, while having highly detailed goals for the expansion of personal car level of service, indicate priorities counter to the interests of Marylanders facing climate catastrophe and ongoing upkeep shortfalls on the already overbuilt and oversprawled road system. Who made these decisions that will actively hurt Marylanders for generations to come?

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The BRTB always struggles between trying to provide detailed versus digestible information. The current draft plan is 346 pages long and we look for other ways to concisely tell the story of the plan. We have heard that the public responds best to graphic information and the BRTB has chosen to provide an interactive project map and ESRI Story Map in response.

Many of these projects are envisioned to be planned, engineered and constructed 10 or 20 years from now and have not progressed through required National Environmental Policy Act (NEPA) planning efforts that will determine details on the projects. In the case of new transit service, we provide as much detail as available while recognizing that details such as the specific route, stations, frequency, and even mode (in some cases such as the East-West and North-South transit corridors) will not be known without further planning. Most details are not yet known for roadway projects, though most roadway projects involve expansion of already existing facilities. Candidate projects submitted for consideration into *Resilience 2050* have gone through various levels of local development and review. Locally sponsored projects have more details provided in each jurisdiction's Annual Priority Letter.

We strive to provide enough detail for public vetting, recognizing that project details are not finalized until the completion of NEPA. Projects being identified in a regional long range transportation plan does allow for projects to progress through NEPA.

Thank you again for your comment.

PROJECT SPECIFIC (8 comments)

1. **Rivers Edge neighborhood - Anonymous**

Please connect Rivers Edge neighborhood (intersection of MD 29 and MD 32) to the Columbia walking and biking trail network via Holiday Hills Park.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. A new pathway connection is being studied by the Maryland Department of Transportation. This project is in the early stages, but the overall goal is to investigate the opportunity for a bicycle and pedestrian path between the Rivers Edge Community, Clarksville Hunt Community, and the Johns Hopkins Library Services Center.

Thank you again for your comment.

2. **MD 295/I-695** - **Anonymous**

Perhaps it's outside of the scope of this project but I'd like to suggest studying and correcting the I-295/I-695 interchange on the south side of Baltimore. The number of vehicles that fail to negotiate the on/off ramps is ridiculously high.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We appreciate your inquiry regarding safety concerns at the I-695 interchange with MD 295 in Anne Arundel County. MDOT State Highway Administration is currently reviewing the interchange geometry of the ramps and will consider potential improvements upon completion of the review, anticipated in fall 2023.

Thank you again for your comment.

3. **MD 161 and MD 155 – Anonymous**

Remove current stop sign configuration and install a roundabout at intersection of Rt. 161 and Rt. 155 in Harford County. The current volume of traffic causes numerous instances of individuals not observing/adhering to the stop sign. This subsequently causes dangerous navigation of the intersection.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We appreciate your inquiry regarding intersection safety concerns along MD 155 (Level Road) at MD 161 (Darlington Road) located in Harford County. MDOT State Highway Administration is currently conducting a review of this location and will consider potential improvements upon completion of the review, anticipated in August 2023.

Thank you again for your comment.

4. **Support for several projects** - **Joel Binkley**

I live outside Annapolis not far from where the new Parole Transit Center is being constructed. I frequently drive the roads around Parole, US 50/301, I-97, and MD 178/General's Highway. I strongly support the following elements of the *Resilience 2050* Plan:

Widening I-97 north of US 50. There is constant congestion on northbound I-97 in the afternoons where traffic existing US 50 and MD 665 condense down to two lanes of northbound traffic on I-97. I would be surprised if traffic numbers warrant a full interchange at Crownsville/MD 178 but I wouldn't be opposed.

"Express bus" services from Annapolis/Parole to New Carrollton, Fort Meade/Columbia, and Glen Burnie. More of these bus services in all directions from Annapolis will help regional transportation, ideally when combined with HOV or Bus only lanes on major highways.

Completing the missing segments of the South Shore Trail through Crownsville and Parole. I would strongly advise a connection to Rolling Knolls Elementary school via Epping Forest road to allow more youth the opportunity to bike to school.

Improvements to MD 214 including intersection improvements at Riva Road and MD 424.

Please go even further and plan for future rail transit connections between New Carrollton and Annapolis (extend the orange line). Preserve the median of US 50 for a potential rail line as was constructed in Northern Virginia with the silver line. If it makes sense feasibly to extend a light rail line south of Washington DC to Waldorf (see SMRT plan) it surely make sense to connect Maryland's capital to the Metro system via New Carrollton.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. We appreciate the support of the improvements to I-97, MD 214, expansion of regional express bus and completion of the South Shore Trail as proposed in *Resilience 2050*.

Regarding the extension of rail between Annapolis and New Carrollton, we support the importance of a regional transit link between Annapolis and Washington, DC. This connection is also identified as a regional transit corridor in the Regional Transit Plan for Central Maryland and regionally significant transit connection in the draft Statewide Transit Plan. While future considerations for this connection could include rail, or some other form of higher capacity transit, in the next 25 years we anticipate express bus service as being the most likely to get implemented within the fiscal constraints of this plan. If we were to allocate the amount of resources required towards a rail connection for this corridor in *Resilience 2050*, numerous other projects would have to be eliminated from the plan to stay within the anticipated revenues as shown in the *Resilience 2050* Financial Plan (Chapter 6). It is our preference to provide express bus service at a high enough frequency to provide an attractive alternative to single occupancy vehicular travel. Should that service be provided as planned in *Resilience 2050*, the ridership for that route will provide justification for further enhancements of that service including increased frequency and potentially an upgrade to BRT or rail, or other high frequency mass transit options. Anne Arundel County will continue to advocate for the expansion of regional transit services, including in the annual priority letter to the Maryland Department of Transportation for inclusion in the annual Consolidated Transportation Program.

Regarding the recommended connection of the South Shore Trail to Rolling Knolls Elementary School, Epping Forest Road has been identified as a secondary bicycle network connection in the County's newly adopted pedestrian and bicycle master plan, *Walk and Roll Anne Arundel!* (shown on the Region 6 map on page 50). Whether the connection from Rolling Knolls Elementary to the South Shore Trail happens as part of the trail construction or as a separate project by the County in keeping with the investment priority of providing Safe Routes to School from the County's transportation master plan, *Move Anne Arundel!*, would be determined during the design of Phase III of the South Shore Trail which will include public involvement at that time.

Thank you again for your comment.

5. **Interchange** - **Jim E**

I 70/ I 695 connection — reduce outrageous congestion!! Maybe by improving Public Transit! ☺

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The BRTB's 2024-2027 Transportation Improvement Program (TIP) include a project to replace bridges and all ramps at the I-695 and I-70 interchange. This $275 million MDOT State Highway Administration project will improve operations at the interchange. Construction is anticipated to begin in spring 2025 and be completed in fall 2028.

Regarding public transportation, *Resilience 2050* includes over $4.8 billion in funding for transit expansion projects throughout the region. These projects include two major transit corridors, the East-West and North-South Transit Corridors, seventeen transit hubs throughout the region and several new express bus and BRT routes, among others.

Thank you again for your comment.

6. **More Transit** - **David Highfield**

Mass transit could be helpful if extended into Carroll County.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The policy of Carroll County, through the adopted plans and Board of County Commissioners' resolutions, has always been to provide transit services only within the County. There are currently no plans to expand this type of service outside of the County. The most recent Transit Development Plan (TDP), which provides a plan for public transportation improvements in the County over a five year period, reinforced this policy.

Thank you again for your comment.

7. **No to Broening Highway Interchange** - **Turner Station Conservation Teams Inc. (Gloria Nelson, President)**

   On behalf of our beloved community, Turner Station Conservation Teams Inc. (TSCT) is opposed to the I-695 Broening Highway interchange and its threats to our community's integrity, public health and natural environment. Turner Station is a waterfront community surrounded by heavy industry and suffering from the collapse and toxic legacy of Bethlehem Steel, its primary industrial employer. TSCT diligently works to revitalize our historic African American community of approximately 3000 residents, a majority minority population with low income above the regional average. We face infrastructure issues, housing challenges, flooding, poor air and water quality, a lack of green infrastructure, etc. With the assistance of several partners, we are finally making progress in our struggle against a history of environmental injustice.

   The I-695 at Broening Highway Interchange is an unprecedented challenge for our community. It's so ironic that BRTB's theme is "*Resilience 2050*: Adapting to the Challenges of Tomorrow". We are working with The Nature Conservancy and our Board recently completed a TSCT Vision Strategy Session to revisit our vision, mission and strategies to create a more resilient community organization to adapt to the challenges of tomorrow. Now it is clear that our present and future greatest challenge is facing us - an interchange at our back door at I-695, Exit 44.

   We're aware that Congressman Dutch Ruppersburger obtained 1.5 million dollars for planning a full interchange to support Trade Point Atlantic's increased growth and traffic. We also noted that we're now discussing a partial interchange. Does that mean that our ground zero community's quality of life and health consequences will be only partially impacted when our ailing residents are studied in the future? Is the economic success of Trade Point Atlantic more consequential than the health and safety of our vulnerable residents?

   Turner Station is the largest historic African American community in Baltimore County and a poster child for inequity. Your decision will make a strong statement about how Baltimore County and the State of Maryland plans to adapt to the challenges of tomorrow. We look forward to working together for the best possible outcome for the community of Turner Station.

   BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. This comment, in full, will be entered into the record of *Resilience 2050* and re-shared with Baltimore County when the upcoming feasibility study begins. A feasibility study is a detailed analysis that considers all of the critical aspects of a proposed project in order to determine the likelihood of it succeeding. The study is designed to help decision-makers determine whether or not a proposed project or investment should be pursued. There will be an opportunity for Turner Station to weigh in at that time, which is before a decision is made to move forward.

   Thank you again for your comment.

8. **Snowden River Parkway** - **James Wilkinson**

21: Widening of Snowden River Parkway from four to six lanes from Broken Land Parkway to Oakland Mills Road. Agree this is a congested road, I have concerns about impacts to residences and forest buffers on north side of Snowden Rover Parkway and access to businesses also on north side of Snowden River Parkway. A widened roadway will increase noise levels to residences from increased traffic and removal of forest. Currently we are experiencing noise issues from modified car exhaust systems and motorcycles on Columbia's streets. How will noise levels be addressed? I also would appreciate more information on transit options and ideas to divert heavy truck traffic away from this area of Snowden River Parkway. Thank you.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. This project's goal is to deliver improvements along the corridor to address both congestion and safety with staged projects at intersections to address car congestion as well as new sidewalks and pathways along the corridor. While there might be some short sections, primarily at intersections, where the road will be widened from the curb, a significant portion of the project will use the existing medians to add capacity. Additionally, these types of projects also include street trees, which will address some of your noise concerns. This corridor is also served by two Central Maryland RTA routes and MDOT Maryland Transit Administration commuter bus stops at the two Park-and-Ride lots; access to these lots is also being improved with a new pathway from Broken Land Parkway and Snowden River Parkway. We understand your concerns about heavy truck traffic. However, Snowden River Parkway provides critical truck access to the numerous business located in the industrial parks on the south side of Snowden River Parkway and this road will continue to serve this role. Regarding your concerns about noise from motorcycles and cars, this is a vehicle regulation issue that would be best addressed by the Howard County Police Department who have the authority to issue tickets to drivers whose vehicles violate state and federal vehicle noise standards.

Thank you again for your comment.

TRANSIT (23 comments)

1. **Anonymous**

Expanding reliable, fixed-rail transit is key to Baltimore's future. Currently its difficult to get around the city without a car besides using unreliable buses which get stuck in traffic. What fixed rail transit does exist (metro and light rail) doesn't go many places people want to go and doesn't link well to other modes of transit.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. MTA is leading multiple efforts to expand the current transit system. The Regional Transit Plan, published in 2020, identified thirty corridors to be studied. Each corridor has or is projected to have sufficient ridership demand to support all-day, frequent transit and would require additional infrastructure investment to fully support successful transit. Additional study is needed to determine mode, specific route or alignment, levels of service and station locations. Investments may include dedicated right-of-way, signal priority, shelters or stations, and other customer amenities. Currently, MTA is advancing the Red Line which will provide an essential east-west connection from Woodlawn to Bayview with the potential for expansion to eastern Baltimore County. The North-South Corridor Study is evaluating existing and future transit demand between Towson and Downtown Baltimore. Baltimore Metropolitan Council is leading a pilot feasibility study for mid-opportunities corridors like BWI Airport to Columbia Town Center.

Thank you again for your comment.

2. **Anonymous**

Around the year 2000 we were presented with a transit system for Baltimore. In it were the continuation of the Green Line (Metro) and the Blue Line (Light Rail). What was standing out most about these two lines was that they did not connect. When the public was planning the Red Line, again there was no connection with either existing lines. The public converted the proposed bus line that was to be the Red Line to a light rail line that would be grade separated at various points, primarily through the CBD, utilizing Charles Center as a hub. (Charles Center was designed to handle a north-south and an east-west metro line).

Then, in 2000, the public input took the B&O Museum, Camden Yard, and M&T Bank Stadium into mind when planning the route. Include University of Maryland into the mix and tie into the Metro line and the cost of running might be reduced, and we get direct connection of the two lines.

There was no thought in this latest plan to extend the green line to the MARC Line. This was presented back in 2000 and would provide access for those living along the MARC line to Johns Hopkins. The Green Line, then, was proposed to extend to Morgan State. Is that in the master plan?

Overall, we should be looking at destinations not only at Johns Hopkins Bayview but also Trade Point Atlantic. We should also be looking at existing lines to expand development at stations. Plus, we should be looking at the overall rail network of the region to see which lines can be utilized as Metro/light rail lines.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The green line was identified as part of the 2002 Baltimore Regional Rail System Plan; however, the project was not moved forward for cost-effectiveness reasons. More recently, MTA and its regional partners created the Central Maryland Regional Transit Plan, establishing a vision for transit over the next 25 years. This plan identified Regional Transit Corridors demonstrating demand for major investments in high-quality transit options. Two corridors were identified for Early Opportunity Corridor Studies: The East-West and North-South corridors, both the East-West and North-South transit corridors are included in *Resilience 2050*. The East-West Feasibility Study findings reaffirmed the need for transit along the Red Line preferred alternative alignment, as well as demonstrating the need and strong support for other areas that were studied. As a result, MTA will look at expansions from Bayview to Eastern Baltimore County as part of the Eastern Baltimore County Access Study.

Thank you again for your comment.

3. **Anonymous**

The lack of a true vision for a more regional transit network that centers on existing infrastructure in town centers is truly disappointing in the face of a climate crisis that world has to confront over the next 30 years. The focus of more than 60% of the funding in this plan is either expansion or improvements of roads that will encourage people to use cars more, which will increase greenhouse gas emissions and result in poor land use. The Baltimore Metropolitan Council needs to seriously consider how transportation will look in 30 years in the face of a changing climate and financial reality. Cars force municipalities to use land in an inefficient way that costs more for the build-out and maintenance of infrastructure and services. We need to re-think the car-dependent system that this plan continues.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The Central Maryland Regional Transit Plan, developed by the Maryland Transit Administration, serves as a guiding document for transit projects for the next 25 years. This plan, completed in 2020 is scheduled for an update in the next few years. This plan focuses not only on regional service but also local service around town centers. A number of local transit agencies do

provide transit in town centers, and MDOT MTA connects to a number of those local transit services. Transit agencies are continuing to develop additional circulator services that should reduce car trips.

Thank you again for your comment.

4. **Anonymous**

   If you want this city's population to ever rebound, you're gonna have to get serious about investing in mass rapid transit. A light rail that is not only reliable but it not concentrated in the wealthiest and most gentrified part of the city. A city where everyone can theoretically get around comfortably, quickly, and affordably without a car. Otherwise there's no hope of the city ever rebounding again. No matter how "affordable" the housing stock is.

   BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. MTA is leading multiple efforts to expand the current transit system. The Regional Transit Plan, published in 2020, identified thirty corridors to be studied. Each corridor has or is projected to have sufficient ridership demand to support all-day, frequent transit and would require additional infrastructure investment to fully support successful transit. Additional study is needed to determine mode, specific route or alignment, levels of service and station locations. Investments may include dedicated right-of-way, signal priority, shelters or stations, and other customer amenities. Currently, MTA is advancing the Red Line which will provide an essential east-west connection from Woodlawn to Bayview with the potential for expansion to eastern Baltimore County. The North-South Corridor Study is evaluating existing and future transit demand between Towson and Downtown Baltimore. Baltimore Metropolitan Council is leading a pilot feasibility study for mid-opportunities corridors like BWI Airport to Columbia Town Center.

   Thank you again for your comment.

5. **Anonymous**

   I just want transit to be reliable and be easily tracked on a phone app. Currently neither are happening. Canceled busses and late busses are main reasons why more people don’t ride. I’d love for busses to come more often than once an hour so if one does get canceled you can get the next one instead of having your whole day ruined.

   BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. MTA has several initiatives underway to improve our on-time performance and reduce cut runs. Recent operator hiring initiatives have included a one day hiring event, social media promotion, and events with partner agencies like the Baltimore City Mayor’s Office. In addition to hiring additional bus operators MTA is working on infrastructure improvements to make buses faster and more reliable. MTA has grown our dedicated bus lane network significantly through projects like North Avenue Rising and the addition of three bus lane pilot corridors on York Road, Harford Avenue, and Charles/Light Streets. Additionally, MTA has ongoing efforts to steadily improve the reliability of real time data both as reported to apps like Transit App, and to increase the number of real time information signs at busy stops.

   Thank you again for your comment.

6. **Jon Foster**

   We need better rapid transit in popular places and we need it FAST. Not in 20 years, not in 10 years. Planning and implementation need to be much much faster. Otherwise, things will have changed by the time the FEIS is finalized and it won't make sense. Also, we must put investment into our marginalized communities, and stop looking at transit as a revenue source and more like the public

good it is (like other publicly paid things -- roads, fire fighters/police, etc.). So let's open two subway/light rail lines with grade separation, through popular places that go to destinations that are underserved and let nature do the rest!

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. MTA is leading multiple efforts to expand the current transit system. The Regional Transit Plan, published in 2020, identified thirty corridors to be studied. Each corridor has or is projected to have sufficient ridership demand to support all-day, frequent transit and would require additional infrastructure investment to fully support successful transit. Additional study is needed to determine mode, specific route or alignment, levels of service and station locations. Investments may include dedicated right-of-way, signal priority, shelters or stations, and other customer amenities. Currently, MTA is advancing the Red Line which will provide an essential east-west connection from Woodlawn to Bayview with the potential for expansion to eastern Baltimore County. The North-South Corridor Study is evaluating existing and future transit demand between Towson and Downtown Baltimore. Baltimore Metropolitan Council is leading a pilot feasibility study for mid-opportunities corridors like BWI Airport to Columbia Town Center.

While these larger investments proceed through the planning process MTA is leading multiple projects that focus on improving service today, particularly for core bus. For instance, MTA's Fast Forward Program is investing $43 million in our core service area by accelerating projects that create a transit system that is more reliable, accessible, and easier to use. Investments include, Bus Stops and Shelters, Wayfinding, Real-Time Information Signs, and dedicated bus lanes. The goal of these investments is to improve the customer experience and improve reliability across the system.

Thank you again for your comment.

7. **Greater Washington Partnership - Kathy Hollinger CEO**

The Greater Washington Partnership (the Partnership) commends you and your team for the **Resilience 2050: Adapting to the Challenges of Tomorrow** (Resilience 2050) long-range transportation plan and the **Draft 2024-2027 Transportation Improvement Program** (draft TIP). These two plans detail the next 30 years of transportation priorities and investments in the Baltimore region which will shape the long-term economic health, vibrancy, and competitiveness of the region.

The Partnership is a first-of-its-kind nonprofit alliance of the region's leading employers in Maryland, Virginia, and Washington, DC. In 2018, the Partnership released the Blueprint for Regional Mobility, an action-oriented strategy to transform our region's transportation system into an asset that ensures our global competitiveness, expands access to opportunity, and removes barriers to mobility from Baltimore to Richmond.

The Partnership is also committed to Baltimore's Transit Future, a collaborative effort with the Greater Baltimore Committee to ensure that the region has a world-class public transit system to create shared economic prosperity and catalyze inclusive growth. Already, more than 70 Greater Baltimore businesses and institutions have rallied their support behind a shared strategy to invest in the region's transit system to drive inclusive economic growth across the region.

As you finalize the two draft plans, I encourage you to consider the following comments:

- **The Partnership applauds the inclusion of transit projects like the East-West Transit Corridor and the North-South Transit Corridor for their capacity to spur transformational and inclusive economic development**. In conjunction with other transit and regional rail projects like a new Aberdeen MARC Station, a Bus Rapid Transit corridor on US 1, and the Light Rail and MARC rolling stock fleet overhauls, the Baltimore region can advance a pipeline of transit investments to bolster economic competitiveness by connecting residents to more job,

healthcare, and educational opportunities, while creating high-quality jobs and workforce development opportunities.

- **A robust, multi-modal transportation network will be critical to achieving the goals laid out in *Resilience 2050*, including goals to improve accessibility, mobility, system safety, and promote prosperity and economic opportunity**. By providing frequent and reliable alternative modes of transportation, the Baltimore region can advance economic opportunity while building a transportation system that is safer, more resilient, and more equitable. Investments into transit, pedestrian, and cycling infrastructure as well as the roadway maintenance and improvement projects detailed in *Resilience 2050* will create jobs and spur inclusive economic growth across the region.

Sustained investment to transform the transportation network into a globally competitive asset will be critical to the region's long-term economic health and vibrancy. Transformative projects, such as the East-West "Red Line" transit corridor, will define regional mobility and access for the next generation. We encourage the Baltimore Regional Transportation Board to continue to prioritize innovative infrastructure projects that can bolster economic competitiveness and create a more connected and inclusive region.

I thank you for the consideration of the Partnership's comments and our shared goal of making this region, from Baltimore to Richmond, the best place to live, work, and build a business.

BRTB response: Thank you for your comments and for participating in the planning process for *Resilience 2050*. We thank you for the Partnership's support for the wide range of transit and multi-modal projects selected for inclusion in *Resilience 2050*. We do believe the goals that were adopted will lead to a robust and sustainable transportation network that allows economic opportunity to all in the region.

Thank you again for your comments.

8. **Mark Gregory**

Please include transit line row acquisition for coordinated national interconnectivity. We need coast to coast and Country to Country high speed access.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The BRTB and BMC staff participate in conversations about national connectivity including the Federal Railroad Administrations Long-Distance Service Study and has also had briefings on proposed AMTRAK improvements in and beyond the region. The BRTB continues to monitor and prepare for the proposed future expansions.

Thank you again for your comment.

9. **Marietta Hassan**

I live in Baltimore county Maryland Reisterstown to be exact. If I wanted to go Towson using public transportation; I would HAVE to go all the way downtown Baltimore to catch a train that would take me back up to where I started, then back Towson. About a forty-five minute train ride, which would only take less than twenty minutes by car.

Commuters would save much expenses, wear and tear on car.

Fans from Carroll County would not have to drive into the city for Orioles or Raven games (can you imagine how much parking this would free up). Shopping could be more convenient from Lexington Market and other shops.

Merchants would have better chance of improving new customer base and being more diverse.

I can not believe no one has explored this. You have brought the inner city into the county, now you must expand, giving customers and residents the freedom to move about and travel shop outside their local jurisdictions.

Commute, explore, diversify.

Pennsylvania is not that far away. You have subway/light rails traveling to DC and suburbs, why not to PA. Thank you for taking the time to read.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. Regarding your feedback on public transportation within the Baltimore region, MDOT Maryland Transit Administration, in partnership with Baltimore City and Baltimore County, spent last year identifying a range of options to improve existing and future transit between Towson and Downtown Baltimore with the North-South Corridor Study. Several options are now being reviewed for feasibility and will be narrowed down to 3-4 alternatives that will be explored in more detail. While this study is in preliminary stages, it represents a step forward in delivering major transportation investment to the region.

Thank you again for your comment.

10. **Patrick Ireland**

    As someone that lives along this corridor, I would like to see the north south corridor transit project moved from 2040-2050 expenditure to an earlier time frame (maybe 2028). To me this would have a huge beneficial impact on a growing area of the city and county over the numerous roadway expansion projects planned in its stead.

    BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. MTA, with its regional partners, is working to advance the RTP North-South corridor study. This study is wrapping up the feasibility phase with next steps including an Alternatives Analysis to prepare for future design phases. A construction timeline is dependent upon successful selection of an alternative, completion of design, and development of a financial plan.

    Thank you again for your comment.

11. **Gerald Johnson**

    We need more transit system in Baltimore city and Baltimore County also when MTA going to upgrade the light rail system extension also and the subway line two

    BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. In 2020, MTA and its regional partners created the Central Maryland Regional Transit Plan, establishing a vision for mobility over the next 25 years. This plan identified Regional Transit Corridors demonstrating demand for major investments in high-quality transit options. The East-West Corridor and the North-South Corridor from Towson to Downtown Baltimore City were identified as early opportunity corridors and are being studied further to identify the best transit modes and alignments that will benefit the communities they connect.

    Thank you again for your comment.

12. **Jay Louis**

    More resources need to be allocated toward transit expansion. Relative to peer cities against which we are competing, Baltimore City's ongoing shrinkage indicates a lack of demand for what this city

has to offer. Uncoincidentally, the city is not growing, in large part because (regardless of the reasons) the transportation infrastructure needed to support growth and economic competitiveness has not been invested in. For too long, the prevailing mindset in this region has seemingly been that transit is simply a means of moving people from point A to point B. However, transit expansion is also a means of directing growth and realigning a region's urban form; leading cities around the world continue to demonstrate this. Does Greater Baltimore truly desire to be such a leading city and region?

Baltimore would easily grow by much more than a total of 4.1% through 2050, if city and state leaders are willing to do the difficult work of committing to becoming a tremendously more micromobility & transit-connected city than we currently are. A recent Live Baltimore study projected that 5,000 - 7,000 households would rent or buy new or significantly renovated homes each year over a five year period, if such homes were added to the city's housing stock. How much more could we do in 30 years by investing in transit and facilitating the creation of new infill housing opportunities? What's needed is: 1) full-throated support for the idea that Baltimore will be a city where car-ownership is an afterthought, and 2) unwavering focus on building the corresponding infrastructure that brings this idea to life. In particular, Baltimore should be in pursuit of more fully grade-separated rail transit that provides a "turn up and go" level of service to the region, with light metro as the designated technology (not to be confused with light rail).

Looking at the state of our transit system today, one of my greatest concerns is that the world is passing Baltimore by; but Baltimore/Maryland is not learning from the world, even as we claim a desire to build a "world-class" transit system. With the right public policy and investments, Baltimore City can be a global commercial hub in the making. As such, we should aspire to forward-looking, global-standard transit service and technology, around which significant densification and growth can be directed. Surface-running light rail is backwards-looking technology that we should not be in a rush to further embrace if that can be avoided. By contrast, light metro allows for faster, automated, high frequency service, at low operating costs that could never be achieved with light rail. Running a rail transit service at relatively low cost would then allow us to save our precious few operating dollars to develop as extensive and frequent a bus system as possible. In thirty years, Baltimore's population density has the potential to be at or above the 10,000/square mile mark, perhaps comparable to where Washington, DC and Philadelphia are today (11,000 - 12,000/square mile). At that point surface-running light rail on downtown streets would be unprecedented for any high-density major city along the northeast corridor.

Understandably, the pursuit of fully grade-separated rail transit will not be cheap. But again, we must strive to learn from what we see in the world around us in order to deliver high capacity transit infrastructure at reasonable costs. Maybe that means importing light metro to Baltimore via public-private partnership with a proven entity like CDPQ Infra, the builder of Montreal's new RER regional light metro system. Or maybe we can follow modular and prefabricated construction methods used in Madrid, Spain and Qingdao, China that have allowed for major time and cost savings in subway building.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. MTA is leading multiple efforts to expand the current transit system. The Regional Transit Plan, published in 2020, identified thirty corridors to be studied. Each corridor has or is projected to have sufficient ridership demand to support all-day, frequent transit and would require additional infrastructure investment to fully support successful transit. Additional study is needed to determine mode, specific route or alignment, levels of service and station locations. Investments may include dedicated right-of-way, signal priority, shelters or stations, and other customer

amenities. The creation of a better network will increase ridership by providing better, more convenient access to more destinations. Currently, MTA is advancing the Red Line which will provide an essential east-west connection from Woodlawn to Bayview with the potential for expansion to eastern Baltimore County. The North-South Corridor Study is evaluating existing and future transit demand between Towson and Downtown Baltimore. Baltimore Metropolitan Council is leading a pilot feasibility study for mid-opportunities corridors like BWI Airport to Columbia Town Center.

Thank you again for your comment.

13. **Earl Lowe**

for subway Reisterstown road station should become a transit hub. More shopping and businesses in that area

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. In 2021 the Maryland Department of Transportation awarded for entering into an exclusive negotiating privilege an agreement with Wabash Development Partners to develop approximately 25 acres of unimproved land and surfaced parking lots. This is an ideal space for Transit-Oriented Development (TOD) which could include additional shopping and business amenities.

Thank you again for your comment.

14. **Maggie**

By making much needed updates to Baltimore's public transit, people will have access to more of the city and thus benefiting the economy. In my observations since moving from DC to Baltimore in the last five years, people do not choose to take public transit. I have encountered first hand how unreliable, indirect, and unsafe the system is due to decades of neglect. Improvements should focus on making transit a reliable, efficient, and safe option for everyone. This could consist of having designated more bus lanes to help buses move through traffic. Currently, takings bus can be up to 3x the commuting time. Invest in options to connect the main hubs tourists like to go to for example Federal Hill to Waterfront to Canton. Currently it's quicker to walk or take the water connector then rely on any direct route that connects the city. Finally, investing in the light rail that connects the stadiums to the county as well as Hamden to the city can improve movement to different areas. Baltimore is unique in how small it is compared to other cities yet everything requires a car to access. Tourists, commuters, and everyday people are having to drive to access areas of Baltimore when there are so many underutilized resources to improve movement throughout the city. Finally, a point to add that even with these updates there needs to be a focus on changing public perspective around public transit in Baltimore. From my experiences, information is hard to find on schedules as well as access points. These create barriers in addition to the safety concerns that people already have as a stigma when visiting Baltimore. You cannot just have those who have no access to vehicles using transit. It needs to be supported by the city and people as a whole to have the continuous funds coming in to support the infrastructure. I feel confident that this initiative will provide at least dialogue around how to improve our city and bring life/ tourism back to Baltimore.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. There are several ongoing bus projects to increase bus reliability, speed and passenger safety throughout the core bus system. Potential targeted investments to the roadway that prioritize transit riders include curb-extensions at bus stops, transit signal priority, dedicated bus lanes, queue jumps, and more. Current corridor efforts include the RAISE Transit Priority Project (CMS to Fox Ridge), Garrison Boulevard, and the Belair Rd Gay St corridor.

MTA's Fast Forward Program is investing $43 million in our core service area by accelerating projects that create a transit system that is more reliable, accessible, and easier to use. Investments include, Bus Stops and Shelters, Wayfinding, Real-Time Information Signs, and dedicated bus lanes. Three pilot dedicated bus lanes were installed on York Road, Harford Avenue, Charles/Light Street to bring quick improvements to riders.

Thank you again for your comment.

15. Melanie

MTA MARC put out a long term vision for expanding regional rail in Maryland, mostly centered on the existing Penn and Camden corridors, all the way back in 2007, but there is nothing in this budget about furthering that plan. Is that because MTA never submitted those plans to the BMC? Because none of those plans ever came to fruition. But expanding regional rail can much better serve the prosperity of Maryland than widening roads.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. MTA has been working on various projects and programs to improve, enhance, and expand the MARC service on all three lines. As MARC does not own the rail right of way or tracks it operates its service on, expansion of the service must be coordinated and approved by host railroads. More recently, MTA is working on extending the service into Virginia and Delaware. Several other critical projects are underway, such as replacement of the old B&P Tunnel, a new MARC West Baltimore Station, redevelopment and restoration of Penn Station and increasing service levels.

Thank you again for your comment.

16. Eric Rockel

I am writing concerning the Long-Range Roadway and Transit Projects, 2028-2050. I am the vice president of an umbrella group of community associations in the Lutherville/Timonium/Cockeysville area, known as the Greater Timonium Community Council. Our residents heard about project #44, the North-South Transit Corridor, from the MTA at one of our meetings in the fall of 2022. The members are dead-set against extending a transit line along York Road north of I-695. In the Central Maryland Regional Transit plan completed in 2020, that plan did not show the transit line to Towson being extended north of the Beltway with this North-South project. The feelings against this add-on leg to the North-South corridor was so pervasive that we circulated petitions, both on-line and by paper, that resulted in 3500 persons signing up against this leg north of the Beltway. BMC can expect major opposition if it supports the part north of I-695. We have made the County Executive, John Olszewski, aware on multiple occasions of our opposition, and I would hope that he conveys our feelings to the BMC.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. In 2020, MTA and its regional partners created the Central Maryland Regional Transit Plan, establishing a vision for mobility over the next 25 years. This plan identified Regional Transit Corridors demonstrating demand for major investments in high-quality transit options. The East-West Corridor from Bayview to Ellicott City and the North-South Corridor from Towson to Downtown Baltimore City were identified as early opportunity corridors and are being studied further to identify the best transit modes and alignments that will benefit the communities they connect. The feasibility study was extended to Lutherville to investigate the potential benefits of connecting to the existing Light Rail system. Whether this segment of the corridor is even considered in the next phase of the project, the alternatives analysis phase, remains to be determined. Extensive planning and technical evaluations remain to be conducted along with further opportunities for the public to provide

comment on these studies as they advance before a specific mode and alignment is determined as preferred option to be pursued by MTA and regional partners.

Thank you again for your comment.

17. **Eric Rockel**

On the long range plan, project #44 - the North South Corridor - should not include the leg of transit from Towson to Lutherville. Residents north of I-695 are strongly opposed to extending light rail in the right of way of York Road.

BRTB response: See response to #16.

18. **Spencer B, supported by willy**

By improving public transit and bike lanes, we will not need as much parking in Baltimore and can utilize lots for green projects. Making Baltimore greener will greatly improve air quality and provide more outdoor space for communities to utilize.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. Baltimore City prioritizes transit and active mobility users in transportation infrastructure projects. The City is committed to increasing the viability of sustainable transportation alternatives by continually growing its network of protected bike facilities and dedicated bus lanes, and generally prioritizing initiatives that reduce dependence on parking and driving. The City is also proactively working to downsize impervious surfaces in places where excess road width is found to contribute to speeding and reckless driving. This typically results in the creation of additional pedestrian, bicycle and green space in the public right-of-way.

Thank you again for your comment.

19. **Transit Choices – Robin Budish, Director**

We hope this message finds you well. Transit Choices would like to make the comments below on the MDOT/MTP Long-Range Transit Plan as requested by Shane Sarver on behalf of the BMC. We would appreciate your thoughts on what would be the most effective way for us to give feedback.

1. Making Penn Station a rail hub - for this to happen, we need to better link the light rail stop at Mt. Royal with Penn Station. As it is now a person who wants to take the light rail to Penn Station has to get off at the Mt. Royal Station and walk 3.5 blocks to Penn Station with whatever luggage they are carrying. In rain, cold weather, and after dark this walk is unpleasant and even scary. In the original planning for the light rail a trestle was built across Interstate 83 to accommodate light rail trains going directly into Penn Station. Because of the rush to get the light rail completed before Camden Yards opened, this connection was never completed. In reviewing the options now we feel that the best way to make this link would be to run an automated shuttle every 4 minutes between Penn Station and the Mt Royal stop. To bring the light rail into Penn Station directly would add another 5 minutes to an already too slow connection between Hunt Valley and downtown. To further make Penn Station a transportation hub we feel that there needs to be a Marc train stop at Bayview. Coupled with a fare change that would allow short commutes, riders could then use the Marc train to go from the West Baltimore stop to Bayview in East Baltimore, a major employment center. We know options are under discussion to run Marc trains as far as Delaware, or for there to be a Marc train

shuttle between BWI and Martin Marrietta. Either of these would create an opportunity for an East-West rail connection in Baltimore. This would not be a replacement for the Red Line but a stop-gap measure that could be built in the interim both relatively inexpensively and in a short-range time frame. Then we would have a true rail hub at Penn Station.

2. Our water transit system in the harbor needs to be expanded both in time and distance. Future water transit should run to the middle Patapsco branch and connect Port Covington (Baltimore Peninsula) and Cherry Hill to the Inner Harbor. The schedule should include weekends as well as weekdays. Ideally the water taxi system and Harbor Connector could be merged into one system with a different fare structure for tourists and commuters. This would enable us to promote the water transit system in a coherent fashion to both residents and commuters alike. Presently, having two separate systems is confusing to riders and makes marketing the systems problematic. Water transit is an important part of Baltimore's overall public transit system.

We would also recommend that both support and funding for transit projects not be disproportionately weighted in favor of highway expansion projects.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. MTA has been awarded a $6 million federal grant from the U.S. Department of Transportation's (USDOT) 2022 Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program and a $3.6 million federal Earmark designation. The grant will assist the $12 million Building Baltimore Penn Station Connections project to improve access in and around Baltimore's Penn Station. This collaborative effort will enhance transportation connections for transit riders, motorists, bicyclists and pedestrians and expand access to the local disadvantaged community, more than 20% of which lacks access to a car. MTA is planning to improve the pedestrian connection to Mt Royal Light Rail station as a part of the Penn Station project. This project will complement investments by other public and private partners to modernize and redevelop Baltimore Penn Station.

MTA is also currently working towards a 30% design milestone for a MARC Bayview station which works to extend rail access to a major medical facility and job center in Baltimore City and creating another transit east-west connection.

Thank you again for your comment.

20. Susan Wierman

I am concerned about the idea of light rail on York Road between Towson and Baltimore. Light rail is not like a local street car. It is designed to provide long distance connections between parking areas and highly concentrated destinations. A light rail on York Road would not serve the people along the route; it would mainly those close to large parking areas. Furthermore, York Road is not wide enough to accommodate both rail and passenger car traffic. A light rail line would limit access via personal vehicle for communities that front on York Road. Fixed rail systems are very expensive and must have substantial demand to provide reasonable cost: benefit ratios. Smaller, more frequent vehicles would provide better service to affected neighborhoods and encourage greater patronage. I don't think a light rail system on York Road is a good investment, and I don't think it would benefit people living along the route.

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. While light rail was a mode considered for the North-South corridor in the feasibility study, there are additional options that are being considered as well. Extensive planning and technical evaluations remain to be conducted along with further opportunities for the public to provide comment on these studies as they advance before a specific mode is determined as preferred option to be pursued by MTA and regional partners. The next step in this process will be an

alternatives analysis, which will consider things like vehicle size/type and operational characteristics, in addition to mode and alignment.

Thank you again for your comment.

21. Will

I noticed that for the RTP corridors project, you get the average cost by taking the average of 7 proposals for each corridor. For each there were 4 Bus, 2 light rail, and 1 heavy rail alternative analyzed. But this results in numbers too high for BRT, but too low for rail projects like the Red Line. How will this affect federal funding?

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The Long-Range Transportation Plan (LRTP) is a living document that is updated every four years. In addition, the LRTP can be amended if the scope of a project changes prior to the adoption of the next LRTP. When MDOT MTA moves forward with a selected alternative for either the East-West or North-South Transit Corridors, the selected scope and estimated cost will either be amended into *Resilience 2050* or included in the next update of the LRTP. Depending on the cost of the selected alternative, this could mean that some projects may need to be removed from the LRTP to ensure that the document remains fiscally constrained.

Thank you again for your comment.

22. Willy

We must focus on electrified railways. Also don't even think about EV buses; waste of valuable resources and literally crush the roads it'll drive on. Just build a light rail or even trolley buses if that's cheaper alternative?

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. The Maryland Greenhouse Gas Reduction Act Reauthorization set a 40 percent reduction target for statewide emissions by 2030 from 2006 levels. MTA subsequently established a goal to convert 50 percent of its Core Bus fleet in Greater Baltimore to zero emission buses (ZEBs) by 2030. This goal was also included in the 2020 Central Maryland Regional Transportation Plan (CMRTP), along with a longer-term goal to convert 95 percent of the Core Bus fleet to zero-emission buses by 2045. The passage of Senate Bill 137 in 2021 and of Senate Bill 67 in 2022 prohibited MTA from entering into new procurements for non-ZEBs (ie, diesel buses) beginning in fiscal year 2023.

Through the Red Line project and the RTP North-South Corridor study, MTA is also investigating potential new Light Rail or Bus Rapid Transit alignments to expand the MTA premium transit network.

Thank you again for your comment.

23. Willy Wong

Don't feel any transit in Baltimore County connect to places people want to go

BRTB response: Thank you for your comment and for participating in the planning process for *Resilience 2050*. Both MDOT MTA and Baltimore County provide transit and are planning additional transit in the county. It would be helpful to know what destinations you believe should be connected.

Thank you again for your comment.

Appendix G: Resolutions

Appendix G: Resolutions

The following resolutions are added to the final report:

BRTB Resolution #22-15 Approval of Technical Process for Baltimore Regional Travel Demand Model Update

BRTB Resolution #23-1 Approving the Round 10 Cooperative Forecast

BRTB Resolution #24-1 Approval of Resilience 2050: Adapting to the Challenges of Tomorrow (Resilience 2050), 2024-2027 Transportation Improvement Program (TIP) and the Associated *Conformity Determination of Resilience 2050 and TIP*.

BALTIMORE METROPOLITAN PLANNING ORGANIZATION

BALTIMORE REGIONAL TRANSPORTATION BOARD
RESOLUTION #22-15

APPROVAL OF VALIDATION OF THE
BALTIMORE REGION TRAVEL DEMAND MODEL - INSITE

WHEREAS, the Baltimore Regional Transportation Board is the designated Metropolitan Planning Organization for the Baltimore region, encompassing the Baltimore Urbanized Area, and includes official representatives of the cities of Annapolis and Baltimore, the counties of Anne Arundel, Baltimore, Carroll, Harford, Howard, and Queen Anne's as well as representatives of the Maryland Department of Transportation, the Maryland Department of the Environment, the Maryland Department of Planning, the Maryland Transit Administration, and Annapolis Transit; and

WHEREAS, the Transportation Planning Division of the Baltimore Metropolitan Council, which serves as staff to the Metropolitan Planning Organization, has revised its computerized modeling process for simulating transportation demand and submitted its Baltimore Region Travel Demand Model to the Technical Committee of the Metropolitan Planning Organization; and

WHEREAS, the Technical Committee has reviewed the technical process of the Baltimore Region Travel Demand Model for base year 2019 as developed through the FY 2019 to 2022 Unified Planning Work Programs; and

NOW, THEREFORE, BE IT RESOLVED, that the Baltimore Regional Transportation Board approves the technical process in performing the Baltimore Region Travel Demand Model for the base year 2019 and recommends its use in analyzing and evaluating transportation demand in a multitude of Unified Planning Work Program tasks, including air quality Conformity Determinations, Transportation Improvement Programs and Long-range Regional Transportation Plans.

I HEREBY CERTIFY that the Baltimore Regional Transportation Board as the Metropolitan Planning Organization for the Baltimore region approved the aforementioned resolution at its June 28, 2022 meeting.

6-28-22
_____
Date

_____
Sam Snead, Chairperson
Baltimore Regional Transportation Board

InSITE 2019 Calibration and Validation

- Geography model coverage area expansion – Adding all of Queen Anne's County and Adams and York Counties, Pennsylvania
- 2020 Census/Transportation Analysis Zone (TAZ) geography incorporation
- InSITE model run time enhancements – InSITE model component multithreaded software and population sampling
- InSITE model parameter calibration to reflect the 2019 Maryland Household Travel Survey observed travel behaviors, choices, and parameters
- Revised Freight Modeling System expanded to new geography coverage and updated base year model inputs
- InSITE model 2019 validation using Location-based Services (LBS) data, classified traffic counts, On-Board Transit Survey, and MDOT MTA Automatic Passenger Count (APC) data
    - Location-based Services
        - Tours – total, length, distribution, and time-of-day
    - Classified traffic counts
        - Volume/VMT by – Jurisdiction, facility type, area type, and screen lines
    - On-Board Transit Survey
        - Total linked and unlinked trips and transfer rates
    - Automatic Passenger Count
        - Route level ridership

BALTIMORE METROPOLITAN PLANNING ORGANIZATION
BALTIMORE REGIONAL TRANSPORTATION BOARD

RESOLUTION #23-1

ENDORSEMENT OF ROUND 10 COOPERATIVE FORECASTING PROCESS THROUGH 2050 FOR USE IN LOCAL AND REGIONAL TRANSPORTATION AND AIR QUALITY PLANNING

WHEREAS, the Baltimore Regional Transportation Board is the designated Metropolitan Planning Organization for the Baltimore region, encompassing the Baltimore Urbanized Area, and includes official representatives of the cities of Annapolis and Baltimore, the counties of Anne Arundel, Baltimore, Carroll, Harford, Howard, and Queen Anne's as well as representatives of the Maryland Department of Transportation, the Maryland Department of the Environment, the Maryland Department of Planning, the Maryland Transit Administration, and Annapolis Transit; and

WHEREAS, the Metropolitan Planning Organization has the responsibility for developing future estimates of travel demand in the Baltimore region and approving conformity analysis of the Long-Range Transportation Plan and the Transportation Improvement Program for the Baltimore region; and

WHEREAS, in connection with these responsibilities, the Baltimore Regional Transportation Board established the Cooperative Forecasting Group to develop a consensus among State, local and regional planners regarding the current estimates and long-range projections for growth and development in the Baltimore region; and

WHEREAS, the previously endorsed Round 9A forecasts have been updated to reflect the most current socioeconomic development in the Baltimore region. These forecasts which consist of data for population, households and employment for small geographic areas, called transportation analysis zones (TAZ), capture the development projected in earlier forecasts and any new development; and

WHEREAS, the Cooperative Forecasting Group has recommended to the Baltimore Regional Transportation Board a set of forecasts termed Round 10, for use in transportation and air quality planning activities; and

WHEREAS, the purpose of socioeconomic forecasting analysis is to provide inputs to decision makers to assist with determining the overall travel demand and air quality effects of growth, at the regional level, on future year highway and transit networks; and

NOW, THEREFORE, BE IT RESOLVED that the Baltimore Regional Transportation Board endorses the Round 10 cooperative forecasting process for use in transportation and air quality planning in the Baltimore region as provided in Attachment 1.

I HEREBY CERTIFY that the Baltimore Regional Transportation Board, as the Metropolitan Planning Organization for the Baltimore region, approved the aforementioned resolution at its July 15, 2022 meeting.

7-15-22
_____
Date

_____
Sam Snead, Chairman
Baltimore Regional Transportation Board

Attachment 1

Local Jurisdiction Submissions: Round 10
Cooperative Forecasts – Population, Household and Employment Controls

Table 1: Round 10 Population

JURISDICTION	2020	2025	2030	2035	2040	2045	2050
Anne Arundel County	592,695	621,687	646,214	664,214	677,424	687,119	694,235
Baltimore City	585,708	594,526	596,393	596,916	599,216	603,436	609,776
Baltimore County	854,523	868,112	876,726	894,541	909,000	920,275	934,521
Carroll County	172,891	176,399	179,140	181,580	183,956	186,253	188,357
Harford County	260,924	270,059	277,819	285,759	293,569	301,252	308,810
Howard County	332,317	349,697	363,987	380,016	393,641	404,607	414,820
Queen Anne's County	49,874	52,712	54,935	56,000	56,667	56,883	57,032
Baltimore Region	2,848,932	2,933,192	2,995,213	3,059,026	3,113,473	3,159,824	3,207,550

Round 10 Population Changes

	Numeric Change				Percent Change			
JURISDICTION	2020-2030	2030-2040	2040-2050	2020-2050	2020-2030	2030-2040	2040-2050	2020-2050
Anne Arundel County	53,519	31,210	16,811	101,540	9.0%	4.8%	2.5%	17.1%
Baltimore City	10,685	2,823	10,560	24,068	1.8%	0.5%	1.8%	4.1%
Baltimore County	22,203	32,275	25,520	79,998	2.6%	3.7%	2.8%	9.4%
Carroll County	6,249	4,816	4,401	15,466	3.6%	2.7%	2.4%	8.9%
Harford County	16,895	15,750	15,241	47,886	6.5%	5.7%	5.2%	18.4%
Howard County	31,670	29,654	21,179	82,503	9.5%	8.1%	5.4%	24.8%
Queen Anne's County	5,061	1,732	365	7,158	10.1%	3.2%	0.6%	14.4%
Baltimore Region	146,281	118,260	94,077	358,618	5.1%	3.9%	3.0%	12.6%

Note: Throughout, Anne Arundel County data includes the City of Annapolis

Table 2: Round 10 Households

JURISDICTION	2020	2025	2030	2035	2040	2045	2050
Anne Arundel County	219,971	228,528	236,781	244,935	251,583	256,061	260,349
Baltimore City	251,479	258,233	260,583	262,036	264,323	267,459	271,532
Baltimore County	329,955	334,975	338,408	345,501	351,261	355,753	361,428
Carroll County	63,050	64,455	65,595	66,670	67,701	68,709	69,704
Harford County	98,282	101,919	105,719	109,519	113,319	117,119	120,919
Howard County	118,781	126,599	133,334	141,148	147,881	153,953	159,721
Queen Anne's County	19,240	20,355	21,223	21,636	21,892	21,975	22,033
Baltimore Region	1,100,758	1,135,064	1,161,643	1,191,444	1,217,960	1,241,029	1,265,686

Round 10 Household Changes

	Numeric Change				Percent Change			
JURISDICTION	2020-2030	2030-2040	2040-2050	2020-2050	2020-2030	2030-2040	2040-2050	2020-2050
Anne Arundel County	16,810	14,802	8,766	40,378	7.6%	6.3%	3.5%	18.4%
Baltimore City	9,104	3,740	7,209	20,053	3.6%	1.4%	2.7%	8.0%
Baltimore County	8,453	12,853	10,167	31,473	2.6%	3.8%	2.9%	9.5%
Carroll County	2,545	2,106	2,003	6,654	4.0%	3.2%	3.0%	10.6%
Harford County	7,437	7,600	7,600	22,637	7.6%	7.2%	6.7%	23.0%
Howard County	14,553	14,547	11,840	40,940	12.3%	10.9%	8.0%	34.5%
Queen Anne's County	1,983	669	141	2,793	10.3%	3.2%	0.6%	14.5%
Baltimore Region	60,885	56,317	47,727	164,928	5.5%	4.8%	3.9%	15.0%

Table 3: Round 10 Total Employment

JURISDICTION	2020	2025	2030	2035	2040	2045	2050
Anne Arundel County	340,555	375,489	389,833	404,256	419,012	434,725	451,505
Baltimore City	365,047	377,443	396,188	413,808	430,379	446,685	450,996
Baltimore County	398,693	411,260	425,058	428,306	434,620	441,159	444,251
Carroll County	62,814	64,313	65,821	67,319	68,809	70,290	71,789
Harford County	100,748	110,606	120,560	130,808	141,273	151,868	162,499
Howard County	185,600	193,976	203,284	217,619	231,970	238,935	245,600
Queen Anne's County	16,562	16,775	17,125	17,250	17,375	17,525	17,700
Baltimore Region	1,470,019	1,549,862	1,617,869	1,679,367	1,743,438	1,801,187	1,844,339

Round 10 Total Employment Changes

JURISDICTION	2020-2030	2030-2040	2040-2050	2020-2050	2020-2030	2030-2040	2040-2050	2020-2050
Anne Arundel County	49,278	29,179	32,493	110,950	14.5%	7.5%	7.8%	32.6%
Baltimore City	31,141	34,191	20,617	85,949	8.5%	8.6%	4.8%	23.5%
Baltimore County	26,365	9,562	9,631	45,558	6.6%	2.2%	2.2%	11.4%
Carroll County	3,006	2,988	2,979	8,974	4.8%	4.5%	4.3%	14.3%
Harford County	19,812	20,712	21,226	61,751	19.7%	17.2%	15.0%	61.3%
Howard County	17,684	28,686	13,630	60,000	9.5%	14.1%	5.9%	32.3%
Queen Anne's County	563	250	325	1,138	3.4%	1.5%	1.9%	6.9%
Baltimore Region	147,850	125,568	100,902	374,320	10.1%	7.8%	5.8%	25.5%

BALTIMORE METROPOLITAN PLANNING ORGANIZATION

BALTIMORE REGIONAL TRANSPORTATION BOARD
RESOLUTION #24-1

APPROVAL OF *RESILIENCE 2050: ADAPTING TO THE CHALLENGES OF TOMORROW* (*RESILIENCE 2050), 2024 – 2027 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)* AND THE ASSOCIATED *CONFORMITY DETERMINATION OF RESILIENCE 2050 AND TIP*

WHEREAS, the Baltimore Regional Transportation Board is the designated Metropolitan Planning Organization for the Baltimore region, encompassing the Baltimore Urbanized Area, and includes official representatives of the cities of Annapolis and Baltimore, the counties of Anne Arundel, Baltimore, Carroll, Harford, Howard, and Queen Anne's as well as representatives of the Maryland Department of Transportation, the Maryland Department of the Environment, the Maryland Department of Planning, the Maryland Transit Administration, and Annapolis Transit; and

WHEREAS, the Baltimore Regional Transportation Board, as the Metropolitan Planning Organization for the Baltimore region, is required under the Infrastructure and Investment Jobs Act (IIJA) to complete a long-range transportation plan and transportation improvement program at least every four years for the Baltimore region; and

WHEREAS, the Baltimore Regional Transportation Board has coordinated with Baltimore Metropolitan Council staff to ensure its compliance with IIJA requirements and documented in the Metropolitan Transportation Planning regulations (May 27, 2016 *Federal Register*); and

WHEREAS, development of the long-range transportation plan results from a continuous, cooperative and comprehensive planning process and considers and integrates as appropriate the federal planning factors documented in the Metropolitan Transportation Planning regulations; and

WHEREAS, the FY 2024-2027 Baltimore Region Transportation Improvement Program is a prioritized program of transportation projects which are financially constrained by year and includes a financial plan that demonstrates that projects can be implemented using available revenue sources; and

WHEREAS, the Baltimore Regional Transportation Board, in accordance with IIJA, developed a list of highway and transit projects, as well as a set-aside for transportation system management and operations, complete streets – bicycle and pedestrian, and transportation emission reduction measures for the Baltimore region, referred to as the Preferred Alternative; and

WHEREAS, the Baltimore Regional Transportation Board, as the Metropolitan Planning Organization for the Baltimore region, is required under Clean Air Act Amendments of 1990 and the U.S. Environmental Protection Agency's Transportation Conformity Rule to conduct analyses to ensure that the region's transportation plans and programs conform with the State Implementation Plan (SIP); and

WHEREAS, the conformity analysis as reported in the "Conformity Determination of *Resilience 2050* and the 2024 - 2027 Transportation Improvement Program," dated May 2023, provides the basis for a finding of conformity to 8-hour ozone National Ambient Air Quality Standards (NAAQS) SIP for the Baltimore region, which includes meeting the 2012 Reasonable Further Progress motor vehicle emission budgets as determined adequate by U.S. EPA. This addresses three ozone NAAQS: 1997, 2008 and 2015. (Attachment 1: Tables 1 and 2); and

WHEREAS, opportunities for public comment were provided – including a 35-day public comment period, seven public meetings (one held in each jurisdiction), a virtual public meeting, and regularly scheduled meetings of the Baltimore Regional Transportation Board, Interagency Consultation Group and Technical Committee – with respect to the Draft *Resilience 2050, 2024 – 2027 TIP* - and the methodology and results of the conformity analysis – and these comments were duly considered by the Metropolitan Planning Organization in this deliberation process; and

WHEREAS, a range of outreach strategies was employed to share information about *Resilience 2050*, the 2024 – 2027 TIP and the Conformity Determination supported by opportunities for public comment, including seven public meetings, one virtual meeting, and informational on-demand multimedia presentations. A 35-day review was offered and numerous public comments were considered by the BRTB.

NOW, THEREFORE, BE IT RESOLVED that the Baltimore Regional Transportation Board approves *Resilience 2050: Adapting to the Challenges of Tomorrow* (*Resilience 2050),* the *2024 – 2027 Transportation Improvement Program (TIP) a*nd the associated *Conformity Determination of Resilience 2050 and the TIP*.

I HEREBY CERTIFY that the Baltimore Regional Transportation Board, as the Metropolitan Planning Organization for the Baltimore region, approved the aforementioned resolution at its July 25, 2023 meeting.

7-25-23
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Date

_____
D'Andrea Walker, Chair
Baltimore Regional Transportation Board

Attachment 1

Table 1. VOC Emissions Test Results (average summer weekday, tons/day)

	2023	2025	2035	2045	2050
Total Emissions	16.986	15.232	10.047	9.261	9.259
Conformity Budget[1]	40.2	40.2	40.2	40.2	40.2
Conformity Result	**PASS**	**PASS**	**PASS**	**PASS**	**PASS**

[1] 2012, 8-hour ozone Reasonable Further Progress (RFP) SIP budget for the Baltimore region (motor vehicle emission budgets determined adequate by EPA on February 22, 2016)

Table 2. Weekday NOx Emissions Test Results (average summer weekday, tons/day)

	2023	2025	2035	2045	2050
Total Emissions	30.551	25.433	17.586	17.514	18.132
Conformity Budget[1]	93.5	93.5	93.5	93.5	93.5
Conformity Result	**PASS**	**PASS**	**PASS**	**PASS**	**PASS**

[1] 2012, 8-hour ozone Reasonable Further Progress (RFP) SIP budget for the Baltimore region (motor vehicle emission budgets determined adequate by EPA on February 22, 2016)

Appendix I: Emission Reduction Strategies in the Region

This Appendix includes the following sections:

- Appendix I-1: Description of Emission Reduction Strategies
- Appendix I-2: Tracking the Status of Emission Reduction Strategies

Appendix I-1: Description of Emission Reduction Strategies

This appendix provides descriptions of the key categories of emission reduction strategies used in the Baltimore region and the status of implementation of those strategies. The categories of strategies covered in this appendix include Commuter Assistance Activities, Bicycle/Pedestrian Activities, Park-and-Ride Programs/Lots, Public Transit Services, Management and Operations Projects, Preferential Parking Management, and Clean Vehicles, Fuels and Technologies. These categories are used for organizational purposes and do not relate directly to any particular legislative or funding areas.

While the focus of transportation conformity is on the NAAQS, many of these efforts also work towards greenhouse gas (GHG) reductions. In December 2021 FHWA shared planning emphasis areas for use in the development of metropolitan and statewide planning and research work programs. One of these emphasis areas is dedicated to tackling the climate crisis and transitioning to a clean energy, resilient future. The following efforts contribute to that vision.

COMMUTER ASSISTANCE ACTIVITIES

Rideshare/TDM Program

The Rideshare Program, a continuing statewide program since 1978, is administered by Maryland Department of Transportation Maryland Transit Administration (MDOT MTA). MDOT MTA provides funding support to local rideshare programs in order to strengthen carpool/vanpool matching and Transportation Demand Management (TDM) services at the jurisdictional level. The Baltimore Metropolitan Council (BMC) provides ridesharing coordination services for Baltimore and Carroll Counties. Through the Rideshare program, the following rideshare services are provided:

- Carpooling/vanpool/trip matching to interested commuters via the Commuter Connections Database.
- TDM information and services to commuters and employers.
- Public outreach including tabling at public events, transportation fairs, and community hubs.
- Assistance with identifying opportunities for alternative commuting strategies such as transit, flexible work hours, active transportation, and telework for both commuters and employers.
- Printed and electronic information distributed to both the general public and employers.
- Advertisements in social media, newspapers, regional magazines, radio, and online to encourage all TDM modes.
- Clean commute activities including, Bike to Work Week, Dump the Pump Day, and transportation fairs.
- Promotion of the regional Guaranteed Ride Home program to both employers and commuters.
- Promotion of and assistance implementing the Maryland Commuter Tax Benefit program, allowing eligible employers to claim a tax credit of 50% of the cost of providing qualifying commuter benefits.

- Promotion of and assistance implementing and operating the Regional School Pool program, which matches students (through their parents' registration) for carpool, bike convoy and pedestrian group matching within member schools.
- Promotion of the MDOT MTA Commuter Choice discount transit fare programs.
- Promotion of and assistance implementing and operating incenTrip, a mode-switch incentive program.
- Promotion and recruitment of business partners for the Employer Partner Program to recognize and promote organizations that are supporting their employees with commuter benefits and incentives

Commuter Choice Maryland and the Maryland Commuter Tax Credit

The Commuter Choice Maryland Commuter Benefits program is an incentive designed primarily to encourage SOV commuters to switch to alternative modes. The program allows employers to offer reduced-fare transit pass distribution to encourage the use of transit or qualified carpools or vanpools. Employers are also rewarded with special state tax deductions, state tax credits, and savings on certain payroll taxes. This tax credit is in addition to the Federal tax code allowing employers to provide tax-free benefits (up to $300 per employee per month in 2023).

The Maryland Commuter Tax Credit allows Maryland-based employers to claim a tax credit of up to $100 per participating employee, per month, for providing tax-free commuter benefits. Maryland employers are able to claim tax credits for providing transit passes/vouch, operating up a Guaranteed Ride Home Program, Cash In Lieu of Parking, and Active Commute, Carpooling, Vanpooling, Telework, and Multimodal Last Mile Solutions programs. Employers must register annually to participate in the program. This feature of Maryland law has the potential to reduce single occupancy vehicle use, increase transit ridership, reduce traffic congestion, and improve air quality. Details are available at www.commuterchoicemaryland.com.

Baltimore region commuters are now eligible to use incenTrip, a mode-switch incentive program originally limited to the Maryland DC suburbs. incenTrip uses a mobile app to connect users with multi-modal transportation options and rewards responsible commute trips with points that can be exchanged for cash rewards.

Reduced Fare Passes

Programs that reduce transit fares help to encourage greater usage of transit, thereby reducing pollution from private automobiles. One of these reduced transit fare programs is the Reduced Fare CharmCard®, available to seniors and persons with disabilities. The card may be used to ride at reduced fare on these MDOT MTA services: Local Bus, Light Rail, Metro Subway, and in Washington, DC wherever the SmarTrip logo is displayed. For more information, visit https://www.mtacharmcard.com/seniors/.

BICYCLE/ PEDESTRIAN ACTIVITIES

In each jurisdiction, local efforts continue to support bicyclists and pedestrians. The Maryland Department of Transportation (MDOT) also continues similar efforts. The following governmental agencies in the Baltimore region have created bicycle and pedestrian master plans, complete streets plans, and/or vision zero plans. Through these plans, agencies can work to develop this key part of a multi-modal transportation network.

Agency	Plan Name	Status
Maryland Department of Transportation	*2040 Maryland Bicycle and Pedestrian Master Plan*	Completed January 2019 Update currently underway
City of Annapolis	*Bicycle Master Plan*	Adopted January 2012
Baltimore City	*Bicycle Master Plan*	Adopted 2015 Update in progress
	Complete Streets Manual	Completed 2021
	Baltimore Green Network Plan	Completed 2018 Amendment currently underway
Baltimore County	*Phase I: Eastern County Bicycle & Pedestrian Plan*	Adopted 2006
	Phase II: Western County Bicycle & Pedestrian Plan	Adopted 2012
	Bicycle and Pedestrian Master Plan	Currently underway
Anne Arundel County	*Pedestrian & Bicycle Functional Master Plan*	Completed 2013
	Walk & Roll Anne Arundel!	Currently underway
	Vision Zero Anne Arundel County	Completed 2022
Carroll County	*Freedom Area Bicycle and Pedestrian Master Plan*	Completed 2013
	Bicycle-Pedestrian Master Plan	Approved November 2019
Harford County	*Bicycle & Pedestrian Master Plan*	Adopted 2013 Update completed 2022
Howard County	*WalkHoward*	Adopted 2020
	BikeHoward	Adopted 2016 Scheduled to be updated 2023
	Complete Streets Design Manual	Accepted 2022

As policy, MDOT includes bicycling and walking accommodations in all of its projects, wherever possible. Two programs provide nearly all funding for bicycle projects, the FHWA Transportation Alternatives (TA) Program and the Kim Lamphier Bikeways Network Program. TA funds went to six projects in the Baltimore Region for fiscal year 2022. The total request for these projects was $5,767,549. With match, the total cost of the seven projects is $7,376,599. The Kim Lamphier Bikeways Network Program awarded funds to five projects in the Baltimore region for fiscal year 2023 with award ranging from $13,600 to $240,000.

MDOT held its third annual WALKTOBER in 2022, a month where MDOT and other partnering agencies promote and host events and webinars spotlighting Maryland pedestrian safety, health, and commuting options in current walk programs and Initiatives. MDOT shared a series of informational resources and free webinars for pedestrians throughout the month of October. MDOT MTA has had bicycle racks on all of its transit buses serving the Baltimore region since September 2008.

Figure 1: MARC Bike Car

In addition, customers can bring full-sized bicycles aboard all MDOT MTA MARC trains.

All scheduled trains feature at least one car with two first-come, first-served bicycle racks at no additional charge. This expands on the accommodation of full-sized bicycles on the Penn Line. See Figure 1 for an example of a bike train car which accommodates full size bicycles. Combining bicycling with transit use may provide a reasonable alternative to driving a personal vehicle, one that may not be possible if a traveler considers only bicycling or transit as a travel option.

In *Resilience 2050*, the long-range transportation plan (LRTP) for the Baltimore region, approximately 70 percent of the projects include pedestrian and bicycle facilities such as sidewalks, mid-block crossings, ADA improvements, shared-use paths and bicycle lanes. Additionally, the BRTB set-aside $250M in funding to encourage programs and projects that reduce emissions due to the Baltimore region's nonattainment status. This set-aside funding includes the top regional active transportation priorities identified by our Bicycle and Pedestrian Advisory Group, state agencies and other stakeholders in 2022. These regional priorities include projects such as the Patapsco Regional Greenway and the Baltimore Greenway Trail Network.

In Resilience 2050: Adapting to the Challenges of Tomorrow, the new LRTP for the Baltimore region, there is a project scoring process to assess the complete streets features of highway and transit projects has been updated. Complete Streets refers to a transportation system that includes features ensuring the safety, security, comfort, access, and convenience of all users of the street including pedestrians, bicyclists, transit riders, and shared mobility users.

The BMC is supporting BRTB members who wish to pursue 30% design for segments of the PRG. Thirty percent design was completed for the Elkridge to Guinness segment and the Sykesville to McKeldin segment. Preliminary design is currently underway for the Guinness to Southwest Area Park segment. In fiscal years 2023/2024 30% design of another segment of the PRG will be completed.

The BMC, on behalf of the BRTB, promotes bicycling and walking through the following mechanisms:

- Bicycling and Pedestrian Advisory Group (BPAG) is hosted, staffed, and supported by BMC. Its members advise the BRTB's Technical Committee on important bicycle and pedestrian issues.
- Periodic articles in COG Quarterly, BMC's public newsletter, inform people in the region on bicycling and pedestrian matters.
- The Active Transportation newsletter created by BMC staff shares information with almost 6,000 subscribers on active transportation news around the region.

The BMC and its members, organized the annual Bike to Work celebration in the region. Bike to Work Week is a campaign that celebrates bicycling as a commuting option while promoting public awareness of its safety and environmental benefits. Bike to Work Week helps raise awareness of

the rules of the road for drivers, pedestrians, and cyclists, and also highlights the need for bicycle facilities that improve safety and are comfortable to use by a broad audience. Community members from around the Baltimore region took part in the 25th annual Bike to Work celebration the third week of May 2022. Participants who registered and biked during Bike to Work Week could pick up a free t-shirt and safety materials at participating local bike shops and at local Bike to Work celebrations. Bike rides to any location were eligible for participation in the event. Community members were encouraged to bike to the store, the playground, around their neighborhood, to work, or to school. Planning is currently underway for Bike to Work 2023.

PARK-AND-RIDE PROGRAMS/LOTS

The Maryland Department of Transportation State Highway Administration (MDOT SHA) has assessed their park-and-ride facilities. Usage of MDOT SHA park-and-ride facilities in 2022 is estimated at 16 percent across the region, compared with 45 percent in 2019. The most parking spaces are provided in Anne Arundel and Howard Counties. Baltimore County usage is lower from 2019 with a percentage drop from 29 to 17 percent. The table below displays information on these lots from Fall 2021. A substantial amount of VMT is reduced every year as a result of park-and-ride lots in the Baltimore region. MDOT SHA lots only account for a portion of park-and-ride lots in the region.

SHA Park-and-Ride Facilities 2022

County	Lots	Spaces	Percent Use
Anne Arundel	8	2,120	15
Baltimore	9	1,121	17
Carroll	7	453	20
Harford	14	1,487	19
Howard	8	1,958	12
Regional Total	**46**	**7,139**	**16**

BMC recently published the Baltimore Region Park and Ride Map, covering ninety-nine fee-free park and ride lots owned by eleven entities, including SHA. These lots offer over 27,000 free parking spaces to commuters and travelers in the region.

In addition to free park and ride lots, thirty-three rail stations in the region offer over 4,700 paid spaces to access light rail, metro, and marc train service.

Park & Ride Spaces in the Baltimore Region (Free Lots)

Jurisdiction	Lots in Jurisdiction	Total Spaces	Total Lots Owned	Total Spaces Owned
Anne Arundel	19	9627	3	592
Baltimore City	10	2891	1	348
Baltimore Co.	28	7874	6	1707
Carroll	8	541	1	80
Harford	14	2206	0	0
Howard	29	3453	3	390
Queen Anne's	5	617	0	0
AMTRAK	-	-	2	530
CSX	-	-	1	34
MAA	-	-	1	3187
MTA	-	-	27	14886
PRIVATE	-	-	5	447
SHA	-	-	41	6501
TBD	-	-	10	1380

PUBLIC TRANSIT SERVICES

The Baltimore region is served by an array of bus and rail transportation services. This section addresses both bus and rail transportation in the Baltimore region.

In addition to current bus and rail services, MDOT MTA is currently studying two Regional Transit Plan corridors: an East-West corridor between Johns Hopkins Bayview and Ellicott City and a North-South corridor between Towson and South Baltimore. MDOT MTA is studying multiple alignments along these routes, and is considering bus rapid transit, light rail, and heavy rail alternatives.

Bus Transit

The MDOT MTA operates a far-reaching system of bus services. The size of MDOT MTA's bus fleet is constantly changing the delivery and retirement of buses, and is approximately 765 buses. Goals in line with the Maryland Greenhouse Gas Reduction Act and Regional Transit Plan include replacing 50% of the bus fleet to zero emission buses by 2030. In line with the Zero Emissions

Bus Transition Act, MDOT MTA is piloting zero-emissions buses in 2023. The pilot program will inform future vehicle and facility investments, including redeveloping the Eastern Bus Division in Baltimore City to support 100% battery electric buses. Most of the bus routes serve areas within and adjacent to the Baltimore Beltway, connecting the region's suburbs to downtown and neighborhoods within the downtown area. MDOT MTA's BaltimoreLink bus service has 65 bus routes, which include the following.

- **CityLink**: 12 color-coded, high-frequency bus routes which offer 24-hour service, form a downtown grid, and radiate out from Baltimore City on major streets.
- **LocalLink**: 45 local bus routes provide comprehensive crosstown connections and system-wide connectivity to neighborhoods and communities.
- **Express BusLink**: Express BusLink consists of 8 express bus routes that provide suburb-to-city and suburb-to-suburb connections. Typically, express bus routes have fewer stops, use higher speed roadways, and operate during peak hours.
- **Commuter Bus:** Commuter bus service provides an express transit connection from suburban and residential areas to the Baltimore and Washington, D.C. regions. Commuter bus service uses coach vehicles and typically comprise longer trips than Express BusLink routes. 36 routes operate throughout Maryland, with 19 of these routes beginning and/or ending in the Baltimore region.

There are also locally-operated transit systems, or LOTS, that operate in the Baltimore metropolitan region, including Anne Arundel Office of Transportation, Annapolis Transit, Baltimore CountyRide and the Loop Baltimore County Circulator, Carroll County's Trailblazer, the Charm City Circulator and Harbor Connector, Harford Transit LINK, and the Regional Transportation Agency of Central Maryland (RTA). With the exception of RTA, which operates in both Howard and parts of Anne Arundel County, the LOTS operate within their jurisdictions only.

The Rabbit Express commuter bus operated by Rabbit Transit out of York, Pennsylvania has the I-83 South route with multiple weekday roundtrip service from York to Hunt Valley, Black and Decker, and Towson, Maryland. It connects with MDOT MTA Light Rail and the Towson University Shuttle. 83S buses will stop at any marked MDOT MTA bus stop along the designated route for alighting passengers, however, all boarding locations must be pre-approved by Rabbit Transit.

In addition to MDOT MTA bus service, local bus service, and Rabbit Express, there are private bus companies that offer intercity bus service to the region. MDOT MTA launched an intercity bus program in January 2011 to connect rural communities in Maryland. The Western service operates from Grantsville to Baltimore via the Bay Runner Shuttle, the Central service operates from Elkton to Baltimore via Greyhound, and the Eastern service operates from Ocean City to Baltimore via Bay Runner Shuttle.

The Greyhound bus station at 2110 Haines Street provides a link between intercity and local public transportation, being served by MDOT MTA routes 73 and 75 with routes 69 and 70 stopping nearby. Additionally, numerous companies such as Megabus and FlixBus provide intercity service from Baltimore to regional destinations such as New York, Richmond, and Pittsburgh. Megabus departs from the White Marsh Park-and-Ride facility while Bolt Bus departs from Baltimore City.

Rail Transit

Rail Transit in the Baltimore region is provided through MDOT MTA's Metro SubwayLink, Light RailLink, and Maryland Area Rail Commuter (MARC) service.

- **Metro SubwayLink -** MDOT MTA's Metro Subway system, called Metro SubwayLink, provides high-speed heavy rail transit service in a 15.5-mile corridor, with 14 stations from Owings Mills in western Baltimore County through downtown Baltimore to Johns Hopkins Hospital east of downtown. Connecting bus service is provided with MDOT MTA bus routes. Currently, Metro SubwayLink is undergoing upgrades and replacement of the Metro Cars and Train Control System with modern, reliable equipment that will enhance passenger comfort, ensure better reliability, and offer improved safety.
- **Light RailLink -** MDOT MTA's Light RailLink provides light rail service in a 30-mile north-south corridor from Baltimore County to Anne Arundel County. The main line runs between Hunt Valley and Glen Burnie with extensions to Penn Station in downtown Baltimore and to Baltimore/Washington International Thurgood Marshall Airport in Anne Arundel County. Light RailLink serves the area by linking communities in the northern and southern suburbs with the downtown core and provides Baltimore City residents access to suburban job centers, such as those located at BWI Airport, the BWI Business District, and the Hunt Valley office park. Service runs every day of the week. There are 33 stations with free parking provided at 12 of these stations.

  All but 2.6 miles of the Light Rail are double-track. The remaining 2.6 miles are single-track due to right-of-way issues. A majority of the system from Linthicum to Timonium operates on 15-minute headways, with 30-minute headways on branches.

  Light RailLink vehicles are undergoing upgrades to various systems to address parts obsolescence, improve vehicle performance and reliability, and enhance passenger comfort. Additionally, initial planning is underway for future replacement of the Light Rail fleet with modern low-floor vehicles. This replacement will also address station upgrades, signal and systems compatibility, and maintenance shop retrofits.

- **Maryland Area Rail Commuter (MARC) -** MDOT MTA's MARC service provides high-speed, medium frequency commuter rail service in the Baltimore region and beyond. MARC operates on three lines: Brunswick, Camden, and Penn Lines with service to Baltimore, Maryland; Washington, DC; eight counties in Maryland; and parts of northern West Virginia. MARC serves Anne Arundel, Baltimore, Cecil, Frederick, Harford, Howard, Montgomery, and Prince George's Counties, and Baltimore City. The system encompasses approximately 200 miles of track and 42 stations, providing 95 trips daily. MARCs revenue fleet consists of 177 railcars and 42 diesel locomotives, which are operated at maximum speeds of 125 miles per hour, depending on design and railroad limitations. In the Baltimore region, MARC trains operate in two existing rail corridors totaling 112 miles. The Penn Line runs between Perryville in Cecil County and Union Station in Washington D.C. and stops at eleven stations in the region. The Camden Line runs from Camden Station in Baltimore City to Union Station and stops at ten stations in the region.

In addition to MDOT MTA rail services, the Baltimore region is also served by Amtrak at two stations: BWI Airport Station and Baltimore Penn Station. The region is served by nine Amtrak

routes, including the Northeast Regional and Acela Express, and many major cities can be reached by rail, including New York City, Boston, Miami, Chicago, and New Orleans.

TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS STRATEGIES

Transportation systems management and operations (TSMO) strategies maximize the use of the transportation system through the use of technologies, coordination, and communications. MDOT SHA's TSMO efforts are being led by the Office of Transportation Mobility and Operations. In June 2020, the MDOT SHA Administrator signed a memorandum directing the mainstreaming of TSMO programs across the administration. The focus on TSMO enhances safety, reliability, and efficiency of the roadway network, as well as reduces emissions. TSMO strategies address recurring and non-recurring congestion.

The MDOT SHA Strategic Plan (2018) provides a statewide TSMO vision and goals. The MDOT TSMO Master Plan (2020) presents TSMO projects, using a "system of systems" approach, to provide TSMO strategy recommendations along 17 corridors across the state. Examples of TSMO strategies included in the Master Plan for the Baltimore region include: closed circuit TV cameras, roadside units to convey data to vehicles, upgraded traffic signals that include connected vehicle technology, part time shoulder use, queue warning, and fiber optic cable installation.

One of the major components of the state's TSMO efforts is the CHART program that focuses on improving the safety and mobility for the users of Maryland's highways through the application of intelligent transportation system technologies and interagency teamwork. The Statewide Operations Center, Authority Operations Center, and two satellite Operations Centers in the region support the CHART program by using TSMO strategies to monitor the state's roadways to quickly identify and clear crashes as well as manage traffic to reduce the impact of incidents. CHART also maintains roving rapid response trucks that operate 24 hours 7 days per week on many of the state highways in the region and provide assistance to disabled motorists, assist in clearing incidents from travel lanes, and reroute traffic around incidents. The state also has a traveler information system (www.md511.org) to provide real-time transportation condition information to the public.

The state's TSMO program, including its CHART operations, save tens of millions of vehicle-hours of delay statewide, millions of gallons of fuel statewide, and reduce overall mobile source emissions.

Additional examples of TSMO programs operating in the region are described below.

Electronic Toll Collection

The use of electronic toll collection technology enables vehicles to move faster through the tolling process, reducing delay at tollbooths, thereby reducing traffic congestion and air pollution emissions. The Maryland Transportation Authority commenced operation of its electronic toll collection system, M-TAG, at the Authority's three harbor crossing facilities in 1999. By fall 2001, all toll facilities in the region were equipped with electronic toll collection equipment.

In 2001, MDTA joined the E-ZPass InterAgency Group, a coalition of 25 toll agencies in 15 states. At present, travelers in Maryland, as well as at most toll facilities in Delaware, Illinois, Indiana,

Maine, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, Virginia, and West Virginia can pay tolls using one electronic device.

Starting in October 2019, MDTA began cashless toll collection at the Francis Scott Key Bridge and the Thomas J. Hatem Memorial ("Bay") Bridge, with tolls being collected by E-ZPass or video tolling. The COVID-19 pandemic had a notable impact on the volume of traffic on Maryland's tolled facilities and on the transition to all electronic toll collection. Due to the pandemic and significant reduction in traffic (from July 2019 to July 2020, decrease of 28%), the transition to all electronic toll collection was accelerated. Cash collection was suspended at all facilities on March 17, 2020, and the Governor announced that cash collection had permanently ended on August 6, 2020. Vehicles without an E-ZPass were transitioned to video collection. As a result, E-ZPass use dropped system-wide from 78% in July 2019 to 72% the following year. The process to convert to gantry use and remove toll plazas will be phased in through 2025.

Benefits of cashless tolling include less idling time resulting in increased fuel efficiency and reduced emissions as well as decreased congestion and increased driver and worker safety. MDTA estimates drivers at the Hatem and Key bridges will save $1 million in fuel and 44,000 hours by not stopping at toll booths. Additional MDTA facilities will be converted in the future.
The table below shows the portion of vehicles that use E-ZPass and video tolling in the Baltimore region.

Facility	Percent Using E-ZPass	Percent Using Video
I-95 Express Toll Lanes	94%	06%
William Preston Lane Jr. Memorial (Bay) Bridge	81%	19%
Baltimore Harbor Tunnel	80%	20%
Fort McHenry Tunnel	82%	18%
Francis Scott Key Bridge	80%	20%
Thomas J. Hatem Memorial Bridge	89%	11%
John F. Kennedy Memorial Highway	85%	15%

Traffic Signal Retiming

MDOT SHA has a program to review and retime its signals statewide every three years, including its 1,200 signals in the Baltimore region. In addition, signals in high profile corridors or corridors subject to significant traffic pattern change are evaluated on a more frequent schedule. This program results in smoother traffic flow as well as reduced emissions resulting from idling vehicles.

In 2022, MDOT SHA's Traffic Development and Support Division (TDSD) completed review of nine signal systems containing 36 signals in the Baltimore Metropolitan Region. These systems include:

- MD 100 at Coca Cola Drive (3)
- US 40 Rosedale (4)
- MD 45 Shawan (6)
- MD 32 West Friendship (4)
- MD 2 Edgewater (7)
- MD 8 Stevensville (4)
- MD 24 Forest Hills (4)
- MD 450 Naval Academy (2)
- MD 450 Annapolis (2)

The system reviews resulted in annual savings of 90,756 hours of delay, 27,900 gallons of fuel, 18,500 grams HC emissions, 5,424,938 grams CO emissions and 279,563 grams NO emissions. Stops were reduced by 6.2 million annually. These values are derived from Trafficware's SimTraffic microsimulation modeling software. The total value of savings is estimated at $4.2 million.

In addition to system reviews, timing was provided for four new, modified or temporary traffic signals in the Baltimore Metropolitan Region. These include new signals and signals where modifications required extensive timing adjustments. Minor phase or geometric modifications are not tracked. New and modified signals include:

- MD 103 @ Long Gate Center Turn-on
- MD 94 Temporary Bridge Signals (2)
- MD 175 @ Piedmont Turn-on

Traffic Incident Management for the Baltimore Region Committee

Launched in September 2000, the Traffic Incident Management for the Baltimore Region Committee (formerly called the Baltimore Regional Operations Coordination Committee) works to improve coordination of incident management activities to enhance the safety of responders and the traveling public, reduce traffic congestion and delay, and improve the quality of the environment. Participants on the TIMBR Committee include police, fire, transportation and emergency management agencies from the jurisdictions, MDOT and its business units, Maryland State Police, MDE, FHWA, towing company representatives, and others. Since the inception of the TIMBR Committee, various projects and activities have been undertaken to improve responder coordination, cooperation, and communication, leading to incidents being cleared more quickly and more safely.

PREFERENTIAL PARKING MANAGEMENT

Parking management is an important strategy for managing transportation demand and a complementary action to increase the effectiveness of the various rideshare programs. This strategy assumes several forms, with preferential parking management being the most basic.
Preferential parking for carpools/vanpools is a traditional emission reduction strategy in the Baltimore region. Carpoolers receive the most desirable parking spaces, usually those nearest to the building or in protective garages.

CLEAN VEHICLES, FUELS AND TECHNOLOGIES

Alternative Fuel Vehicle Incentives

All-electric and plug-in hybrid vehicles provide the ability for drivers to reduce the amount of fuel they burn, and reduce emissions as a result. Incentives are often provided by the state and federal government for the purchase of these clean vehicles and their supply equipment. Currently, the State of Maryland offers a state *rebate* of *40%* of the cost of electric vehicle charging equipment and installation (up to *$700* for individuals, *$4,000* for commercial businesses *through the EVSE Rebate Program*.). And, the federal government provides a tax credit of up to $7500 for all-electric or plug-in hybrid cars. *The State of Maryland also offers fleets varying incentives for electric vehicles and other alternative fuel vehicles through the Clean Fuels Incentive Programs (CFIP) and the Maryland Smart Energy Communities (MSEC) Program.*

Also, as part of the Maryland Volkswagen Settlement, MDE and MEA developed a light duty charging infrastructure grants program. Maryland conducted three rounds of funding, with a total of $11.3 million available. Each round of funding had approx. $3.7 million in funds. The program focused on workplace charging, state owned properties (Park-and-Rides, state parks etc.) and Corridor/HUB charging locations. The first round of funding opened on December 8, 2020, and MDE received fifty-five applications totaling approx. $11.7 million in funding requests. Based on the application review process, awards were made to thirty-seven applications including 24 awards for Level 2 chargers with 145 charging ports for workplace charging, and 13 awards for 36 new Level 3 charging ports for corridor charging. The second round of funding opened on December 22, 2022. The remaining round opened late in the 2022 calendar year.

NEVI Program

The National Electric Vehicle Infrastructure (NEVI) Program is required by the Bipartisan Infrastructure Law (BIL), enacted as the Infrastructure Investment and Jobs Act (IIJA) on November 15, 2021. The $5 billion National Electric Vehicle Infrastructure (NEVI) Formula Program was authorized under the Highway Infrastructure Program heading of the IIJA and provides dedicated funding to states to strategically deploy Electric Vehicle (EV) charging infrastructure. Maryland Department of Transportation (MDOT) and the Maryland Energy Administration (MEA) are working collaboratively to distribute the apportioned $63 million to Maryland between federal fiscal years 2022-2026. Maryland published their NEVI plan on July 15, 2022. The funds may be used for the acquisition and installation of EV charging infrastructure, operation and maintenance of EV charging infrastructure, and data sharing about EV charging infrastructure to ensure the long-term success of investments made under the program.

Dray Truck Program

An important program that MDOT, MDE, and the Maryland Port Administration work jointly on is the Dray Truck Replacement Program. Under this program, participating truck owners (either independent owner-operators or fleet owners) are provided with funding towards the purchase of a newer truck with an engine (MY 2013 or newer) that meets more stringent emission standards. The Port's dray truck replacement program has been in place for several years and to date has replaced approximately 288 dray trucks. Funding for this program has largely been through EPA Diesel Emission Reduction Act grants, Congestion Mitigation and Air Quality program funds via the state and Volkswagen Settlement funding. To date, the Port Dray Truck Program has received approximately $11.84 million in funding.

In 2021, through the work of this partnership, the Port received approximately $1.84 million dollars in EPA funding under its regional DERA Program. This funding will go toward the replacement of 3 older diesel-powered dray trucks with new electric battery-powered dray trucks. This will be one of the first electric dray truck projects on the east coast. In addition to the 3 electric dray trucks, the funding will be used to replace seven cargo handling units (four of which will be battery electric-powered) and one mobile welding unit.

Additional Activity

MTA is planning to add Battery (Zero-Emission) Electric Transit Buses to the MDOT MTA fleet before 2030. Planning is underway for deployment pilots, charging infrastructure, utility upgrades, facility upgrades.

Deployment of EV Charging Infrastructure at State-owned facilities supporting electrification of the State-owned Fleet vehicles is ongoing, with DGS as the lead agency. Deployments are occurring at various State-owned sites, including MDOT owned sites.

Deployment of publicly accessible EV Charging Infrastructure at public sites is ongoing by BGE and other Utility companies, under the terms of a Public Service Commission (PSC) Pilot Program in effect 2019-2023. MDOT-owned sites and other State-owned sites are among the public sites where these installations are occurring.

Planned Emission Reducing Projects

Project Type: *Bike/Ped/Greenway*

Implementing Agency	***Project Name***	***Project Description***
Anne Arundel County	Conway Road Improvements	This project will improve Conway Road from the Two Rivers subdivision to MD 3, and other area improvements as recommended in the Transportation Facilities Planning Study of Conway Road (H539620). This project is 74% eligible for use of impact fees in District 4.
Anne Arundel County	New Cut/Crain Hwy Sidewalk	This project will provide sidewalks along both sides of New Cut Road / MD 3 (Crain Highway) from Stevenson Road to Green Branch Lane. This project is 100% eligible for use of impact fees in District 1.
Anne Arundel County	Jumpers Hole Rd Improvements	This project will design, acquire rights of way, and construct improvements along Jumpers Hole Road from Benfield Boulevard to Earleigh Heights / Kinder Road / Kinder Park. Improvements include a shared use path along the west side, a sidewalk along the east side, and bike lanes along the road. This project is 100% eligible for use of impact fees in District 3.
Anne Arundel County	Odenton Grid Streets	This project is to design, acquire rights-of-way, and construct storm drain improvements, and to provide required plans for third party construction of road improvements, pedestrian and bicycle facilities, and streetscape improvements to grid streets within the Odenton Town Center area.
Anne Arundel County	Town Center to Reece Road	Recognized in the General Development Plan, this project creates a .23 mile link from Reece Road to Town Center Boulevard constructed through Fort Meade property, including improvements to Town Center Boulevard from Jacobs Road to Pine Cove Ave. This link is needed to complete a new road linking Fort Meade North at Reece Road with the MARC train station at Annapolis Road. The Seven Oaks community and communities to the north using Reece Road will have more direct access to the MARC station and the future Odenton Town Center development.
Anne Arundel County	USNA Bridge Area Bike Improvements	This project will provide improved bicycle facilities along MD 450 / MD 435 from the US Naval Academy Bridge to Rowe Boulevard, with a spur to the College Creek Bridge, as part of the County's regional trail system, including additional pedestrian improvements

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
Anne Arundel County	WB & A Trail	This project authorizes the right of way acquisition, design and construction of a paved multiuse trail primarily on the abandoned roadbed of the former W B & A Railroad south of Odenton. When complete, the project will link the South Shore Trail in Odenton with the Patuxent River and an existing rail trail in Prince George's County. The W B & A Trail will be a component of the East Coast Greenway and the American Discovery Trail.Construction of this recreational and transportation corridor will be done in phases: Phase I - Odenton Road to Strawberry Lake Way Phase II A - Strawberry Lake Way to Conway Road (bridges) Phase II B - Strawberry Lake Way to Conway Road (paving) Phase III - Conway Road to Patuxent River Phase IV - Loop from Strawberry Lake Way to South Shore Trail Phase V - Bridge over the Patuxent River
Anne Arundel County	Bluewater/Milestone SUPs	This project will acquire rights of way and construct Shared-Use Paths along Bluewater Boulevard from MD 175 to Portland Station Lane and along Milestone Parkway from MD 175 to Clark Road, including intersection improvements where necessary. The design was performed under project H508428. This project is 100% eligible for use of impact fees in District 4 and 6.
Carroll County	Little Pipe Creek Trail	This project consists of the development of a 10-foot wide, 4 mile macadam trail along MD Rte 75 corridor for walking, biking and in-line skating. From Union Bridge to New Windsor.
Carroll County	Sykesville to Piney Run Park Greenway	Construct a 4-mile greenway trail to link the Town of Sykesville to Piney Run Park. This project will interconnect parks and other high-user areas with surrounding residential and town development.
Carroll County	Westminster Community Trail - Phase III	Westminster Community Trail Phase III is a state project, with State Highway Administration providing 100% of construction costs, estimated at $1.1M. Pedestrian walkway/bike trail is to be macadam from Hahn Road along Route 27 south to the MD Route 140 overpass. Included is a pre-engineered bridge to cross an existing drainage area.

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
Carroll County	Leister Park Phase II	This project provides funding to establish an additional 4,700 linear foot walking trail at Leister Park, located on Black Rock Road in Hampstead. Project is contingent on State funding. Operating impacts include maintenance.
Carroll County	Washington Road (MD 32) Sidewalk	Length: Approx. 2,160 feet Limits: Kate Wagner Road to Washington Lane This project provides planned funding for construction of a sidewalk along Washington Road (MD 32) in Westminster. The project will provide a continuous sidewalk connection with the residential neighborhoods south of Westminster and the facilities of Westminster High School, Carroll Community College, Robert Moton Elementary School, and Carroll County YMCA.
Carroll County	Johnsville Road Sidewalk	This project provides funding for construction of a sidewalk along Johnsville Road in Freedom. The project will provide sidewalk connection to Eldersburg Elementary School, Liberty High School, residential neighborhoods, and the commercial corridor along MD 32 (Sykesville Road) via Bartholow Road.
City of Annapolis	S. Southwood Sidewalk and Stormwater Management	This project is for the installation of sidewalks, curbs, gutters, and roadway construction in the South Southwood area, an area that includes almost three miles of roads with and approximate 40 foot right-of-way. A feasibility study of the existing infrastructure will determine potential areas for connecting missing sidewalk sections and upgrading the existing sidewalks to be ADA compliant. The project includes evaluating stormwater management to address drainage complaints and to treat runoff from the additional impervious area due to the new sidewalks. It also includes treatment of the existing impervious area and evaluating the storm drain system to determine whether additional infrastructure is needed. The City will have to acquire right-of-way for installation of sidewalks, curb, gutter and roadway as necessary. This project assumes that the necessary rights-ofway for the installation of sidewalks, curbs, gutters, and roadways will be donated to the City and not purchased.

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
City of Annapolis	Hiker/ Biker Path - Rte. 450 to the Navy Memorial Stadium	This project is a partnership between MDOT/SHA, Anne Arundel County. The project consists of an improved bike and pedestrian connection from the MD 450 bridge to MD 435 (Taylor Avenue) and King George Street across College Creek. The project is in the design phase and being led by MDOT/SHA and Anne Arundel County which has a cost sharing agreement in place to fund the project through completion. The City is actively involved in advancing the best design for City residents and visitors and the Navy is supporting the project through land transfer and easements for expanded right of way.
Harford County	Trails & Linear Parks	This project proposes the acquisition, development, repair, and maintenance of hiker/biker trails, greenways, and linear parks. Trails may be constructed along existing roadways, in existing and proposed park sites and/or the Ma & Pa railroad track bed. These trails will be used for transportation, as well as, physical fitness facilities for walking, jogging, and bike riding. Environmental education programs will also be provided. Construction will occur as funds are available. Future projects are under consideration as funding allows. This project supports the goals and objectives of the 2018 Land Preservation, Parks and Recreation Plan and its Capital Improvement Program Recommendations. Prior Bonds reallocated from Emergency Operations Center capital project.
Howard County	Snowden River Parkway Widening Brokenland to Oakland Mills	A project to design and construct a widening of Snowden River Parkway (intermediate arterial) by adding a third lane and sidewalks from Broken Land Parkway to Oakland Mills Road.
Howard County	Routine Sidewalk and Walkway Extensions	A project to design and construct routine sidewalk and walkway extensions about 1,000 feet in length.
Howard County	Intersection Improvement Program	Project for the study, design and construction of geometric and pedestrian modifications to improve the safety or increase capacity at various intersections.

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
Howard County	Downtown Columbia Patuxent Branch Trail Extension - Phase I	Phase I of a project connecting Downtown Columbia at Lake Kittamaqundi and extending to the existing Patuxent Branch Trail. The complete project would provide a car-free connection to Downtown Columbia to Savage and will connect to the planned east-west Hospital to Blandair Park multi-use pathway.
Howard County	Oakland Mills Road Improvements	A project to improve Oakland Mills Road from Guilford Road northward to Carters Lane.The improvements would include road widening, sidewalk, curb and gutter and bicycle compatibility. At present this section of road is two lanes with no sidewalks and poor drainage. A traffic signal will be installed at the Oakland Mills & Guilford Road intersection.
Howard County	FY 2009 State Roads Sidewalk Retrofit Program	Design and construct improved pedestrian access along State roads.
Howard County	Clarksville - River Hill Streetscape Improvements	A project to plan, design and construct road and related improvements -- including streetscape, storm water management, pedestrian, bicycle, and public space enhancements -- in the Route 108 corridor.
Howard County	FY2014 Bicycle Plan Projects	A project for the implementation of the comprehensive Howard County Bicycle Master Plan.
Howard County	School Crosswalk Improvements	This project is for the installation or modification of crosswalks, raised crosswalks, chokers, sidewalks, raised shoulders, signs and/or other roadway retrofits to provide for an enhanced walking route for school children.
Howard County	FY 2007 Pedestrian Plan Projects	Ongoing evaluation, design and construction of pedestrian improvements listed in the Howard County Pedestrian Master Plan. The candidate project list is updated annually by the Dept. of Planning and Zoning in coordination with the Dept. of Public Works.
Howard County	School Route Pathways or Sidewalks	Design and construction of sidewalks/pathways to provide a safe walking route for school children.
Howard County	North Laurel Road Sidewalk	Design and construction of a sidewalk along the southwest side of North Laurel Road from Linville Ave. to US1.
Howard County	FY 2009 Pathway and Trail Rehab and Expansion	Rehabilitate and expand the existing Pathway System which currently extends from Savage Park through Columbia to Dorsey's Search.

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
Howard County	Sidewalk Repair Program	This project is for the repair of deteriorated sidewalks and driveway aprons that are in public
Howard County	Mission Road Sidewalk	A project to install sidewalk along parts of Mission Road. Area 1 will install sidewalk from Pleasant Chase Road to the Ridgley's Run Community Center. Area 2 will address Mission Road from Guildford Road to Concord Drive.

Project Type:	*Congestion Management*	
Implementing Agency	***Project Name***	***Project Description***
City of Annapolis	Wayfinding Signage	The project is a system of signage and wayfinding technologies to be implemented citywide. The signage will include gateway signs, pedestrian signs, information kiosks, vehicular directional and welcome signs, realtime parking information, and other wayfinding tools. This project will be coordinated with new parking and transportation initiatives and with improvements to the City Dock area. The Comprehensive Plan recommends the expansion of the existing wayfinding program.
City of Annapolis	Melvin Avenue Traffic Calming	This project is to install traffic calming at selected locations along Melvin Avenue in West Annapolis. The permanent traffic calming will be installed at the various locations piloted.
Howard County	Brighton Dam Road at Highland Road Roundabout	Project designing and constructing a roundabout at the intersection of Brighton Dam Road and Highland Road. The current intersection is a four-way stop.

Project Type:	*ITS*	
Implementing Agency	***Project Name***	***Project Description***
Howard County	Signalization Program	Project designing and constructing various traffic signals when the MUTCD Warrants are met; also includes the modification and modernization of existing traffic signals.

Project Type:	*Public Transit Improvement*	
Implementing Agency	***Project Name***	***Project Description***
Howard County	FY 2014 Bus Stop Improvements	A project to implement a series of systemic improvements to the Regional Transportation Agency (RTA) bus stops, as well as bus stops associated with the proposed extension of the Montgomery County FLASH service north to Howard County. These investments will help facilitate connections between the RTA and more regionally focused service to adjacent counties. These improvements may include the installation and refurbishment of bus shelters, concrete pads, bus stop signs, connecting sidewalks, curb cuts (consistent with ADA requirements), crosswalks, route map holders, trashcans and other improvements. The Office of Transportation, in conjunction with the Departments of Planning and Zoning and Public Works, will determine the location and extent of these improvements.
Howard County	FY 2021 Transit Center - Howard County	A project for the site selection, design and construction of a transit center.

Ongoing Emission Reducing Projects

Project Type:

Implementing Agency	*Project Name*	*Project Description*
Baltimore County	Windsor Mill Road	The Windsor Mill Road Project consists of Right of Way acquisitions, roadway widening, new curb and gutter, sidewalks, and additional work. The project would have three phases. Phase 1 - Windsor Mill Road to Featherbed Lane - Est Cost ($6.5M) Phase 2 - Windsor Mill Road to Windsor Mill Blvd - Est. Cost ($6.5M) Phase 3 - Windsor Mill Road to Rolling Road to Windsor Mill Blvd - Est Cost

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
Anne Arundel County	MD Rte 175 Sidewalks	This project funds a County contribution to the State project to design, acquire rights of way, and construct a sidewalk along the south side of MD Rte 175 from the Sappington Station Roundabout to MD Rte 170. Given the location and nature of this public improvement, available funds from the BRAC Revitalization and Incentive Zone will be the source of funding for this project.
Anne Arundel County	Safety Improvements on SHA Roads	This project provides for the design, rights of way acquisition, and construction of various highway safety improvements on State Highway Administration maintained roads. The improvements will be selected and prioritized in coordination with SHA district office staff.
Anne Arundel County	Brock Bridge/MD 198	This project will acquire right-of-way and relocate utilities to reconstruct the existing northbound lane along Brock Bridge Road at MD198 to create separate through lane and right turn lane, modify the signal, and improve drainage at the intersection with MD 198. This project also includes the construction of an ADA compliant sidewalk extending approx. 500 feet from 241 Brock Bridge Road connecting to the sidewalk being constructed as part of the above intersection improvements. This project is 100% eligible for use of impact fees in District 4.

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
Anne Arundel County	Ped Improvement - SHA	This project is to cover the County's share of costs for the State Highway Administration (SHA) to construct new sidewalk and reconstruct existing sidewalks along State Highways. This project would also fund the County's participation in Public Outreach in support of the SHA and acquisition of Rights of Way necessary for construction outside of existing SHA Right of Way. Sidewalk Projects are identified in the County's Priority Letters to the Maryland Department of Transportation (MDOT) and are located within the State Priority Funding Area. Sidewalks to be constructed shall be funded equally between State and the County, except under special circumstances, which the State will fund up to 100% of the costs.
Anne Arundel County	Severn-Harman Ped Net	This project will fund design, right-of-way acquisition and construction of pedestrian, bicycle, and transit facility improvements, creating a network as recommended in the Pedestrian and Bicycle Master Plan Update (2013) and Transit Development Plan connecting communities with public and major privately owned facilities and activity centers. Improvements include projects identified in the Master Plans and will provide sidewalks at missing segments, new sidewalk segments, crosswalks, pedestrian signals, and multipurpose trail segments creating a network supporting walking, biking, and transit needs of communities near Arundel Mills - MarylandLive!. Projects are consistent with recommendations in the adopted Small Area Plans, the prior Anne Arundel County Pedestrian and Bicycle Master Plan (2003), and the Transit Development Plan. Legislation established funding to reduce impacts on neighboring communities of MarylandLive!.

Project Type: *Bike/Ped/Greenway*		
Implementing Agency	***Project Name***	***Project Description***
Anne Arundel County	South Shore Trail	This project is authorized to acquire property, design and construct a paved multi-use trail primarily utilizing the abandoned road bed of the WB& A Railroad between Annapolis and Odenton. The trail will connect with the Colonial Annapolis Maritime Trail on the east end and the WB & A Trail on the west. The trail will be a component of the East Coast Greenway and the American Discovery Trail. Multi-phase construction will consist of: > Phase I: Waterbury to MD Rte 3 > Phase II: MD Rte 3 to Odenton > Phase III: Bestgate to Eisenhower Golf Course > Phase IV: Eisenhower Golf Course to Waterbury Road > Phase V: Bestgate Road to City of Annapolis > MD-3 Crossing
Anne Arundel County	School Sidewalks	Funds are needed to provide sidewalk improvements to accommodate walkers, and reduce bus requirement. This project will require funding beyond the program.
Anne Arundel County	Greenways, Parkland & Open Space	This project establishes a fund for County-wide Greenway, Parkland and Open Space Acquisitions and related expenses. This project will be used to acquire land, which satisfies one or more of the following objectives: addresses local or state Greenway objectives, protects sensitive natural resources, provides an addition to an existing park/trail and/or satisfies County park, recreation and preservation needs as identified in the Land Preservation, Park and Recreation Plan, the Greenway Master Plan, the General Development Plan and the Small Area Plans.

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
Anne Arundel County	Broadneck Peninsula Trail	This project authorizes the design, right of way acquisition and construction of a paved multiuse trail running from Sandy Point State Park to the B & A Trail. The trail Master Plan calls for the phasing of construction, as follows: Phase I A - Green Holly Drive to College Parkway East Phase I B - College Parkway East to Bay Head Park Phase II - Bay Dale Drive to Green Holly Drive Phase III - Peninsula Farm Road to Bay Dale Drive Phase IV - B&A Trail to Peninsula Farm Road Phase V - Bay Head Park to Sandy Point State Park and community connector trails. Design and construction for some phases will be funded in a future budget.
Anne Arundel County	Park & Trail Resurfacing	This multi-year, recurring project provides funds to resurface trails such as the B&A ,WB&A, South Shore, and Broadneck Peninsula trails. Work includes supporting slope stabilization, repairs to aggregate base, full depth asphalt patching and resurfacing, culvert repair / replacement as needed, and repair / replacement of fencing along the trail, as needed. This project also includes trails in the three regional parks including Quiet Waters Park, Downs Park, and Kinder Farm Park. Parking lots and roadways, including related infrastructure, as well as any other trails in other County parks, will continue to be funded in the existing multi-year, recurring project P479800 - Park Renovation, or as part of other one-time, stand-alone projects.
Anne Arundel County	Sidewalk/Bikeway Fund	This project includes design and construction of needed sidewalk, bikeway, and transit links along County roadways.

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
Anne Arundel County	Arundel Mills LDC Roads	The project funds all aspects of road and pedestrian rehabilitation, and safety improvements as identified by the Anne Arundel County Arundel Mills - MarylandLive! Local Development Council for the purpose of improving motorist and pedestrian facilities for communities near Arundel Mills - MarylandLive!.
Anne Arundel County	Waugh Chapel Road Improvements	This project will design, acquire rights of way, and construct improvements along Waugh Chapel Road between Maytime Avenue and MD 3, consisting of intersection upgrades, bicycle compatible shoulders, and a shared use path. This project is 100% eligible for use of impact fees in District 4.
Anne Arundel County	Trail Spurs/Connectors CW	This project will fund the design, right-of-way acquisition, and construction of trail spurs and connectors to the major trails traversing the County (i.e. Broadneck Peninsula Trail, South Shore Trail, and WB&A Trail).
Anne Arundel County	ADA ROW Compliance	This project is to design, acquire rights-of-way, and construct storm drain improvements, and to provide required plans for third party construction of road improvements, pedestrian and bicycle facilities, and streetscape improvements to grid streets within the Odenton Town Center area. Roadway improvements to Hale St. between Town Center Blvd. to Baldwin Rd., Nevada Ave. from Berger St. to Duckens St., Duckens St. from Baldwin Rd. to Town Center Blvd., Dare St. from MD175 to Hale St., Baldwin Rd. from Berger St. to Duckens St., and Berger St. from Baldwin Rd. to Nevada Ave. are included. This project is 100% Impact Fee eligible in District 4.

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
Anne Arundel County	Transportation Facilities Planning	This project will perform planning and conceptual design studies as recommended in the adopted General Development Plan, Small Area Plans, Transportation Functional Master Plan, and Transit Development Plan to relieve local transportation network congestion, increase capacity, increase pedestrian and bicycle safety, and to support land development.
Anne Arundel County	Duvall/Outing Access Improvements	This project provides improved pedestrian accessibility and mobility through pedestrian infrastructure upgrades along Outing Avenue from MD 177 to Duvall Highway and along Duvall Highway from Outing Avenue to MD 173 for better access to High Point Elementary School, George Fox Middle School, and Northeast High School. Improvements include sidewalk installation, ADA upgrades and crosswalk improvements while also addressing bus stop waiting areas, sight distance, storm drainage and traffic calming within areas of the pedestrian improvements. This project is 100% eligible for use of impact fees in District 2.
Anne Arundel County	MD 214 & Loch Haven Road	This project will design, acquire rights of way, and construct improvements consisting of an additional westbound travel lane along MD 214 from MD 468 to east of Loch Haven Road, including bicycle compatible shoulders and intersection improvements at Loch Haven Road. This project is 100% eligible for use of impact fees in District 5.
Anne Arundel County	Odenton Area Sidewalks	This project will design, acquire rights of way, and construct sidewalks on one side of Hammond Lane, Monie Road and Higgins Drive to provide a safe way for students from the community to get to Arundel Middle School.
Anne Arundel County	Jennifer Road Shared Use Path	This Project will install a shared use path along the north side of Jennifer Road from Pavilion Parkway to Admiral Drive. This project is 100% eligible for use of impact fees in District 3.

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
Anne Arundel County	Race Road - Jessup Village	This project will design, acquire rights of way, and construct improvements along MD 175 (Annapolis Road), Redbud Avenue, Champion Forest Avenue, Chestnut Avenue, Race Road, and National Business Parkway providing improved vehicular, bicycle, and pedestrian access to the new Jessup Elementary School and the corridor. This project is 65% Impact Fee eligible in districts 6 and 35% in District 4.
Anne Arundel County	Monterey Ave Sidewalk Improv	This project will provide sidewalk, curb and gutter, storm drain, and roadway improvements along Monterey Avenue between Odenton Road and June Drive.
Anne Arundel County	Highway Safety Improvement Program	This project provides for design and construction of various Highway Safety Improvements. These improvements are selected based on a combination of traffic accident statistics and road geometrics.
Anne Arundel County	Solley Road Shared Use Path	This project is for the addition of bicycle lanes, a shared use path, and sidewalk improvements along Solley Road from 300 feet south of Chestnut Springs Lane to MD 173. This project is 100% eligible for use of impact fees in District 2.
Baltimore County	Recreation Facility Renovations	Capital Improvements and/or Capital renovations to existing parks, counrts, and facilities including comfort stations, plantings, benches, pavilions, lighting, sidewalks, fountains, boat ramps, roadway, parking, and paving, etc.
Baltimore County	Bikeways & Pedestrian Access	Construction and repair of on-road bicycle and pedestrian facilities as part of the county Complete Street policy.
Baltimore County	Greenways/Stream Valleys/Trails Dvlp.	Acquisition and development of stream valley parks and greenways throughout the county including development of recreational trails .

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
Baltimore County	Sidewalk Ramp/ADA Upgrade Program	This project provides funds to construct sidewalk ramps to assist the handicapped.
Baltimore County	Pikesville Pedestrian Improvements	This project provides for the connectivity and walkability within the Pikesville Community.
Baltimore County	Curbs, Gutters, and Sidewalks	Replacement and repair of deteriorated curbs, gutters, and sidewalks as well as construction of new sidewalks where needed.
Carroll County	Ramp and Sidewalk Upgrades	This project provides ongoing funding to upgrade or replace non-compliant ramps and sidewalks for ADA accessibility. Non-compliant ramps and sidewalks are also addressed through the Pavement Management Program. This project allows for the acceleration of the replacement and upgrade process.
City of Annapolis	Trail Connections	This project consists of several components to create a more cohesive onstreet and off-street trail system in the City as recommended in the Annapolis Bicycle Master Plan (2011). This project improves the safety of bike travel and supports City policy to encourage alternative transportation options. The project may include planning, land acquisition, design, and construction. Project work will also include determination and initiation of possible land easements.
City of Annapolis	Russell Street	This project is to reconstruct Russell Street between Smithville Street and West Street (MD450) to improve pedestrian, vehicular, and bicycle access to the Bates Legacy and Community Center and the Spa Creek Trail. Improvements include a sidewalk on the west side of the street, a bike lane southbound on the street, and curb and gutter to define the street edge. This project implements a portion of the 2005 Bates Community Legacy Plan.

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
City of Annapolis	Cedar Park Sidewalks	This project will install a five foot wide concrete sidewalk along the southside of Cedar Park Road from Windell Avenue to the existing sidewalk near Halsey Road, including ADA ramps at each sidestreet crossing.
City of Annapolis	West East Express Bikeway	This project will complete the long envisioned West East Express (WEE) bikeway which will connect Downtown Annapolis to Parole along the former WB&A railroad corridor. The project has been recommended in numerous plans including the Annapolis Bicycle Master Plan (2011). This project consists of three distinct segments: Inner WEE which connects Calvert Street to Taylor Avenue; improvements to the existing Poplar Trail (Taylor Avenue to Admiral Drive); and the Outer WEE which connects Admiral Drive to MD 2 / Solomons Island Road along various public and private right-of-ways. The overall project will become the spine of the City's trail system and connect numerous diverse communities to important services, conveniences, destinations, jobs, and recreation. The project will also dramatically improve the safety of bike travel and support City policy to encourage alternative transportation options. The project includes planning, land acquisition, design, easements, and construction. FY2022 funds will be used for project design on each segment. Construction work will be done in phases by location and likely commence in FY2024.
City of Annapolis	General Sidewalks	This project is for City sidewalk repairs. The ongoing repair program is based on a comprehensive, citywide sidewalk condition assessment. Sidewalks are inspected for cracking, faulting, and scaling. Based upon this assessment, a list of priorities for repair and reconstruction is developed each year, taking into the sidewalk's condition and the importance of its location to citywide pedestrian traffic.

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
Harford County	Spesutia Road Reconstruction/Upgrade	This project consists of improving Spesutia Road between US40 and MD159 to address safety and traffic volume increases due to the continuous and ongoing development in the Perryman peninsula area. Approximately 4,000 LF of closed section road is proposed to be built. Spesutia Road functions as a collector road between two State roads. The improvements are proposed to include capacity upgrades at the two State road intersections as well as road widening to accommodate a bicycle shoulder/lane and sidewalks where necessary. This project is consistent with the Master Planning goal of maintaining a safe and adequate transportation system to serve existing and future populations.
Howard County	Roadside Improvement Program	This project is to repair, replace, or install sidewalks and ramps for handicapped areas, curbs, trees, and guardrails to comply with applicable Federal, State and County codes.
Howard County	Sanner Road Improvements	Project providing bicycle compatibility by widening the existing 10 feet lanes to 12 feet and filling in the missing shoulders along both sides of the road.

Project Type:	*Clean Technology*	
Implementing Agency	***Project Name***	***Project Description***
City of Annapolis	Landfill Gas Mitigation	Landfill gas (LFG) monitoring at the closed Annapolis Landfill has been ongoing for several years. Monitoring has confirmed that LFG migration has occurred along the northwestern property line and has been observed on the adjoining private property at explosive levels. No residential structures are at risk at the present time. In December 2017, the City and the Maryland Department of the Environment (MDE) finalized a settlement agreement that requires the City to collect and combust LFG that originates on the closed landfill property. The City is obligated to comply with specific time requirements or face legal sanctions. The design must provide for conversion of the existing passive LFG flare system to an active one and the installation of gas interceptor wells extending approximately 1200 lineal feet along the northwestern property line. It is estimated that the annual operational and maintenance costs will be approximately $30,000.
City of Annapolis	100% Electric Annapolis Mobility Plan	The Annapolis Mobility Plan (AMP) includes an all-electric transit system in downtown Annapolis and Eastport. Electric trolleys will transport riders from parking locations in the downtown area and Eastport to the Spa Creek waterfront. From there, an electric ferry will transport riders between City Dock and Eastport. This project includes the acquisition of an electric ferry boat, small electric cart vehicles, electric circulator buses, and all required charging and docking infrastructure. The first phase of the project, funded in FY2022, included the acquisition of an electric ferry boat and a comprehensive planning study, to include passenger demand analysis, parking and traffic study, infrastructure evaluation including dockage and electrical charging requirements, and operations and maintenance evaluation for the system. The proposed FY2023 phase includes electric vehicle acquisition. The FY2024 phase will include detailed design and construction of infrastructure improvements required for the electric ferry, circulators and trolleys as identified by the comprehensive planning study.

Project Type:	*Clean Technology*	
Implementing Agency	***Project Name***	***Project Description***
Harford County	Efficiency Capital Investment Projects	This project will identify and implement projects that will increase efficiency in county operations and the community through reducing costs and improving the County's environmental footprint to make facilities and the community safe, secure and functional.
Harford County	Fleet Replacement	Provide funds for the replacement of essential vehicles and equipment to enable using agencies to perform their critical jobs. We are behind in consistent rotation which has caused maintenance costs to rise, fuel inefficiency, and fleet availability to plummet. Units to be replaced are on average 10 years old with high mileage and have become unreliable
MDOT	Bus Replacement	Replaces buses in MDOT MTA's existing fleet. Procured vehicles will be clean, diesel buses equipped with air-conditioning, electronic destination signs, automatic vehicle locators, and wheelchair lifts. Delivery and inspection costs are included. 93 buses in total will be replaced.
MDOT	Battery Electric Bus Procurement	Procurement of 7 buses as a PILOT program in 2023 and an additional 70 buses into 2025.
MDOT	Battery Electric Bus Charging Infrastructure	Provides battery electric bus charging infrastructure for fleet to transition to zero emission buses.

Project Type: *Congestion Management*		
Implementing Agency	***Project Name***	***Project Description***
Anne Arundel County	Nghborhd Traf Con	Funds are requested to construct various traffic calming devices on neighborhood streets in order to control traffic speeds. Installation of these devices will be undertaken after discussion with the community.
Baltimore County	Miscellaneous Intersection Improvement	This project will increase capacity and safety along roads and major intersections throughout the county. Road improvements will relieve congested areas defined as deficient under county law. Priority is given to intersections rated as service level "E" or "F".
Baltimore County	Traffic Calming	This project will support a traffic calming program countywide in response to concerns from various communities.
City of Annapolis	Traffic Signal Rehabilitation	This project provides for the evaluation and prioritization of citywide traffic signal repairs to the existing signal heads, controllers, poles, and detection equipment with upgrades, including camera detection; actuated pedestrian signals (APS); and coordinated signal timing.
Harford County	Intersection Improvements	The purpose of this project is to improve the traffic capacity and safety at selected intersections throughout the County. Reduced levels of service on most roads is a direct result of limited capacity at the intersections. Therefore, widening or redesign of the intersection under this project can result in increased capacity and safety with decreased delay. Additionally, intersections with reduced sight distance may be corrected under this project. This project is consistent with the Master Planning goal of maintaining a safe and adequate transportation system to serve existing and future populations.

Project Type:	*Congestion Management*	
Implementing Agency	***Project Name***	***Project Description***
Harford County	Traffic Calming, Bicycle & Road Safety Improvements	To reduce vehicular speeds in communities, this project will construct various "traffic calming" devices aimed at speed reduction, community beautification, and increased safety. The project will be directed at communities with fairly high traffic volumes, 85th percentile speeds greater than 10 MPH over the speed limit, small average lot sizes, and a high percentage of cut-through traffic. With recent interest in Complete Streets and road safety in general for all users; funds are also being provided for bicycle and automobile related safety improvements.
Howard County	Residential Traffic Calming	Project to construct geometric roadway changes to reduce traffic speeding in residential areas.

Project Type:	*ITS*	
Implementing Agency	***Project Name***	***Project Description***
Anne Arundel County	New Traffic Signals	This project will fund the construction of new traffic control equipment on County roadways. This project also includes the construction of new Intelligent Transportation Systems (ITS) such as video detection and monitoring, automated count stations and communication systems to coordinate signals.
Baltimore County	GPS Routing for County Vehicles	The route optimizer will prescribe an efficient schedule that should increase productivity, while reducing fuel consumption, by minimizing travel time to various locations throughout the workday. Operations involving vehicles with multiple stops per day and those responding to unscheduled maintenance calls will benefit the most from this program.

Project Type:	*Land Use*	
Implementing Agency	***Project Name***	***Project Description***
Anne Arundel County	Agricultural Preservation Program	This project provides funding for the purchase of agricultural easements or fee simple interest in accordance with the County and State Agriculture and Woodland Preservation Programs. Easements, in the form of development rights, are purchased from qualified property owners of agricultural and woodland properties. Funds may also be used to match or augment other state or federal agricultural preservation programs such as Rural Legacy. Funds from this project will also be used to purchase relevant computer hardware and software that is deemed necessary to the program. Funds for this program are provided from county revenues as well as state agricultural land transfer tax receipts. Because the Maryland Department of Planning has certified the County's agricultural land preservation program, the county retains 75% of locally generated agricultural land transfer tax receipts, which are computed as a 5% state tax on the transfer of land being converted from agricultural to nonagricultural use.
Baltimore County	Rural Legacy	Protection of rural natural resources through the acquisition of development rights, easements or fee-simple interest in properties. Activities will be in conformance with approved rural legacy plans and the MD rural legacy program. Protection of resources by this program will be consistent with the adopted Baltimore County Master Plan. Financing for this project will be through grants from the MD Rural Legacy Program, County Bonds and/or general funds and private funds.
Baltimore County	Agriculture Preservation	Protection of Farmland through thr acquisition of development rights easements purchased through the MD Agricultural Land Preservation Program, The Baltimore County Local Program, and other programs. These programs are financed using the MD Agricultural Transfer Tax, County Bonds, General Funds, Federal Funds, State Funds, and private funds. Funds are also being set aside to purchase easement option on farmland imminently threatened by development.

Project Type:	*Land Use*	
Implementing Agency	***Project Name***	***Project Description***
Carroll County	Agricultural Land Preservation	This project provides ongoing funding for the Carroll County Agricultural Land Preservation program. The program provides an opportunity for landowners to make a long-term commitment to agriculture by offering financial incentives in exchange for property development rights. Preserving farmland with permanent easements helps to maintain agriculture as a viable industry and preserve the rural character of Carroll County. The County offers two payment options to the landowners: Installment Purchase Agreement (IPA) or Lump Sum. The IPA option pays the landowner for the easement over a 20-year period. The Lump Sum option pays for the easement at the time of settlement. The Maryland Agricultural Land Preservation Foundation (MALPF), a lump-sum payment program, is jointly funded by the State of Maryland and Carroll County. A portion of Property Tax revenue is dedicated to the Agricultural Land Preservation program, to be appropriated in the Capital Fund for easement purchases, and in the General Fund for interest payments to landowners in the Debt Service - Agricultural Preservation budget. The Capital Fund portion is capped at $2.5M ongoing. The appropriations are listed in the charts below. The Total Appropriation - IPA and Lump Sum are for easement purchases; operating impacts are interest payments appropriated to the General Fund; and the Total Appropriation - Ag Pres at the bottom of this page includes costs for both the Lump Sum and IPA options.

Project Type: *Public Transit Improvement*		
Implementing Agency	***Project Name***	***Project Description***
Anne Arundel County	Vehicle Replacement	This multi-year project is necessary to maintain and upgrade the school system's vehicle fleet.
Anne Arundel County	Transit Improvements	This project is for the installation of new transit improvements including concrete pads, shelters, benches, bike racks, bike lockers, bike racks on buses, etc.; as well as the maintenance and repair of existing transit improvements on County or State right-of-way for services operated by or in coordination with the Office of Transportation.
Anne Arundel County	School Bus Replacement	Purchase of replacement school buses.
City of Annapolis	Annapolis Transit Reduced Fare Program for Seniors, Disabled Persons and Students	Half-price one-way tickets, as well as day, weekly, and monthly passes are available for purchase by students, senior citizens, and the disabled, with proper identification.
MDOT	LOTS State of MD Guaranteed Ride Home - Baltimore Area	The Guaranteed Ride Home program we introduced in 2010 to eliminate the barrier to using alternate modes of transportation and commuters' fears of being stranded without transportation in the case of an emergency. Guaranteed Ride Home program for the Baltimore Region and St. Mary's County provides free return transportation by taxi, rental car, and public transit, in the event of an unexpected personal emergency or unscheduled overtime for individuals who commute to work by alternative modes of transportation at least two times per week.

Project Type:	*Rideshare Program*	
Implementing Agency	***Project Name***	***Project Description***
MDOT	LOTS State of MD Ridesharing Funds D&E	Ridesharing Program promotes the alternative to single occupancy vehicle usage including mass transit, carpools, and vanpools. Operating assistance under this grant consists of 100% Federal funds. Funding will be provided to the following locally operated transit systems: Anne Arundel County, Carroll County (service provided by the Baltimore Metropolitan Council), Frederick County, Harford County, Howard County, Montgomery County, Calvert County, Prince George's County, and the Tri-County Council for Southern Maryland.

Implemented Emission Reducing Projects

Project Type:

Implementing Agency	*Project Name*	*Project Description*
Howard County	SOUTHEAST INFRASTRUCTURE IMPROVEMENTS	A project to plan, design and construct a series of infrastructure improvements targeted within the southeast area of the US1 corridor. Projects will advance community, economic and environmental sustainability goals. Infrastructure includes storm water management, sidewalk and biking facilities, transit and community open space.

Project Type: *Bike/Ped/Greenway*

Implementing Agency	*Project Name*	*Project Description*
Anne Arundel County	Broadneck Peninsula Trail - Phase IA	This is part of a larger project to develop a multi-use trail to connect Bay Bridge and Sandy Point State Park with B&A Trail. Phase IA goes from Green Holly to Old Cape St. Claire.
Anne Arundel County	Ridge/Teague Rds RTL	This project will provide for increased capacity and operational efficiency along Ridge Road at its intersection with Teague Road. This project will also complete sidewalk along Ridge Chapel Rd to Harmans Elementary Rd.
Anne Arundel County	WB&A - West County Trail - Phase III	Construct new paved, multi-use trail from Conway Road to Patuxent River.
Anne Arundel County	Cape St. Claire Rd. Widening	Design and construct widening of road between Woodland Circle and Hilltop Dr., and provide sidewalks.
Anne Arundel County	Broadneck Peninsula Trail - Phase II	This is part of a larger project to develop a multi-use trail to connect Sandy Point State Park with B&A Trail. Phase II goes from Bay Dale to Green Holly.
Anne Arundel County	Pasadena Road Improvements	Addess impacts of East-West Boulevard traffic on Pasadena Road. This project will include sidewalks on the south side of the road, two median islands with associated road widening, a raised intersection at Penny Lane, and the relocation of the intersection at Spruce Lane to improve sight distance.
Anne Arundel County	AACC B&A Connector	This project includes design, right-of-way acquisition and construction of a hiker / biker trail along Jones Station Road from the Anne Arundel Community College west entrance on College Parkway to the B&A Trail. A location study for a grade separated trail connection between College Parkway across MD 2 (Ritchie Highway) to the B&A Trail will also be performed.
Anne Arundel County	Tanyard Springs Ln Ext	This project is to add shoulders and sidewalks along approximately 1/4 mile of Tanyard Springs Lane, and improve the intersection at Solley Road. This project is 100% impact fee eligible in District 2.

Project Type: *Bike/Ped/Greenway*

Implementing Agency	*Project Name*	*Project Description*
Anne Arundel County	AACC B&A Connector	This project includes design, right-of-way acquisition and construction of a hiker / biker trail along Jones Station Road from the Anne Arundel Community College west entrance on College Parkway to the B&A Trail. A location study for a grade separated trail connection between College Parkway across MD 2 (Ritchie Highway) to the B&A Trail will also be performed.
Carroll County	MacBeth Trail Connection	Construction of an 850 linear foot asphalt trail between the eastern and western sections of MacBeth Way in Eldersburg. This trail project is a part of the larger overall Governor Brown Trail project that will connect Eldersburg with Sykesville and include connections to Springfield Hospital Center, the Warfield Business Complex, and Freedom Park.
Carroll County	Bennett Cerf Bridge Replacement	This project provides planned funding for the design and replacement of a pedestrian bridge located at Bennet Cerf Park in Westminster.
Carroll County	Krimgold Park Phase II	This project includes 25,000 square feet of park roads, 150 parking spaces and 0.8 miles of trails.
Carroll County	Westminster Veterans Memorial Park Phase I	This project provides funding for Westminster Veterans Memorial Park, a 32-acre parcel in the Westminster area. Included is a playground, pavilion, walking trail, and parking areas. Project is contingent on receiving State funding. Operating impacts will include maintenance.
Harford County	Bel Air Area Transportation Study	Project performing a traffic and safety analysis on MD 22, US 1 (Business) and MD 24 between MD 543 and Tollgate Road to the east/west and MacPhail Road to US 1 Bypass to the north/south. The study will include an existing conditions analysis, a no-build analysis, and a future conditions analysis based on several scenarios designated to address improved vehicular mobility and safety, improved transit, bicycle and pedestrian facilities along the corridors including the ability and benefits of providing dedicated bicycle lanes and sidewalks. The study will assess Complete Streets and include a roadway safety audit and an origin/destination report.
Harford County	Site and Parking Lot Improvements (Harford Comm. College)	Replacement, installation, and/or repair of campus parking lots, roadways, and sidewalks.

Project Type: *Bike/Ped/Greenway*

Implementing Agency	Project Name	Project Description
Harford County	Churchville Complex Development	This project proposes the further development of the Churchville Recreation Complex in accordance with the Master Plan. Improvements will include additional parking, athletic facilities and nature trails.
Harford County	Emily Bayliss Graham Park	This park will focus on passive park development for a site in Emmorton. The park will include the natural trails, picnic pavilions and opportunities for the public to learn about the history of the site and surrounding community. The initial step was the preparation of a site master plan and review of the existing structures. Additional environmental studies will be done to determine the trail placement so as to minimize habitat disturbance. Preservation of this tract will provide critically needed public open space. Additional residential growth is anticipated in the area and will generate demand for parks.
Howard County	Hunt Club Sidewalk	Construction of approximately 4,000 LF of sidewalk along Hunt Club Rd. from US 1 to Bauman Dr.
Howard County	St. John's Lane Sidewalk	Project to construct sidewalk and pathway improvements along St. Johns Lane to link Mt. Hebron High School to US 40.
Howard County	Tower Drive Drainage and Sidewalks	A project to design and construct improved drainage and sidewalks along Tower Drive.
Howard County	Howard County Bikeshare Program	This project is to launch the Howard County's Bikeshare Program. Phase I of this project is to add 7 stations in Columbia. Phase II of this project will be adding stations in Ellicott City.
Howard County	Port Capital Sidewalks	A project for the construction of approximately 1,200 LF of sidewalk along Port Capital Drive from US1 to New Colony Boulevard.
Howard County	Doncaster Drive Sidewalk	A project to construct approximately 1200 LF of sidewalk along Doncaster Drive from Roundhill Road to Hale Haven Road.
Howard County	FY 2017 Savage Area Complete Streets	The project includes complete street improvements in Savage, Maryland to enhance multimodal travel for pedestrians, bicyclists, transit, and automobiles.
Howard County	FY 2017 Savage Area Complete Streets	The project includes complete streets improvements in Savage, Maryland to enhance multimodal travel for pedestrians, bicyclists, transit, and automobiles.

Project Type:	*Bike/Ped/Greenway*	
Implementing Agency	***Project Name***	***Project Description***
Howard County	Community Renewal / Enhancements	A project to design and implement a series of pedestrian improvements, streetscape enhancements and repair or enhancement of public green spaces.
MDOT	Bike Racks on Weekday MARC Train	Bike racks will be added to the MARC train during weekday service. The MARC cars with the bike racks will be marked on the outside. Two bicycles would be able to be accommodated on these indicated MARC cars.

Project Type: *Clean Technology*

Implementing Agency	Project Name	Project Description
Howard County	Howard County Hybrid Buses	This includes 11 hybrid-electric replacement buses for the Howard Transit fleet. (Three included in another entry.)
Howard County	Howard County Electric Bus	Zero emission electrified bus transportation is coming to Howard County with the advent of fully electric buses powered by wireless charging technology.
MDOT	MTA Hybrid Buses - FY 2013	57 new hybrid buses were put into service in the MTA fleet in FY 2013.
MDOT	MTA Hybrid Buses - FY 2014	50 new hybrid buses were put into service in the MTA fleet in FY 2014.
MDOT	MTA Hybrid Buses - FY 2015	41 hybrid buses were put into service in the MTA fleet in FY 2015.
MDOT	Dray Truck Replacement Program - 2016	This program provides an incentive for drayage truck owners to replace their existing truck with a newer, lower polluting truck that meets more recent engine emission standards. An EPA grant of $870,000 was awarded to Maryland Environmental Service (MES) on behalf of MPA for up to $30,000 per truck. 2006 model year and older trucks will be replaced with dray trucks having 2010 or newer EPA certified engines.
MDOT	Dray Truck Replacement Program - 2017	This program provides an incentive for drayage truck owners to replace their existing truck with a newer, lower polluting truck that meets more recent engine emission standards. An EPA grant was awarded to Maryland Environmental Service (MES) on behalf of MPA for up to $30,000 per truck. Older trucks will be replaced with dray trucks having 2010 or newer EPA certified engines.
MDOT	MTA Buses - FY 16/17	172 clean diesel buses will be purchased in FY 16/17.
MDOT	MTA - FFY 19 Bus Replacements	For the procurement of 42 additional Clean Diesel buses as part of a 2-year procurement, for core bus service, replacing 2005 and 2003 models.

Project Type:	*Commute Alternatives Incentive*	
Implementing Agency	***Project Name***	***Project Description***
MDOT	MARC Halethorpe Station Improvements	Phase I of the project provided an additional 428 surface parking spaces at the Halethorpe MARC Station. Phase II includes installation of high level platforms, a pedestrian bridge, new shelters, lighting, landscaping and improved ADA access.
MDOT	Telework Partnership with Employers/ Telework Baltimore	Baltimore region program to market the development of teleworking programs to employers.

Project Type:	*Congestion Management*	
Implementing Agency	***Project Name***	***Project Description***
Harford County	Tollgate Road and Plumtree Road Roundabout	Construction of a roundabout at South Tollgate Rd and Plumtree Rd.

Project Type:	*ITS*	
Implementing Agency	***Project Name***	***Project Description***
MDOT	Signal Systemization - MD 151	Wise Avenue to Trappe Road

Project Type:	*Land Use*	
Implementing Agency	***Project Name***	***Project Description***
Baltimore County	Owings Mills Transit Center	Build a town center that includes a square, main street, road and path network, hotel, library, education center. (Funding for infrastructure and parking needs at the Owings Mills Transit Center.)

Project Type:	*Public Transit Improvement*	
Implementing Agency	***Project Name***	***Project Description***
Carroll County	Westminster Evening Demand Response Pilot	This was a temporary pilot project to extend demand response transit service in Carroll County to have evening hours, Monday through Friday (5 to 8 PM). The pilot started December 5, 2016 for 6 months. Rides were available within a 5-mile radius of the Westminster branch of the Carroll County Public Library. Rides were scheduled at least 24 hours ahead of time.
Howard County	Transit Operation Repair Facility	A project for site selection, acquisition, design and construction of a multi-jurisdictional transit facility.
MDOT	Bus Replacement	For the procurement of 31 of the total 172 Clean Diesel Buses for core bus service. Replaces buses in MDOT MTA's existing fleet. Procured vehicles will be clean, diesel buses equipped with air-conditioning, electronic destination signs, automatic vehicle locators, and wheelchair lifts. Delivery and inspection costs are included. For the procurement of 42 of the total 172 Clean Diesel Buses for core bus service.
MDOT	MD32 at Broken Land Pkwy West Lot (Park and Ride Lot Expansion)	Resulting improvements include the addition of 47 new spaces for users. Park and ride will have 319 spaces total after improvements.
MDOT	MD794 Wayson's Corner Park and Ride Improvements (CO)	Resulting improvements include new transit amenities including a bus shelter and pull out area that will provide better access to transit service and increase utilization of the pnr lot.
MDOT	Mobility Bus Replacement	Replaces buses in MDOT MTA's complementary paratransit (shared-ride) program MobilityLink. Procured vehicles will be clean, gas buses equipped with air-conditioning, automatic vehicle locators, and wheelchair lifts. Delivery and inspection costs are included. 100 vehicles will be replaced in total- 75 new large cutaway vans and 25 small vans.

Appendix J: MDOT Updated Revenue Projections – August 2022

Financially Constrained Long Range Plan

Year 2022 to 2050 Update

For The

Baltimore Metropolitan Area

Prepared by

Maryland Department of Transportation

August 2022

DOCUMENTATION OF ASSUMPTIONS

Date: August 2022

Subject: Methodology and Assumptions used to derive the 2022 – 2050 Constrained Long-range Plan (CLRP)

Total Program Revenues/Expenditures (operating and capital):

- FY 1981 to FY 2021 figures are actual expenditures from historical records. FY 2022 to FY 2027 are from the FY 2022-2027 Transportation Trust Fund (TTF) Financial Plan and the Final FY 2022-2027 Consolidated Transportation Plan (CTP).

- The federal funds received directly by the Washington Metropolitan Area Transit Authority (WMATA) are **not** included in this exercise.

- FY 2028 to FY 2050 projections of state funds use a historical annual average growth rate of 5.0%. Federal fund projections for the same period are based on an average growth rate of 3.0% for highway and 2.33% for transit program funds.

Operating Expenditures:

- FY 1981 to FY 2021 figures are actual expenditures from historical records. Expenditures for FY 2022 to FY 2027 are the operating budget projections contained in the FY 2022-2027 TTF Financial Plan. For the 2020 and prior CLRP updates, operating budget projections were taken from the financial plan published in January that supports the Final CTP. For the current 2022 CLRP update, operating budget projections were again based on the financial plan published in January that supports the Final CTP, with updates for actions taken during the legislative session.

- FY 2028 to FY 2050 projections are derived by inflating the previous year with an estimate for the percentage change in the Consumer Price Index for All Urban Consumers (CPI-U) plus 2%. CPI-U is a generally accepted measure of inflation. The projected annual change in index figures is based on information received from two economic forecasting firms. To account for the additional operating costs associated with new capital expansions, 2% is added to the forecasted rate.

- For the Purple Line Light Rail Transit project, the operating and maintenance portion of availability payments from the April 2022 project forecast were included as part of the operating budget projections.

Capital - System Preservation:

- Department records were used to determine the split between system preservation and expansion for FY 1981 to FY 2021. Amounts for FY 2022 to FY 2027 are from the Final FY 2022-2027 CTP.

- For the period FY 2028 – FY 2050, an annual growth rate of 2.5% is assumed for systems preservation projects, not to exceed 70% of the total program.

- For the period FY 2028 to FY 2050, it is assumed that the State's General Fund will fund Maryland's share of the new dedicated capital funding for WMATA ($167 million annually).

Capital - Expansion:

- Expenditures for capital expansion were derived by subtracting both operating and system 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 (State Highway Administration (SHA)) and transit (Maryland Transit Administration (MTA) and WMATA) costs. Non-surface included expenses for the Maryland Port Administration, Maryland Aviation Administration, Motor Vehicle Administration and the Secretary's Office.

- 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 location specific SHA and MTA project expenditures in the region (Anne Arundel, Baltimore, Carroll, Harford, and Howard County projects); one-half of the areawide MTA projects that service the DC/Baltimore Region and approximately 35% (historical average) of SHA area-wide project expenditures.

- 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	1,948	1,217	3,165	1,341	4,506
2018	2,048	1,147	3,195	1,264	4,459
2019	2,128	1,117	3,245	1,196	4,441
2020	2,173	1,593	3,766	1,200	4,966
2021	2,179	1,389	3,568	985	4,553
2022	2,208	1,931	4,139	1,147	5,286
2023	2,396	2,045	4,441	631	5,072
2024	2,418	1,907	4,325	515	4,840
2025	2,469	1,775	4,244	447	4,691
2026	2,518	1,816	4,334	455	4,789
2027	2,609	1,887	4,496	465	4,962
2028	2,734	1,637	4,371	701	5,072
2029	2,849	1,715	4,564	735	5,299
2030	2,968	1,799	4,767	771	5,538
2031	3,091	1,890	4,981	810	5,791
2032	3,217	1,985	5,202	851	6,053
2033	3,350	2,084	5,434	893	6,327
2034	3,488	2,188	5,676	938	6,614
2035	3,633	2,297	5,930	985	6,915
2036	3,787	2,357	6,144	1,087	7,231
2037	3,946	2,416	6,362	1,200	7,562
2038	4,112	2,476	6,588	1,320	7,908
2039	4,286	2,538	6,824	1,446	8,270
2040	4,467	2,601	7,068	1,581	8,649
2041	4,656	2,666	7,322	1,725	9,047
2042	4,853	2,733	7,586	1,877	9,463
2043	5,060	2,801	7,861	2,039	9,900
2044	5,275	2,871	8,146	2,212	10,358
2045	5,500	2,943	8,443	2,392	10,835
2046	5,735	3,017	8,752	2,585	11,337
2047	5,981	3,092	9,073	2,789	11,862
2048	6,238	3,169	9,407	3,006	12,413
2049	6,504	3,249	9,753	3,237	12,990
2050	6,783	3,330	10,113	3,483	13,596

BALTIMORE METROPOLITAN AREA
Percentage of Capital Expansion

Surface Enhancement % of Maryland Enhancement:	
1981 - 2021	84.9%

Baltimore Enhancement % of Surface Enhancement:	
1981 - 2021	36.1%

Fiscal Year	Statewide Expansion Funds	Surface Percentage	Private Funds	Total Surface Available	Baltimore Percentage	Total Balto. Expansion Funds
2020	1,200					161
2021	985					121
2022	1,147					152
2023	631					215
2024	515					199
2025	447					146
2026	455					244
2027	465					103
2028	701	595	24	619	224	224
2029	735	624	24	648	234	234
2030	771	655	24	679	245	245
2031	810	688	25	713	257	257
2032	851	722	25	747	270	270
2033	893	758	25	783	283	283
2034	938	796	25	821	297	297
2035	985	836	25	861	311	311
2036	1,087	923	25	948	342	342
2037	1,200	1,019	25	1,044	377	377
2038	1,320	1,121	25	1,146	414	414
2039	1,446	1,228	25	1,253	452	452
2040	1,581	1,342	25	1,367	494	494
2041	1,725	1,464	25	1,489	538	538
2042	1,877	1,593	25	1,618	585	585
2043	2,039	1,731	25	1,756	634	634
2044	2,212	1,878	25	1,903	687	687
2045	2,392	2,031	25	2,056	742	742
2046	2,585	2,194	25	2,219	802	802
2047	2,789	2,368	25	2,393	864	864
2048	3,006	2,552	25	2,577	931	931
2049	3,237	2,748	25	2,773	1,002	1,002
2050	3,483	2,957	25	2,982	1,077	1,077
Total '28-'50	38,663	32,821	572	33,393	12,062	12,062
Total '20-'50	44,509					13,403

MDOT - Office of Finance
August 2022