



# Overview of *Resilience 2050*, 2024-2027 Transportation Improvement Program and the Associated Air Quality Conformity Determination

Resolution #24-1

July 5, 2023



# Resilience 2050: 2-Year Process

- What are our guiding principles?
  - Goals and Strategies: [BRTB Res #22-6](#) (Nov 2021)
- How should we prioritize investments?
  - Project Scoring Methodology: [BRTB Res #22-7](#) (Nov 2021)
- What might the future bring?
  - Round 10 Socioeconomic Forecasts of Population, Households and Employment: [BRTB Res #23-1](#) (July 2022)
  - Chapters on regional growth, forecasting and demographic trends ([Chapter 2](#)) and future trends ([Chapter 3](#))
- How much funding can we expect?
  - Financial Forecast: [BRTB Res #23-13](#) (January 2023)

**Resilience 2050**  
Adapting to the Challenges of Tomorrow

## Regional Transportation Goals

The BRTB developed the following set of guiding principles for the projects and programs considered in Resilience 2050.

### Goals That Address the Basic Functions of Transportation

-  **Improve Accessibility**  
Identify and support multimodal options that promote equity, are resilient and sustainable and enable all individuals to reach their destinations safely and seamlessly.
-  **Increase Mobility**  
Help people and freight to move reliably, equitably, efficiently and seamlessly.

### Goals That Address the Conditions or Effects of Transportation

-  **Improve System Safety**  
Reduce the number of crashes, injuries and fatalities experienced by all users of the transportation system toward meeting Zero Deaths Maryland.
-  **Improve and Maintain the Existing Infrastructure**  
Improve the conditions of existing transportation facilities; systematically maintain and replace transportation assets as needed.
-  **Implement Environmentally Responsible Transportation Solutions**  
Pass on to future generations the healthiest natural and human environment possible.
-  **Improve System Security**  
Provide a secure traveling environment for everyone; improve the region's ability to respond to natural and human-caused disasters.
-  **Promote Prosperity and Economic Opportunity**  
Support the vitality of communities and businesses, opportunities for workers and the movement of goods and services within and through the region.

### Goals That Address the Transportation Decision-Making Process

-  **Foster Participation and Cooperation Among All Stakeholders**  
Enable all interested and affected parties to participate and cooperate to find workable solutions.
-  **Promote Informed Decision-Making**  
Ensure that adopted transportation policies and performance measures guide the regional decision-making process.

 **BALTIMORE METROPOLITAN COUNCIL**

# Resilience 2050: 2-Year Process

- **How will we measure progress?**
  - Series of resolutions adopting updated federally mandated performance targets throughout
  - Detailed further in [Chapter 5](#)
- **Project Submittals and Scoring; Cost Estimation**
  - April through October 2022
- **Draft Preferred Alternative**
  - Presented to TC in January 2023 with “fiscal constraint line”
  - 56 of 62 roadway projects; all 36 transit projects
- **Analyses: Conformity, Travel Demand, Environmental Justice, Environmental Mitigation, Strategic Highway Network**
  - February through April 2023
- **Public Involvement Process**
  - Informal comment period in CY 2022 and early CY 2023 for White papers
  - Formal public comment period May 17 – June 20, 2023

# Resilience 2050: What are we doing better?

- Improvements to Project Scoring Methodology
  - Rebalance weighting to double points allocated to safety
  - Add transit scoring where previously absent: complete streets, safety and security
  - Clarify definitions and make scores less subjective
  - Transition to outcomes based scoring – how does the project contribute to creating a complete system
  - Clarify/Integrate impacts to EJ populations into scoring
  - Increase max technical score for transit projects to 55, with highway max remaining at 50

Table 6 - Technical Scoring Goals, Criteria, and Points

Goal/Criteria	Technical Scoring Points: Transit Projects	Technical Scoring Points: Roadway Projects
Safety*	10	10
Accessibility – Complete Streets*	5	5
Accessibility – Access to Jobs*	10	5
Mobility	10	10
Environmental – Effects on ecologically sensitive lands and culturally significant resources*	5	5
Environmental – Potential for Greenhouse Gas Emissions Reductions	5	5
Security*	5	5
Economic Prosperity	5	5
<b>Total Technical Points</b>	<b>55</b>	<b>50</b>

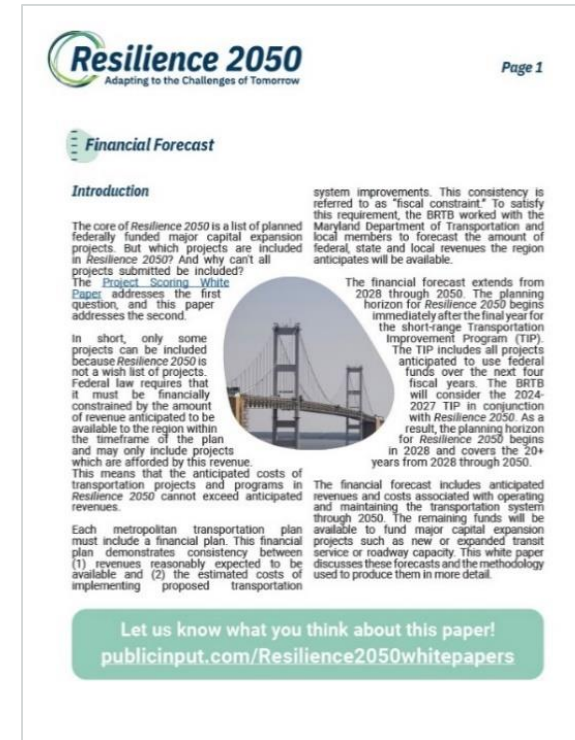
\*includes points related to project impacts on EJ populations

# Resilience 2050: What are we doing better?

- White Paper Series on LRTP Topics: Monthly releases from February 2022 – February 2023

- Project Scoring
- Traffic Safety
- Freight Movement
- Transit
- Air Quality
- Emerging Technologies
- Active Transportation
- Socioeconomic Forecasting
- Demographic Trends
- Financial Forecast
- Climate Change and Resilience

- Informed improved demographic trends (Chapter 2) and factors and trends (Chapter 3) discussions in *Resilience 2050*





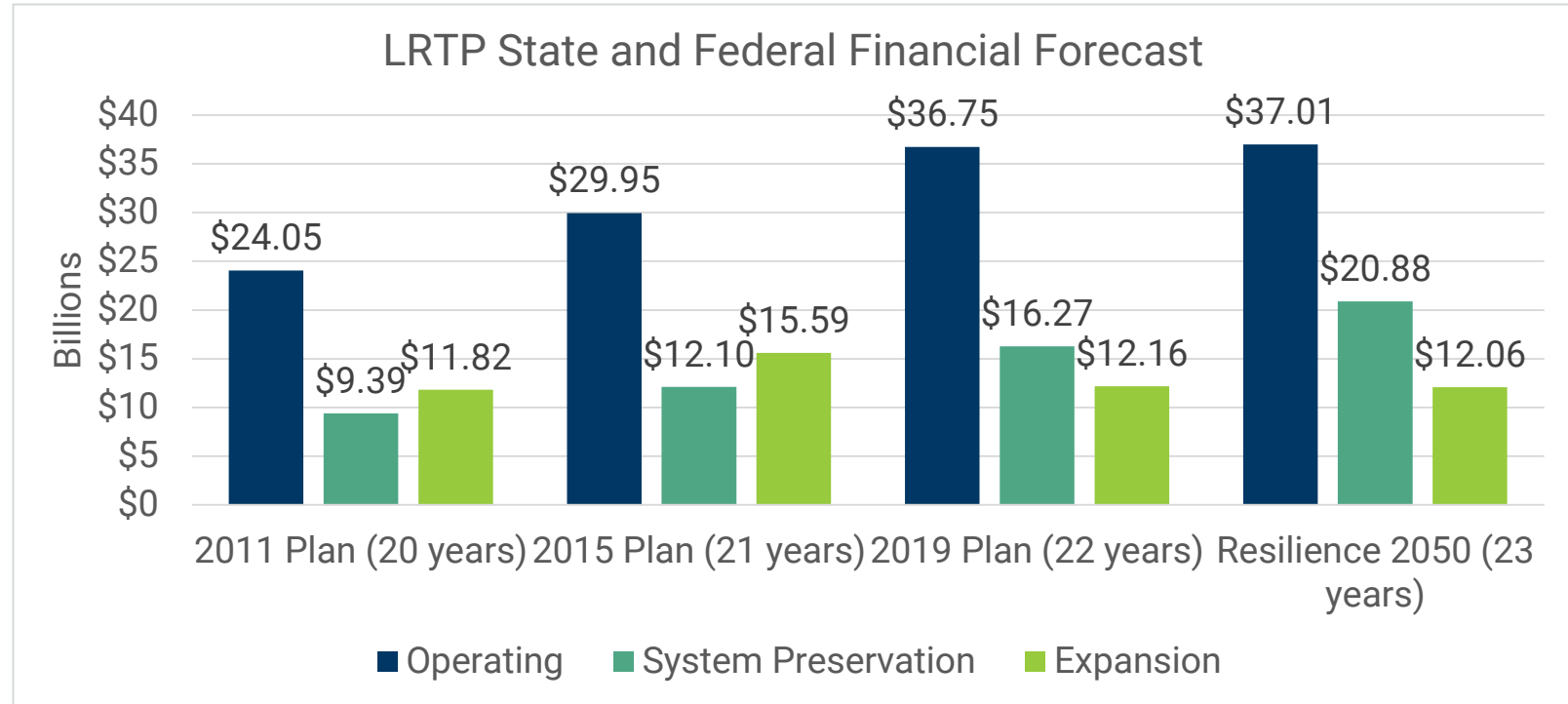
# Resilience 2050: What are we doing better?

- **Addition of consistent methodology for forecasting local funding:**
  - Local funding projection tool completed with consultant and local jurisdiction staff in 2022
  - Tool can be replicated and improved for future L RTPs:

Time Period	Operating (millions)	System Preservation (millions)	Expansion (millions)	Total (millions)
2028-2032	\$2,829	\$1,223	\$185	\$4,237
2033-2037	\$3,193	\$1,304	\$199	\$4,696
2038-2042	\$3,614	\$1,397	\$215	\$5,226
2043-2047	\$4,104	\$1,506	\$233	\$5,843
2048-2050	\$2,731	\$963	\$150	\$3,844
<b>Total 2028-2050</b>	<b>\$16,471</b>	<b>\$6,393</b>	<b>\$982</b>	<b>\$23,846</b>

# Resilience 2050: Financial Trends to Consider...

- **Resilience 2050 state and federal forecast (23 years)**
  - \$37.01 billion operating
  - \$20.88 billion system preservation
  - \$12.06 billion expansion (most projects compete for these funds)



- **Increases for System Preservation; Decreases for Expansion**
  - System preservation **increases** from 21% in 2011 LRTP to 30% in *Resilience 2050*
  - Expansion **decreases** from 26% in 2011 plan 17% in *Resilience 2050*

# ***Resilience 2050: Changes***

- **Changes: Draft to Final**
  - Minor corrections for typos and inconsistencies
  - Full layout file of Appendix C now complete (content had been available online in a basic word)
  - Will add full scope of policy and technical scores to Appendix B based on public comment (previously showed combined policy and technical scores)
  - Will add a description of Urban Air Mobility and electric vertical takeoff and landing air taxis per guidance by FAA for MPOs. To be included in Chapter 3 Factors and Trends



# ***Resilience 2050: Public Comment Main Themes***

- **100+ Comments from 173 participants**
- **Main themes from comments:**
  - Negative sentiment towards scale of roadway expansion in the preferred alternative, both number of projects and amount of expenditures (56 projects; \$6.883 billion)
  - Concerned with implications of roadway expenditures for:
    - climate change
    - land use and sprawl
    - air quality and public health
  - Positive sentiment toward more transit expansion and increased transit reliability
  - Positive sentiment towards bicycle and pedestrian infrastructure

# Resilience 2050: Public Comment by topic

- 50 Comments expressing negative sentiment toward **Roadway Expansion** and/or positive sentiment towards **Transit and Active Transportation** modes
- 24 Comments on **Transit** issues
- 9 Comments on improving **Active Transportation**
- 8 Comments on **Air Quality** issues
- 8 Comments on **Specific Projects**
- 5 Comments on **Induced Demand**
- 3 Comments regarding **Emerging Technologies**
- 2 **Coalition Comments** on a range of issues
- 5 Comments on **other issues**



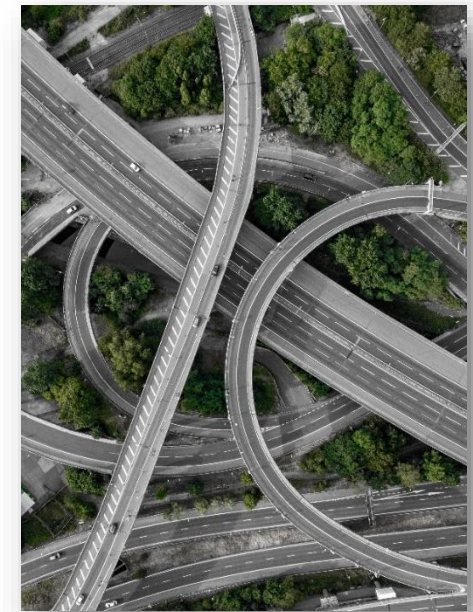
# ***Resilience 2050: Looking Forward***

- **Next Steps**

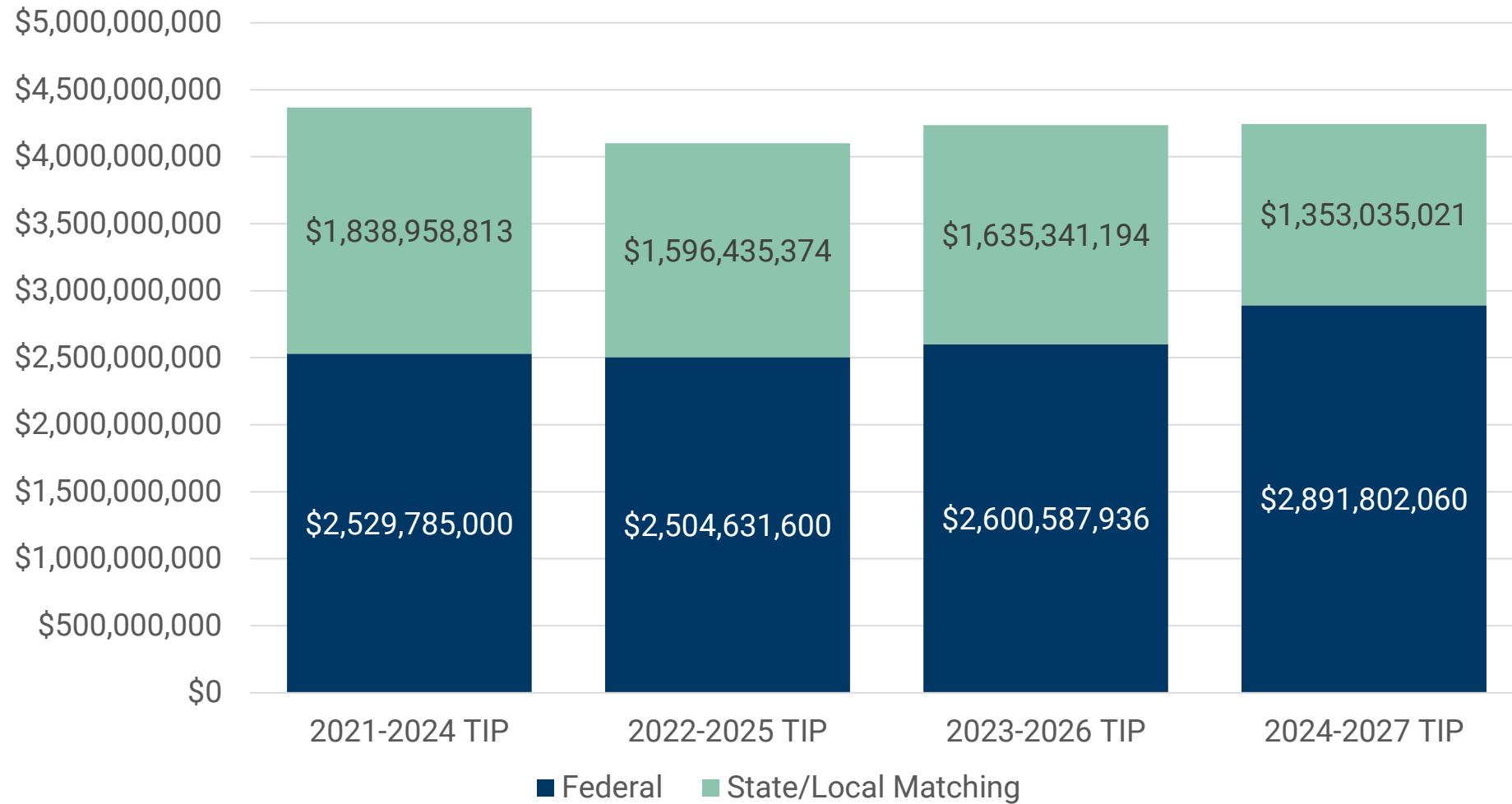
- Today: Consider recommendation of adoption of final LRTP, pending completion of the response to comments
- Next month(s): Transmit to FHWA, FTA and U.S. EPA for review and approval by federal agencies
- Next year(s): Follow the plan: from guiding principles to specific projects
- However..."Nothing is written..."

# Overview of the 2024-2027 TIP

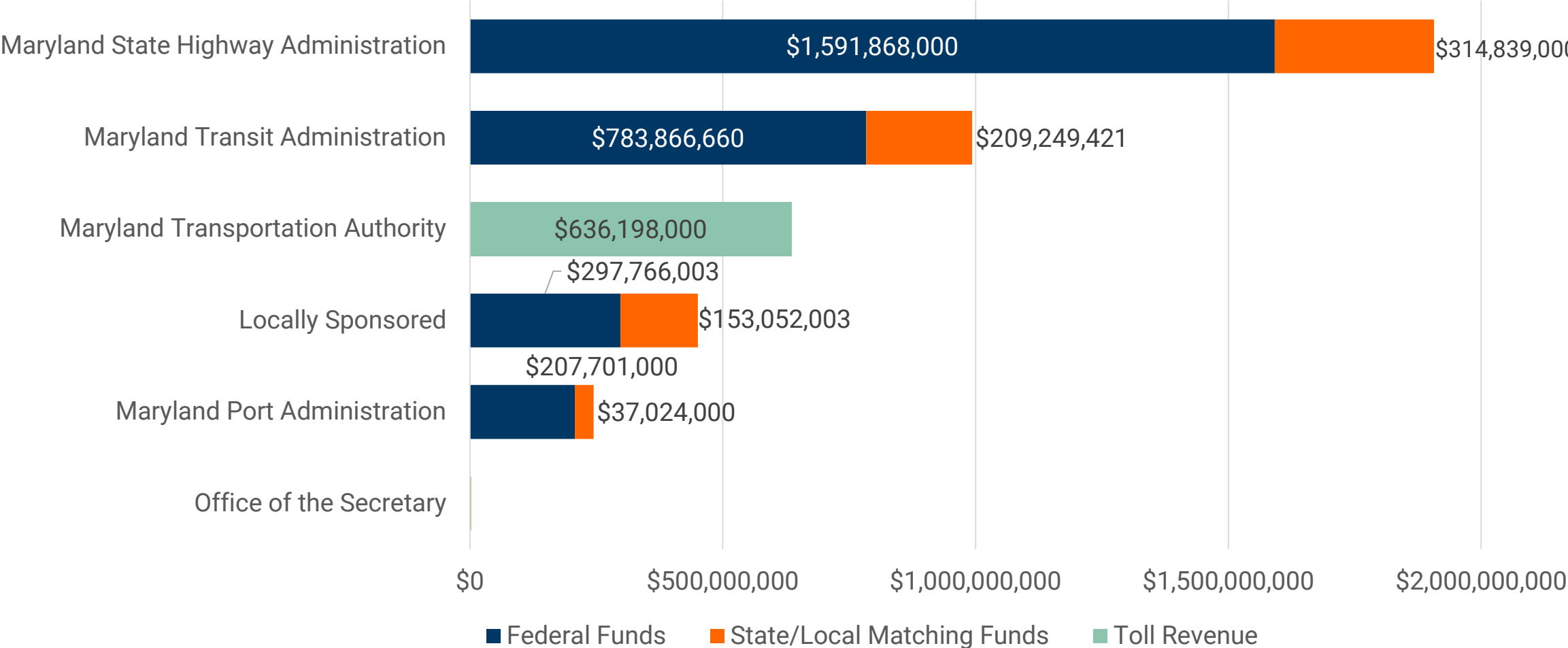
- **143 federally-funded and regionally significant projects**
  - 13 are new projects
- **\$4.24 billion in proposed federal, state, local, and toll funds**
  - \$2.89 billion federal; \$1.35 billion state/local
  - highway, transit, bicycle, and pedestrian projects
  - maintaining, operating and expanding the transportation system
- **Projects support long-range transportation goals**
  - for example: safety, prosperity and economic opportunities and environmental responsibilities
- **Funding limited**
  - Programmed funds cannot exceed what is reasonably expected to be available from local, state and federal sources



# Funding in the 2024-2027 TIP

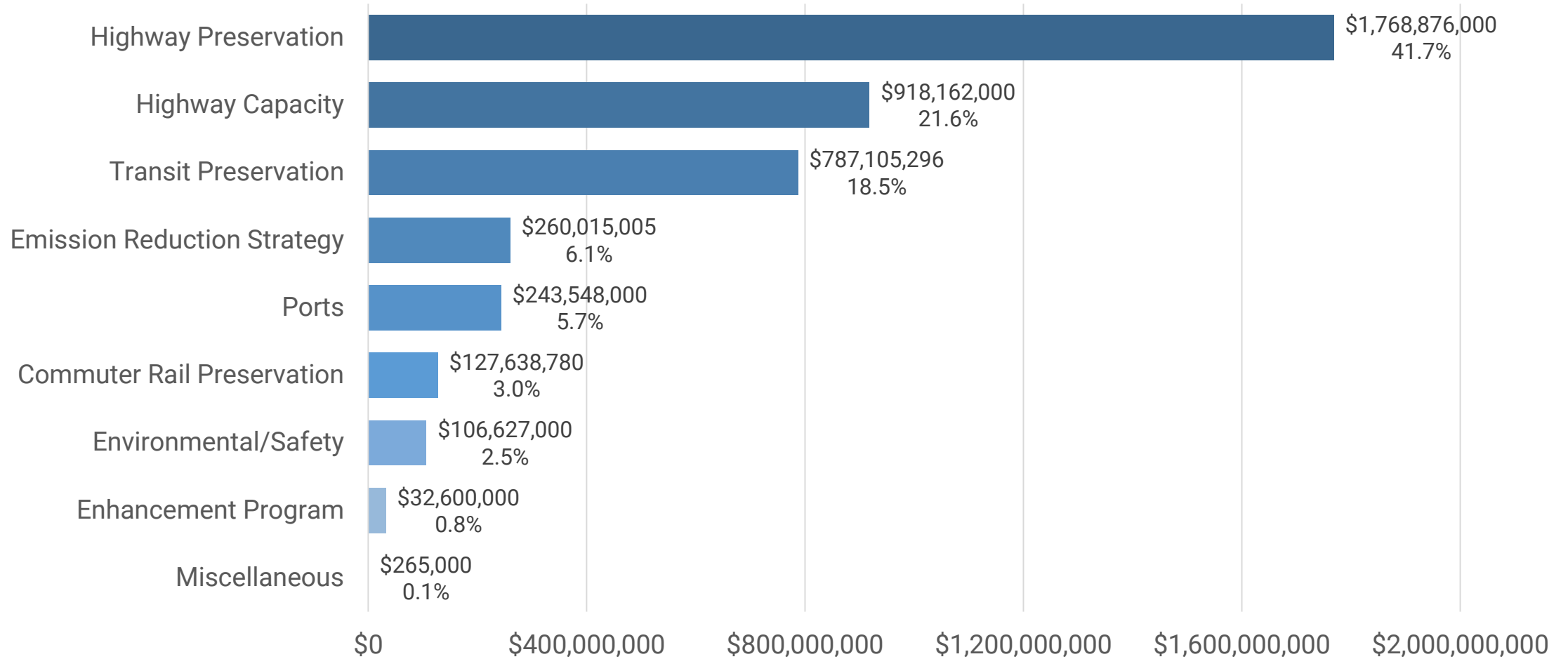


# Funding in the 2024-2027 TIP

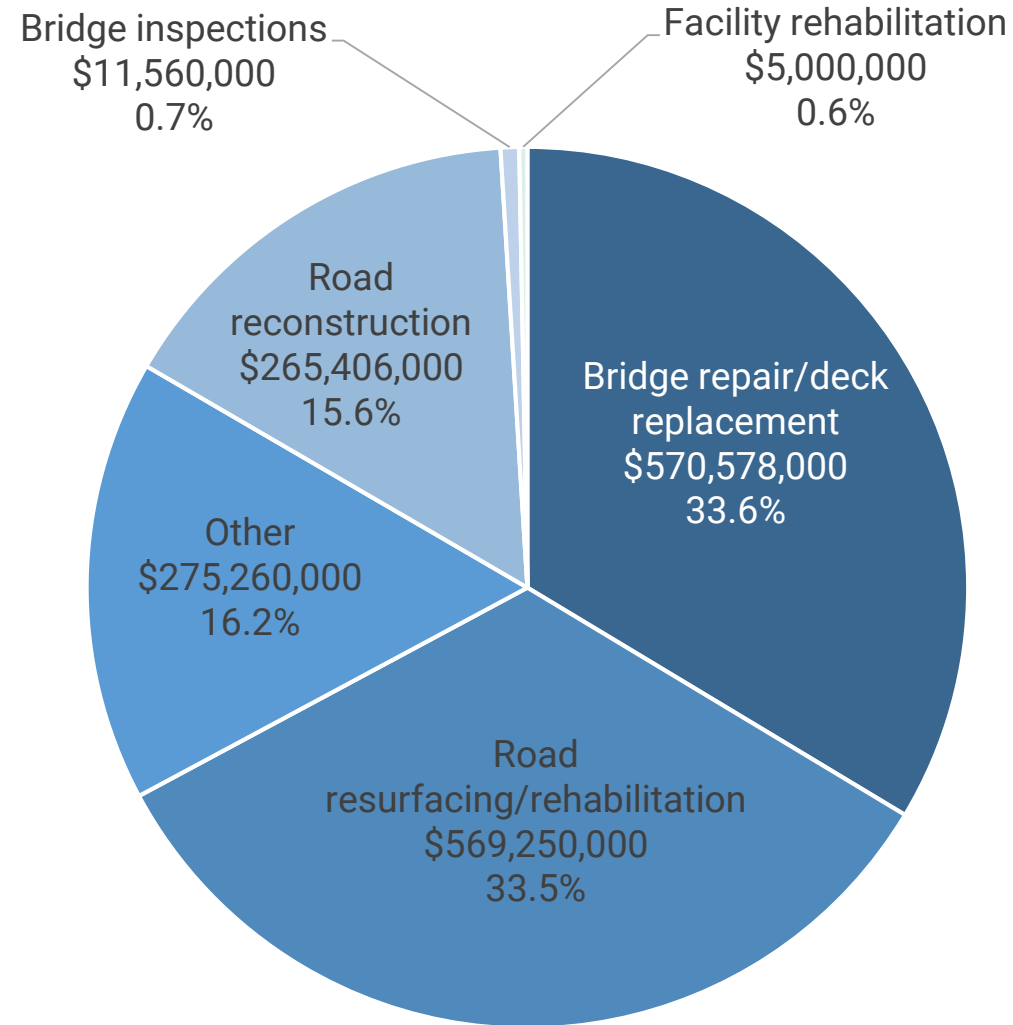




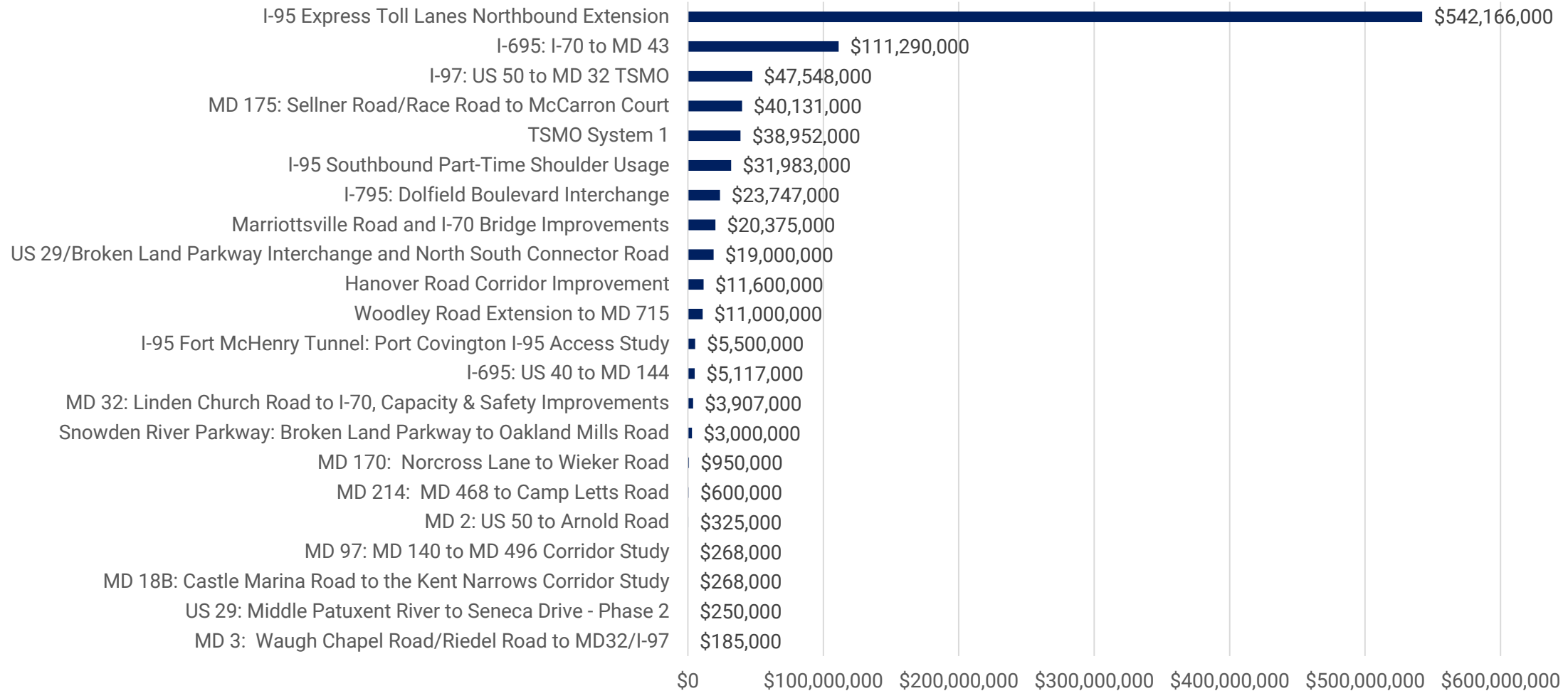
# Funding by Category in the 2024-2027 TIP



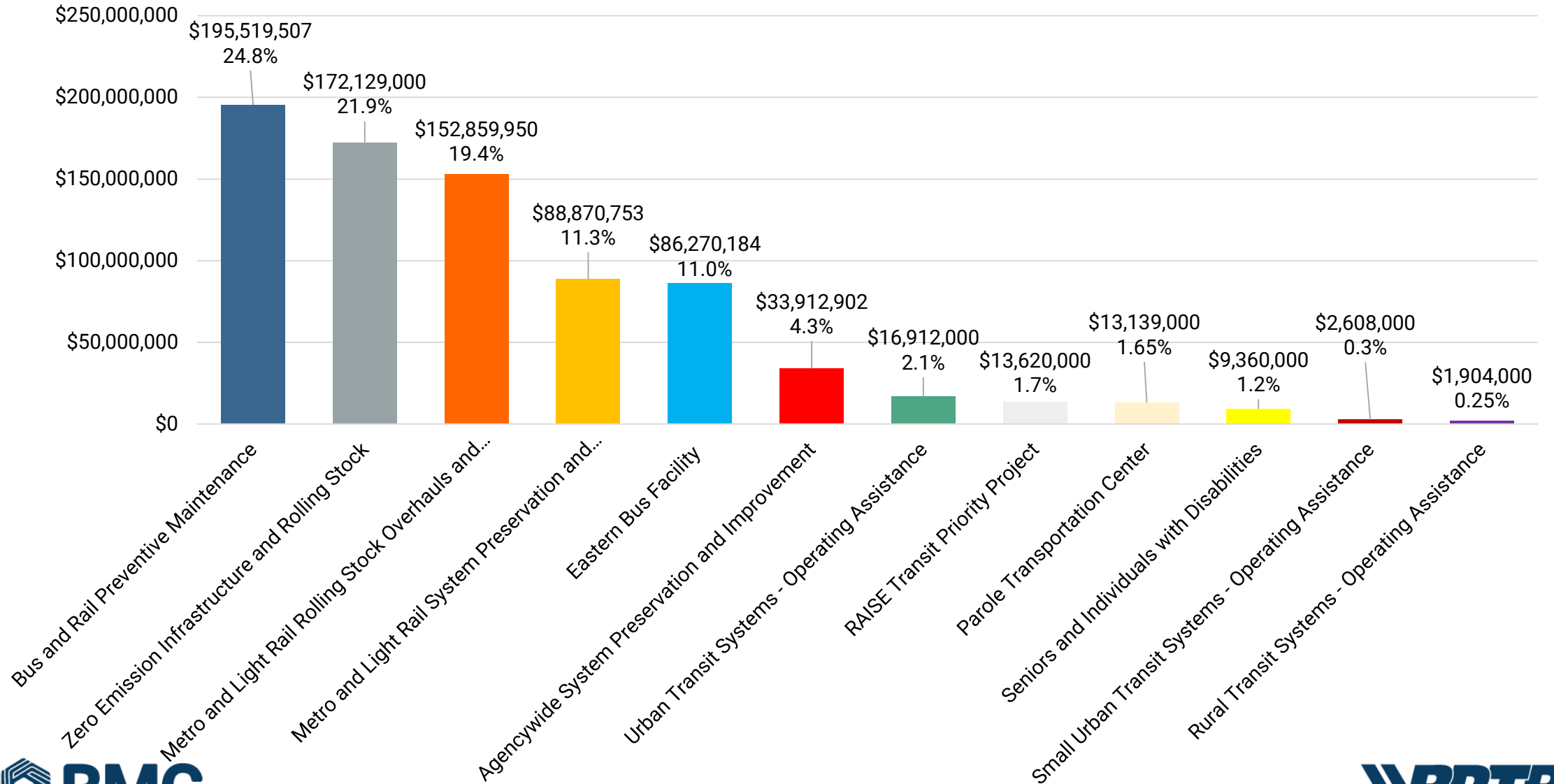
# Breakdown of Highway Preservation Funds



# Breakdown of Highway Capacity Funds



# Breakdown of Transit Preservation Funds



# 2024-2027 TIP Public Involvement and MDOT MTA Program of Projects

FTA Fund Source	FY2024-FY2027 Federal	FY2024-FY2027 Matching	FY2024-FY2027 Total
5307C: Capital requests in urbanized areas including bus purchases, replacements and preventive maintenance	\$319,499,553	\$77,509,139	\$397,008,692
5307O: Operating assistance in urbanized areas	\$9,760,000	\$14,611,000	\$24,371,000
5310: Mobility of seniors and individuals with disabilities	\$6,740,000	\$2,620,000	\$9,360,000
5311O: Operating assistance in nonurbanized areas	\$952,000	\$952,000	\$1,904,000
5337: State of Good Repair funds including preventive maintenance and MARC improvements	\$225,384,150	\$58,845,287	\$284,229,437
5339F: Bus and Bus Facilities Formula funds	\$6,180,126	\$1,544,032	\$7,724,158
CMAQ: Congestion Mitigation and Air Quality	\$137,324,831	\$44,688,958	\$182,013,789
<b>Totals</b>	<b>\$705,840,660</b>	<b>\$200,770,416</b>	<b>\$906,611,076</b>

# Performance-Based Planning and Programming in the TIP

- Established in MAP-21; Strengthened in FAST Act
- Intent: Gauge progress relative to regionally established goals and strategies, guide future system preservation activities
- **Federal Requirements: MPOs must adopt a series of 25 performance measures and targets**
  - Measures and targets cover transit asset management, transit safety, highway safety, traffic congestion, on-road mobile source emissions, pavement and bridge condition, and travel time reliability
  - Performance measure: Specific metrics the region can use to assess progress towards a goal (e.g. Decrease number of highway fatalities)
  - Performance target: Specific levels to be reached (e.g. Decrease highway fatalities to 121 by 2030)
  - BRTB coordinated with the state on target selection

Table 8. 2024-2027 TIP Projects Related to Transit Asset Management

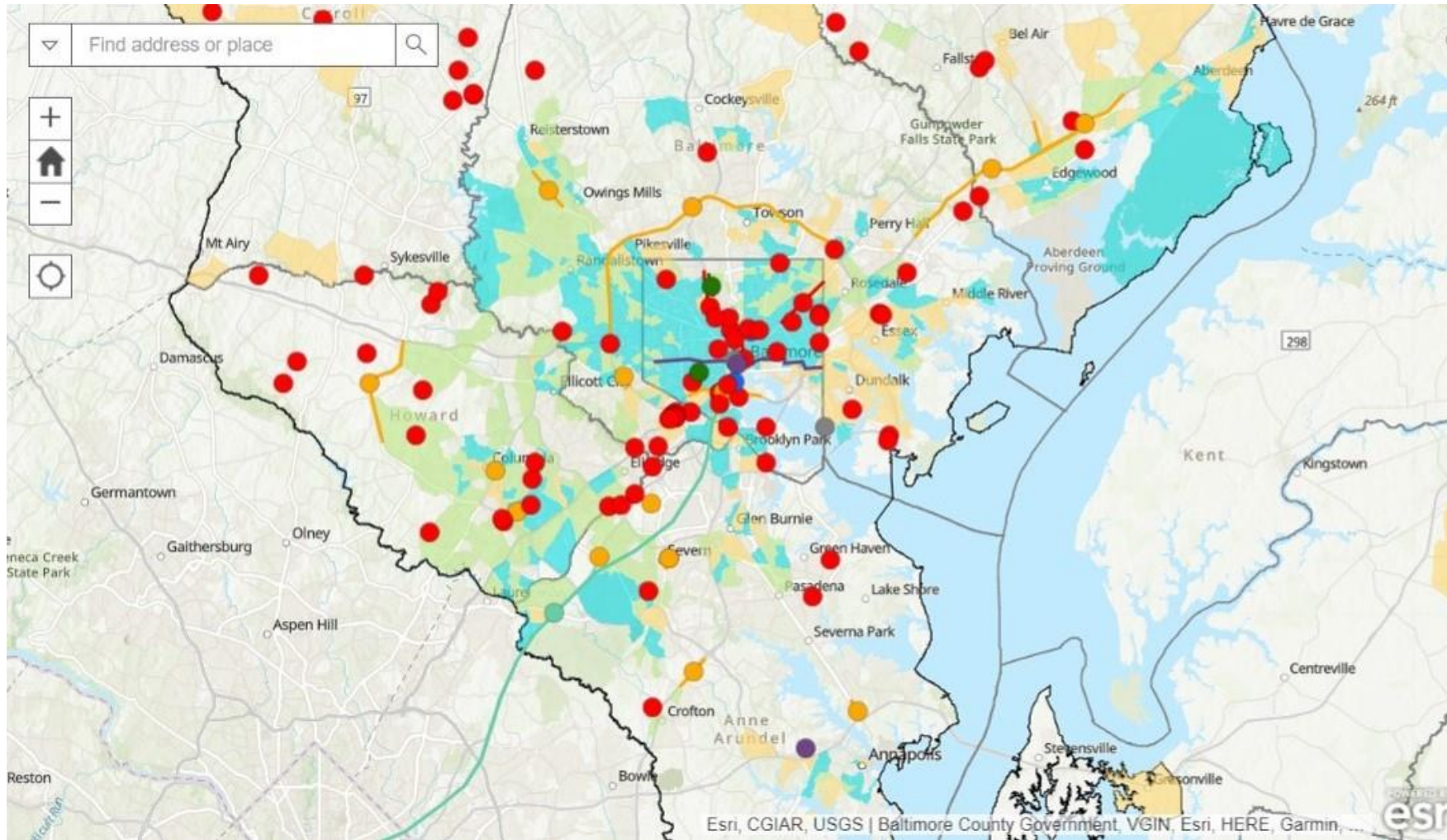
Project	TAM Target	Federal	Matching	Total TIP Funds
MARC Rolling Stock Overhauls and Replacement	Vehicles	\$42,302	\$10,574	\$52,876
Bus and Paratransit Vehicle Overhaul and Replacement	Vehicles	\$78,026	\$19,505	\$97,531
Metro and Light Rail Rolling Stock Overhauls and Replacement	Vehicles	\$118,460	\$34,396	\$152,856



# Project Highlights

- Anne Arundel County: Multimodal Transportation Center in Parole
- Baltimore City: W. North Avenue Pedestrian Safety Improvements from Mt. Royal Avenue to Hilton Street.
- Howard County: PRG: Elkridge to Guinness Open Gate Brewery
- MDOT SHA: I-795 Dolfeld Blvd. Interchange
- Maryland Port Administration: Masonville Cove Connector Shared-Use Path
- MDOT MTA: Eastern Bus Facility
- MDTA: I-95 Express Toll Lanes Northbound Extension
- Carroll and Harford County Bridges (18)

# Interactive Mapping Features

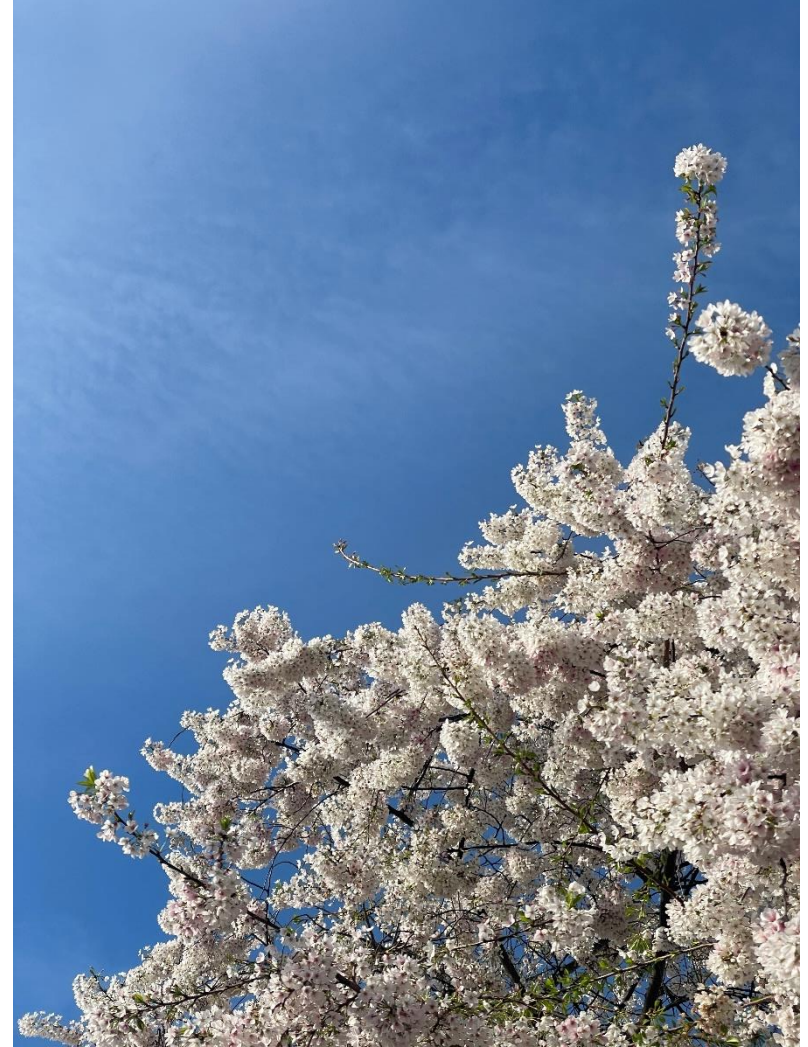


# Changes made/to be made to the Draft 2024-2027 TIP

- **Minor updates to several chapters**
  - Table of Contents updated to include a list of tables and exhibits
  - I.B – Updated Self Certification & Resolution information
  - II.A – Updated from future tense to current
  - II.B – Updated public involvement section
- **Minor updates to Appendices**
  - Appendix B – Updated MDOT Financial Reasonableness
  - Appendix C – Self Certification
  - Appendix F – FY 2023-3036 TIP Amendment Log
    - Administrative modification for Trappe Church Road in Harford County
    - Administrative Modification for Magothy Bridge Road in Anne Arundel County
  - Appendix G – Public Participation
  - Appendix H – Added Full Resolution
  - Appendix J – Added Earmark Projects

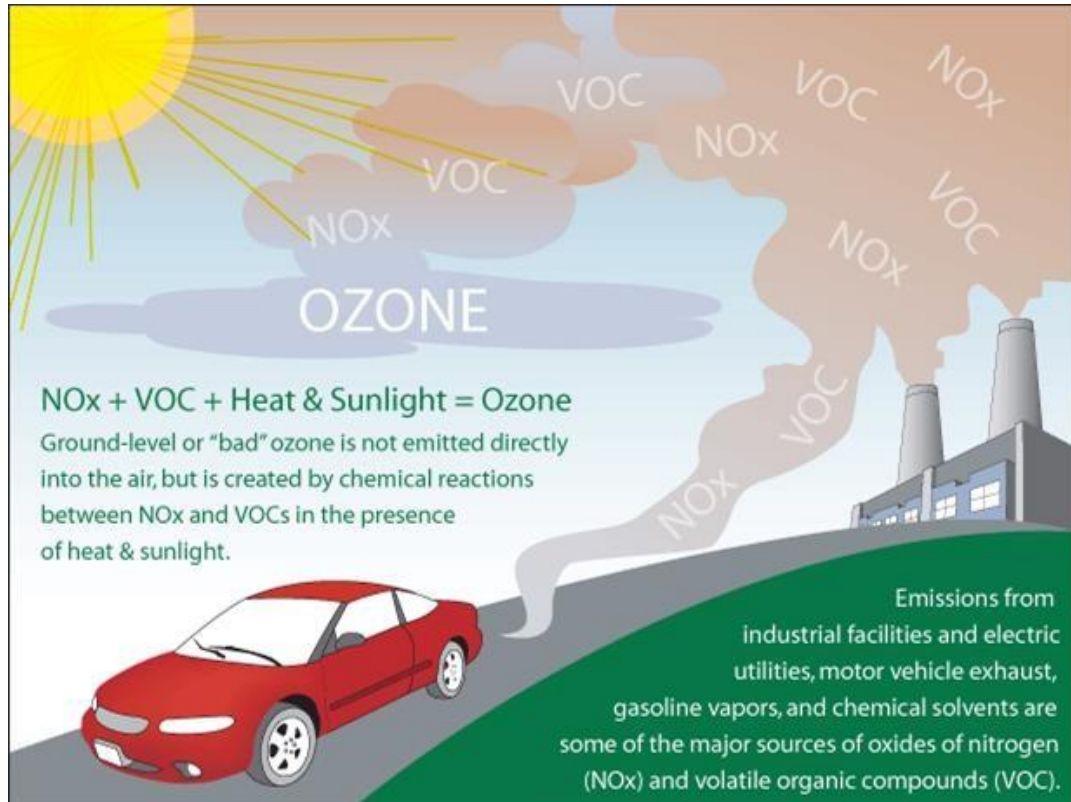
# Air Quality Conformity

- Ensures the projects in *Resilience 2050*, the LRTP and 2024-2027 TIP, do not worsen air quality in the region, or delay the attainment of national ambient air quality standards (NAAQS).
- Requires that transportation emissions do not exceed motor vehicle emission budgets (MVEBs) in the state air quality implementation plan (SIP).
- Ties together transportation planning and air quality planning.





# Air Quality Conformity



- Currently the Baltimore region is in nonattainment for the 2015 ozone NAAQS, which is set at 70 ppb.
- Regional Emissions Analysis: Models transportation emissions of NO<sub>x</sub> and VOC's expected from on-road mobile vehicles.
- Analysis models emissions in particular horizon years assuming existing road and transit network, in addition to TIP and Plan projects.
- All modeled horizon years (2023, 2025, 2035, 2045, 2050) show emissions measuring below SIP budgets.

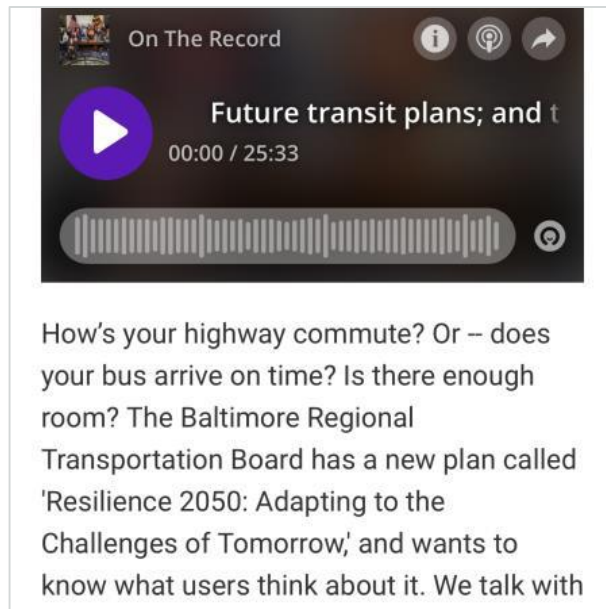
# Conformity Process ICG Milestones

- Methodology Letter (ID specific pollutants, emissions model, model run years) developed by the ICG and sent to federal agencies for review.
- Determine conformity status, either exempt/non-exempt/regionally significant for LRTP and TIP (project-by-project)
- BMC and MDE run EPA-developed emissions model. MDE supplies the official results.
- ICG approves regional emissions analysis results for public review.
- After the public comment period for *Resilience 2050* takes place staff and members review comments.
- Looking to the ICG/TC to recommend approval of conformity document



# Public Comment Period: Advertisement

- Comment Period: May 17 - June 20, 2023
- Promotion across 13 print, radio and digital outlets
  - Digital: Minimum of 166,000 impressions
  - All outlets: Potential reach of 1 million impressions through paid promotion
  - Additional impressions through social media
- Earned media in WBAL, WYPR, Maryland Matters and other outlets



# Public Comment Period: Meetings and Comments

- One recorded presentation on website
- One virtual and seven in person public meetings
- Comments from individuals and organizations
  - 100+ through email and PublicInput
- Types of comments on the LRTP/TIP/AQ:
  - Negative sentiment for highway capacity expenditures
  - Positive sentiment for transit, particularly in transit capacity for transit-reliant populations
  - Positive sentiment for bicycle and pedestrian improvements



**Resilience 2050**  
Adapting to the Challenges of Tomorrow

These draft plans include \$22.4 billion for transportation projects in the region.

▲ Short-Range Projects  
● Long-Range Projects

**We want to hear from you!**

To learn more, please join us for a virtual meeting:

**Wednesday, May 24**  
12:00-1:00 p.m.

or join any of our in-person meetings in Baltimore City, Bel Air, Ellicott City, Glen Burnie, Stevensville, Towson or Westminster.

Tune in live at:  
[publicinput.com/Resilience2050](https://publicinput.com/Resilience2050)

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Baltimore Regional Transportation Board

## For More Information

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# Project Highlights

- **Anne Arundel County: Multi-modal Transportation Center in Parole**
  - Will serve existing local and regional bus service, with possible future connectivity to modes such as bikeshare, carshare, and ridehailing services
  - Location at the Westfield Annapolis Mall
  - TIP Funding: \$15.5 million in local funds
  - Year of Operation: 2025





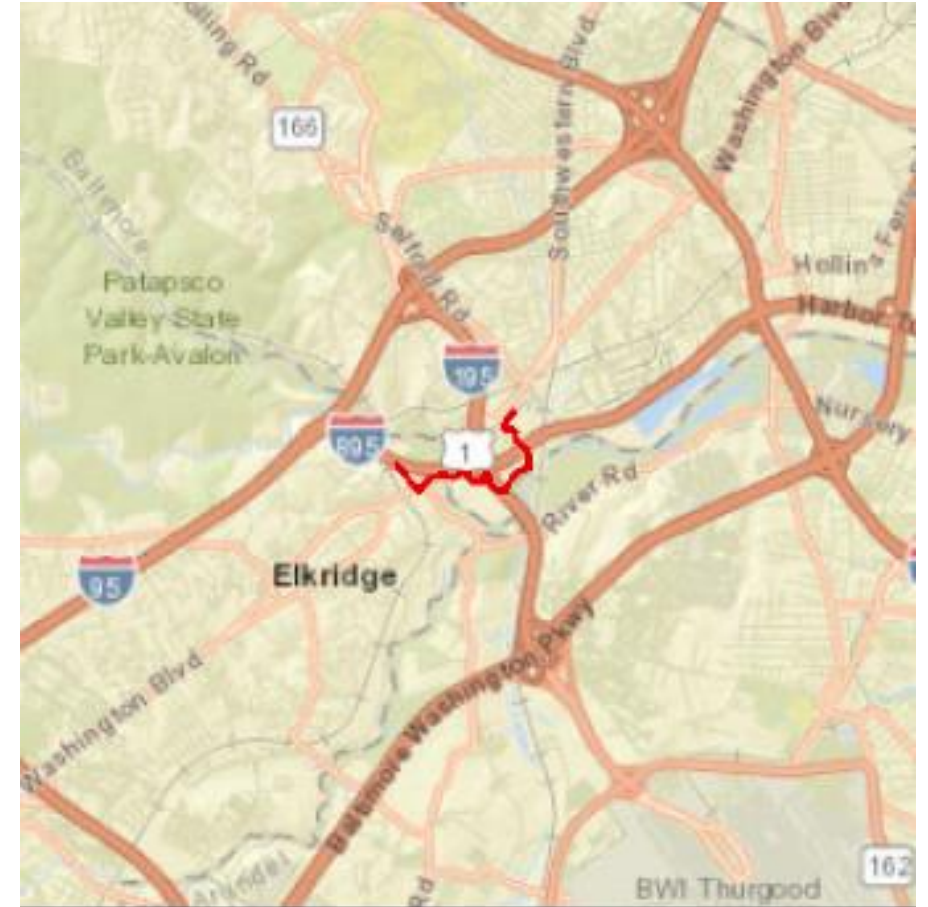
# Project Highlights

- **Baltimore City: W. North Ave. Pedestrian Safety Improvements from Mt. Royal Ave. to Hilton St.**
  - 2.6 mile from Mt. Royal Ave to Hilton St.
  - Reconstructs sidewalks, driveways, curb & Gutter, ped signals, crosswalks and lighting
  - Drainage improvements and landscaping
  - Project will make this roadway ADA Compliant
  - Year of Operation: 2030
  - TIP Funding: \$1 million (\$11 million Total)



# Project Highlights

- Howard County: PRG: Elkridge to Guinness Open Gate Brewery
  - Adds 1.5 mile 10-foot wide shared-use path
  - Part of the overall 40 mile PRG
  - TIP Funding: \$1.9 million
  - \$1.25 Howard County grant and \$500,000 from Baltimore County for engineering
  - Year of Operation: 2026





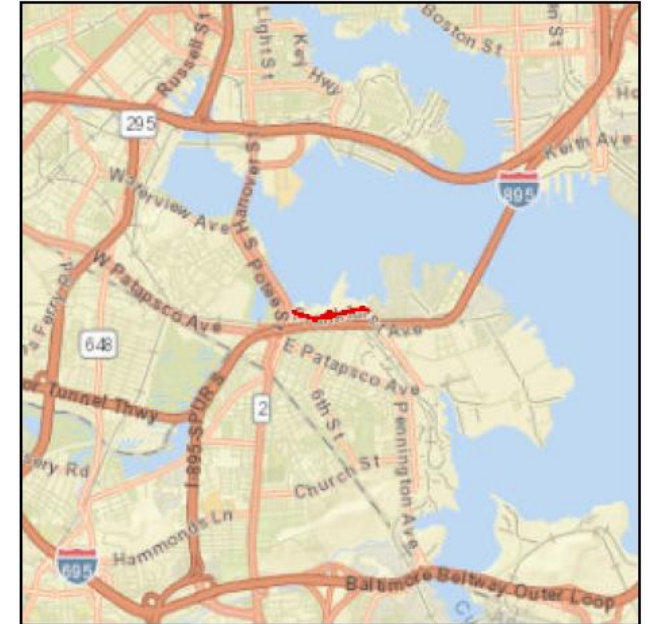
# Project Highlights

- **MDOT SHA: I-795 Dolfield Blvd. Interchange**
  - Includes widening of I-795 from Owings Mills Blvd. to Franklin Blvd.
  - Includes TSMO Strategies
  - Will improve access to the planned growth corridor along Red Run Blvd.
  - \$24 million programmed (\$149 Million total)
  - Year of Operation: 2031



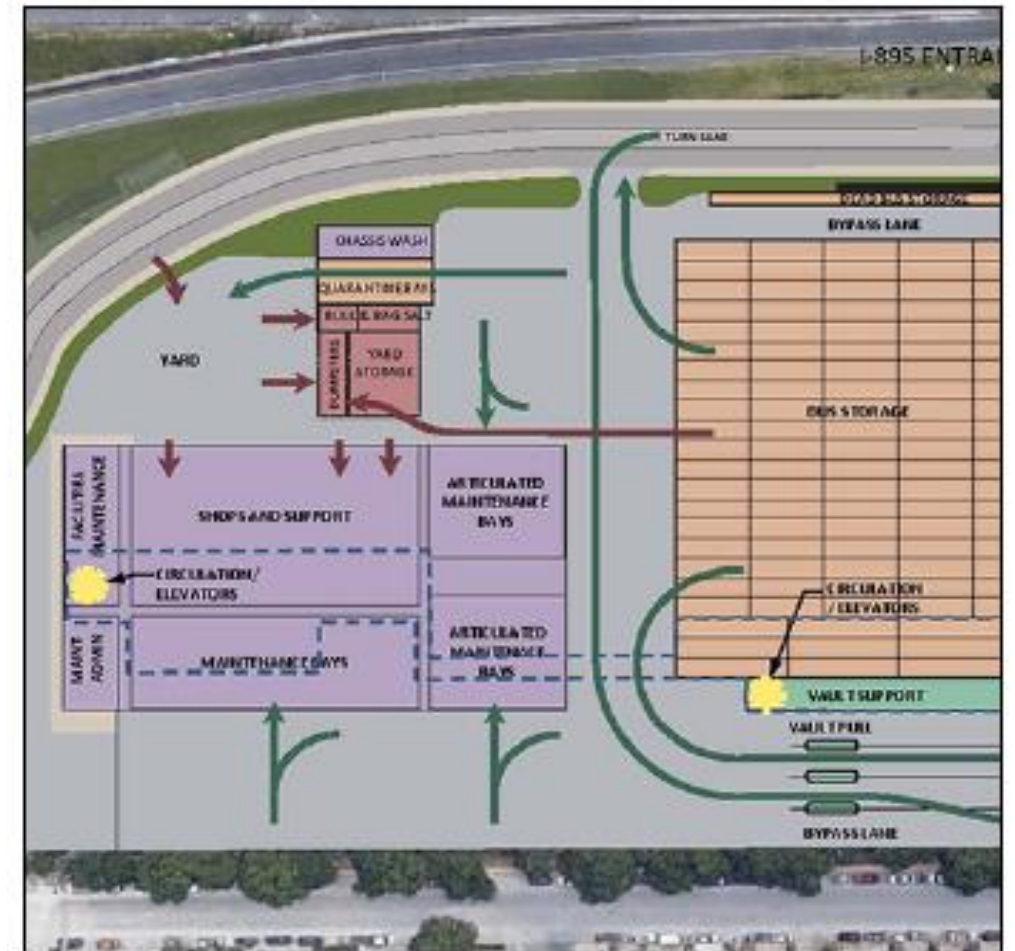
# Project Highlights

- **Maryland Port Administration:  
Masonville Cove Connector Shared-Use Path**
  - 2 mile trail along Frankfurst Ave. between Masonville Cove and Hanover Street
  - Using Fed. Lands Access Program funding (FLAP)
  - Matching funds from US Fish and Wildlife
  - Links to existing Gwynns Falls Trail
  - Connects over 20 miles of existing trails
  - Year of Operation: 2025



# Project Highlights

- **MDOT MTA: Eastern Bus Facility**
  - Upgrades existing facility to an electric bus division
  - 1,100 SF combined maintenance, washing, fueling and bus operations space
  - Parking for 190 buses and 216 employees
  - The Greenhouse Gas Reduction Act requires MTA's vehicles to be zero emission by 2030
  - \$86.3 million funded in TIP (\$162.3 Total)
  - Anticipated completion 2026



# Project Highlights

- **Maryland Transportation Authority: I-95 Northbound Extension**
  - Two ETLs from north of MD 43 to north of MD 24 (11.25 miles)
  - Reconstruction of MD 152 and MD 24 interchanges
  - Widening MD 24 from two to three lanes from MD 924 to north of Singer Road (~1 mile)
  - Reconstruction of 5 overpasses over I-95
  - Construction of 5 noisewalls
  - Reconstruction of 5 overpasses
  - TIP Funding: \$542.2 million in MDTA Toll Revenues
  - Year of Operation: 2027

