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7

CHAPTER

Funding the Transportation System

This chapter provides information about the projects in the constrained element of the plan including:

- An overview of transportation funding.
- A summary of financial constraint and financial plan data.
- Lists and maps of the projects.
- A review of how the projects in the plan are advancing the TPB policy priorities, including the concepts called for in the seven endorsed Aspirational Initiatives, including a summary of responses to the regional policy questions that project sponsors completed for each project.
- A summary of responses to the federal policy questions that project sponsors completed for each project.

WHAT ARE "FUNDING SILOS?"

Transportation funding is not one "pot" of money that can be spent on any transportation project, program, or service. Federal and state laws and policies dictate where and how transportation funds can be applied, which separates the funding available into "silos."

In Chapter 8, Planning for Performance, learn more about the performance of the constrained element of the transportation system including performance-based planning and programming, the results of Air Quality Conformity analysis of the constrained element of the plan, and findings from the analysis which demonstrates the projected future performance of the transportation system in 2045.

How Do We Pay for Transportation?

Funding for the transportation system is provided by the federal, state, and local governments. But what is the source of funding? Generally, revenues for transportation are generated through a "user pay" system. Revenues typically come from sources such as fuel taxes, vehicle registration fees, transit fares, tolls, and other mechanisms, with additional revenues coming from general taxes.

In the metropolitan Washington region, state and local funding allocation to projects varies across jurisdictions. Federal funds are available through grants and specific funding programs. There is not one “pot” of funding. The available monies are typically allowed to be used for specific project types, such as maintenance, transit, enhanced mobility, safety, and other federal and state priorities. These different streams of funding are often called “funding silos.”

Does the Region Have Enough Funding?

As the metropolitan Washington region continues to grow in population and employment, new trips on all transportation modes are anticipated. While the LRTP includes continued capacity expansion, most of the increased travel demand will fall upon the existing highway and transit systems. Even with technological improvements and changes in trip demand (e.g., increased telework, home delivery, etc.), increases in travel congestion are predicted, with consequent impacts on quality of life. The predicted increases in congestion have been labeled unacceptable, however absent additional funding, current expansion plans for the region's transportation capacity will not match that anticipated growth, leading to travel demand further exceeding overall capacity.

Even with planned investments in transportation capacity, long-term performance analyses of past plans have predicted that travel congestion will increase significantly in future years, with the 2014 LRTP predicting an increase of 63 percent in congested lane miles (in the AM peak) by 2040, and the 2018 LRTP predicting growth of 43 percent by 2045.

Based on the forecasted results of the 2014 LRTP, the TPB asked staff to compile an unfunded capital needs inventory that would encompass transportation projects that have been included in the plans of TPB member jurisdictions and transportation agencies but have not been submitted for the LRTP due to lack of anticipated funding. The TPB staff issued a solicitation in early 2015 for project inputs for the inventory. This solicitation specified that submitted projects should: (a) affect regional travel and (b) be in state, local, and regionally approved plans, but (c) they should not currently be in the LRTP due to lack of anticipated funding.

The resulting All-Build scenario was a comprehensive inventory of unfunded capital needs, including all the major transportation projects in the plans of the TPB’s member jurisdictions even if those projects were not currently anticipated to be funded. The cost estimates

for construction of the additional new capacity in the All-Build Scenario ranged from $70 billion to $100 billion, an increase of 66 to 140 percent over planned investment in capacity expansion. Approximately $45 billion would be needed for new transit capacity, while the cost estimates for the new All-Build highway projects ranged from $25 to $55 billion. In comparison, new capacity in the 2014 LRTP was estimated at a total of $42 billion: $27 billion for roads and $15 billion for transit. The All-Build scenario also did not account for increased operating and maintenance costs, which would add to the price tag. Even with increase in capacity of the region's transportation system under the All-Build scenario, congestion in the AM peak was still predicted to grow by 32 percent by 2040.

In short, even if the region's transportation system was to receive significant additional funding for new capacity, traffic congestion is likely to grow absent significant lifestyle and policy changes. Transportation needs that are currently funded already consume a significant part of state and local government budgets. The region, its residents, and its businesses are left with a tradeoff between increased traffic congestion and funding new investments. This decision of investments to pursue will be determined by local policy choices over future years.

FEDERAL REQUIREMENTS

Federal regulations require the TPB to develop a long-range transportation plan identifying the projects expected to be funded within a minimum planning horizon of 20 years. The TPB must demonstrate that there is funding available for those projects. The total expenditures cannot exceed the total anticipated funding. The TPB must also analyze the plan for its effect on the region's air quality.

Demonstrating Financial Constraint

The Visualize 2045 update to the TPB's long-range transportation plan addresses the federal requirements for the process of developing the plan and the content that the plan must include. This includes developing a financial plan (Appendix A) and demonstrating "financial constraint." The TPB must demonstrate that it can reasonably expect revenues to fund construction of the major projects and maintain and operate the region's transportation system.[35] The financially constrained element of the Visualize 2045 update identifies all the regionally significant capital improvements to the region's highway and transit systems that transportation agencies expect to make and to be able to afford through 2045. It also outlines all anticipated spending on the current and future transportation system's operations and maintenance over the same timeframe. Any project that might affect future air quality by adding or removing highway or transit capacity is included in this portion of the plan.

There are three major types of projects and programs included in the financially constrained element. They are:

1. **System Expansion.** Projects that add new capacity by increasing the number of lane miles of roadway or by building new transit lines or adding service to existing lines.
2. **State of Good Repair.** Major rehabilitation or complete replacement of aging infrastructure, including bridges, transit vehicles, and technology and communications systems, as they near the end of their useful lifespan.
3. **Operations and Maintenance.** Day-to-day activities like repaving roadways, inspecting and maintaining bridges, clearing snow and debris, servicing transit vehicles, maintaining and operating traffic signals, and paying train and bus operators.

System expansion investments are detailed as specific projects in the plan. Anticipated investments in state

35 Because federal planning regulations require that the financial analysis show reasonably anticipated revenues and expenditures in year of expenditure (YOE) dollars, this report provides estimates in year of expenditure dollars. Year of expenditure dollars include inflation rates in the future years.

of good repair and operations and maintenance are discussed more generally. These investment details are included as part of the financial analysis of the plan (Appendix A).

Financial Plan Summary

The financial analysis of the Visualize 2045 update demonstrates that the region has forecast revenues which are reasonably expected to be available to cover the estimated costs of operating, adequately maintaining, and expanding the highway and transit system. This analysis is a required element of the TPB's long-range transportation plan. This section summarizes the full financial analysis that is provided in Appendix A: Financial Plan of Visualize 2045.

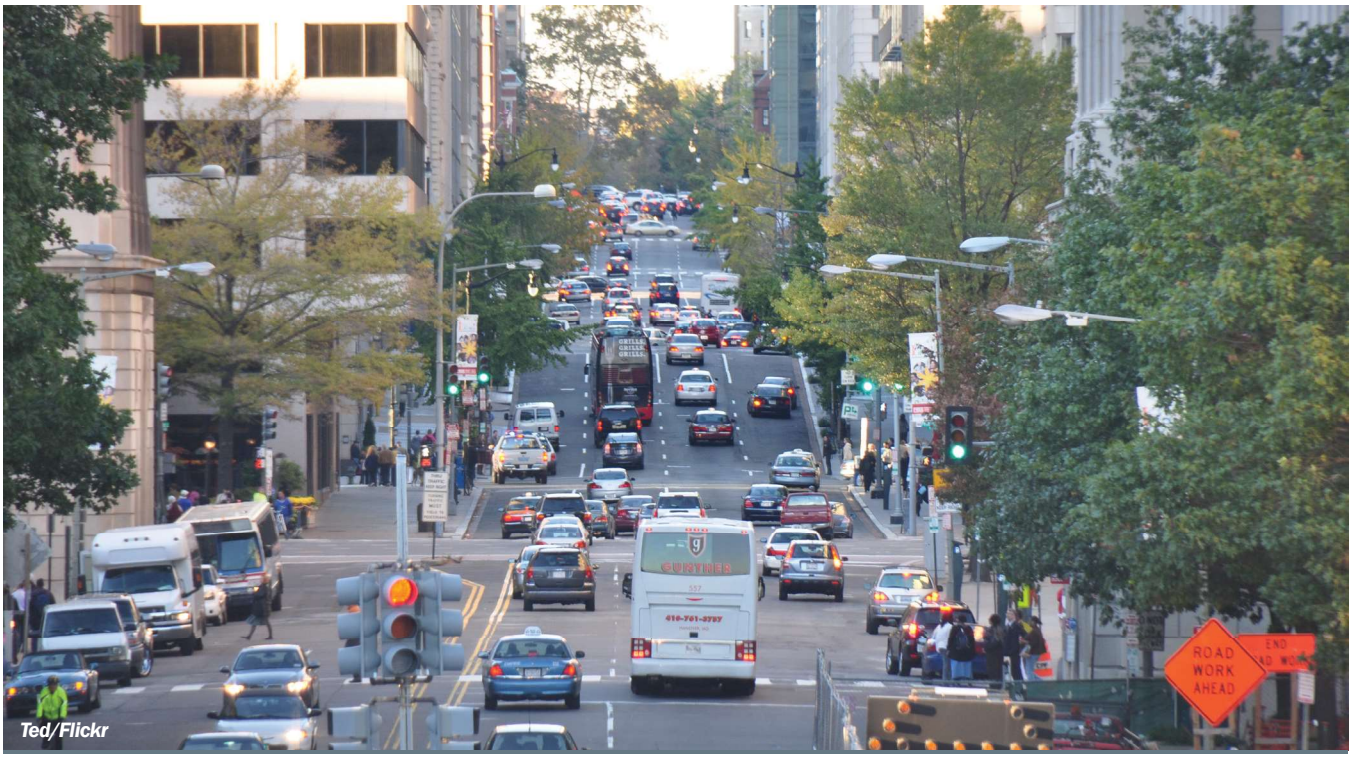
The financially constrained element of Visualize 2045 is fiscally realistic, balancing all proposed new project investments and system maintenance and operating costs with reasonable revenue expectations, as agreed upon by the TPB and its implementation agency partners in the metropolitan transportation planning process.

A total of $222.3 billion in transportation expenditures is projected for the metropolitan Washington region for the 23-year period of 2023 to 2045. The majority of future transportation revenues-81 percent-will be devoted to the operations and maintenance of the public transportation and highway systems. WMATA expenditures constitute 45 percent of revenues and other public transportation make up 22 percent of the total through 2045. Highways constitute 32 percent, and bicycle and pedestrian expenditures, 0.4 percent.

Funding for construction is identified for significant capital projects, including the K Street Transitway in the District of Columbia, the northern and southern segments of the I-270 and I-495 "Op Lanes," part of the statewide Maryland SHA Traffic Relief Plan, and implementation of the Transforming Rail initiative in Virginia. Importantly, the plan demonstrates full funding for WMATA's forecast needs for both operations and state of good repair through 2045.

Forecast Revenues

State DOTs, public transportation providers, other transportation agencies and jurisdictions, and the TPB cooperatively developed reasonable estimates of funds that will be available to support the implementation of the constrained element of Visualize 2045. More details can be found in Appendix A regarding the assumptions agencies made in developing the forecast revenues.



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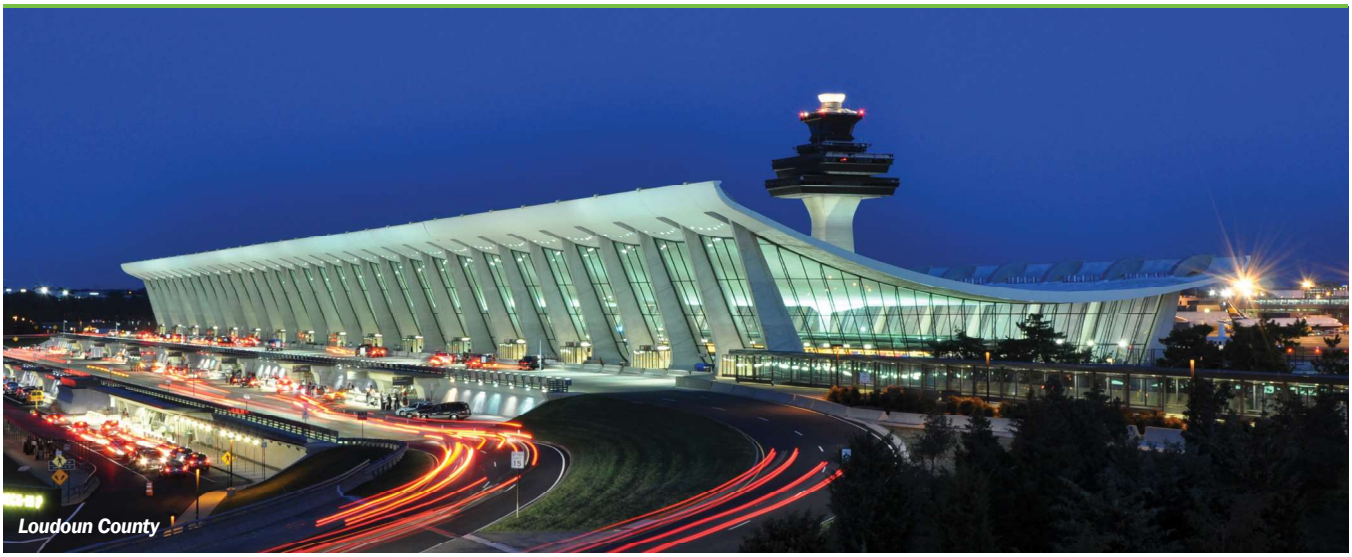


The financial analysis summarizes the revenues (Figure 7.1) for the constrained element of the long-range transportation plan for the period 2023 through 2045. There are five sources of revenue: federal, state, regional/local, private/other, and fares/tolls.

Overall, federal revenue as a proportion of total revenue is 14 percent, while state (including the District of Columbia) sources are the largest single source at 55 percent. Local funds, which include funds collected across Northern Virginia, represent 13 percent of revenue. User fees from fares and tolls are 14 percent of the total revenues, while bonds, private, or other sources account for 3 percent of total revenues.

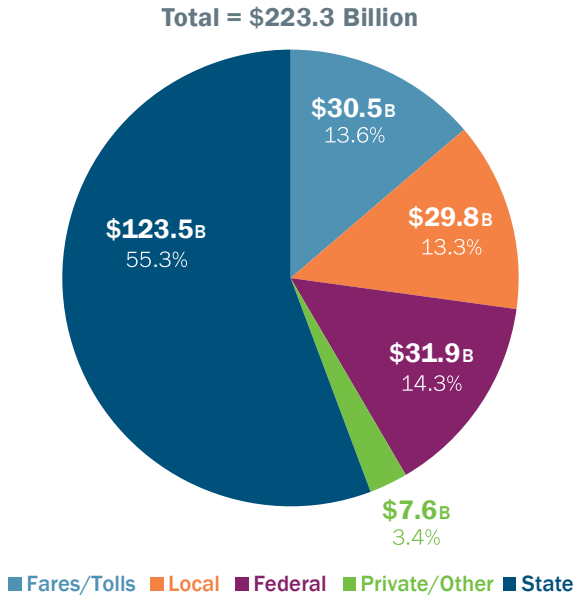
Forecast Expenditures

The financial analysis forecasts the costs of operating, maintaining, and expanding the transportation system (Figure 7.2). Notably, only a fraction of the funds is for expansion of the region's highway and transit systems; most expenditures are to operate and maintain the system and fund state of good repair projects to repair or replace infrastructure including highway bridges, transit vehicles, and other assets. There are three categories of expenditure: operations and maintenance, capital—state of good repair, and capital—expansion.

The financial analysis demonstrates that the region has reasonably expected funds for the projects in the constrained element of Visualize 2045.

Sixty-seven percent of expenditures are slated for public transportation, and 32 percent are slated for highways. Within the expenditures, operating the transportation system is forecasted to take up 53 percent, maintaining the system in a state-of-good repair is forecasted to

Figure 7.1: Revenues by Funding Source, Year of Expenditure Dollars [Billions] (Source: TPB Financial Analysis)



take up 28 percent, and expansion is the smallest portion, with 19 percent. While operating the system constitutes the largest portion of all transit expenditures: it constitutes the smallest portion of all highway expenditures.

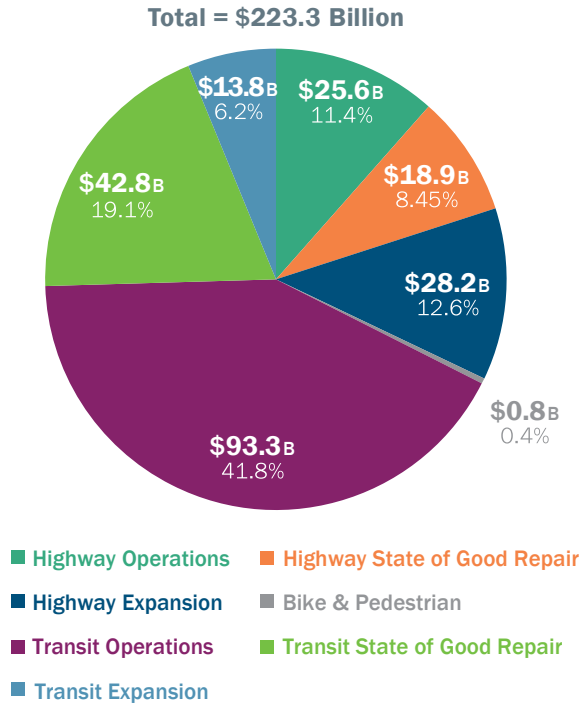
Together, balancing revenues and expenditures demonstrates fiscal constraint and the region's ability to pay for the long-range transportation plan.

Federal Programs

In November 2021, President Biden signed H.R. 3684, the Infrastructure Investment and Jobs Act (IIJA) into law. The IIJA is a sweeping $1.2 trillion infrastructure bill that reauthorizes the nation's surface transportation, drinking water, and wastewater legislation with significant additional funding for new programs in transportation, energy transmission, resilience, broadband, and many other sectors. Of the new funding above, the IIJA directs $284 billion towards all modes of transportation and $266 billion for other infrastructure sectors. The anticipated increase in federal transportation funds will increase funding for the District of Columbia, Maryland, and Virginia, which might lead to additional funding for the region. Funding estimates are likely to change as the programs are finalized and when 2020 census population data is used in apportionments. The IIJA also extends the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) through 2030. The IIJA provides $150M annually towards WMATA's Capital Program which is equally matched by the District of Columbia, Maryland and Virginia. The IIJA increases funding levels of several existing federal programs and establishes new programs focused on mitigating the effects of and building resiliency in face of climate change.

These funds may provide the opportunity for some projects in the plan to be accelerated and might enable more projects to be added to future plans. The funding does not alter the project list for this Visualize 2045 and its Air Quality Conformity analysis, as the project list was approved before the new bill was passed.

Figure 7.2: Expenditures by Type and Mode [Billions] (Source: TPB Financial Analysis)



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Projects in the Financially Constrained Element

The following lists and maps highlight more than 100 of the major and regionally significant projects that provide for system expansion and changes in highway or transit capacity. Many of these projects have been previously approved; some are nearing completion. New or significantly changed projects are identified with bold text in the list on the following pages.

Table 7.1 shows the plan includes 893 new lane miles of roadway and more than 92 new miles of high-capacity transit. Appendix B: Summary of Projects in the Financially Constrained Element includes a comprehensive listing of all projects in the financially constrained element beyond those highlighted in this chapter along with their costs, completion dates, and links to further project information.

Costs identified include updated total project costs which may include additional elements presented in other list(s). Project costs are subject to change over time and as projects are refined. Please see Appendix B for the full list of projects and Appendix C for the detailed conformity inputs. **For details regarding the long-range transportation plan update and inputs to the Air Quality Conformity analysis, please visit the TPB website.**

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Table 7.1: Roadway and Transit Facilities added to the Transportation System (Source: TPB Travel Demand Model)

	System	Existing (2023)	Added by Visualize 2045 update	Total 2045
Roadway (Lane Miles)	Freeways/Expressways	3,802	682	4,484
	Arterials	13,479	211	13,690
	Total	**17,281**	**893**	**18,174**
Tolled Lanes (Lane Miles)*	**Total**	**532**	**221**	**753**
High-Capacity Transit (Miles)	Metrorail	129	0	129
	Light Rail/Streetcar	18	5	23
	Bus Rapid Transit	19	87	106
	Commuter/Regional Rail	173	**	173
	Total	**339**	**92**	**431**

* Tolled lanes are a subset of freeways/expressways

** An approximate additional 16 miles of rail are included in the plan, not presented in the table as they are not reflected in the model outputs.

Major Highway Projects

District of Columbia

Major Highways

1. I-295 (T5723): reconstruct interchange at Malcolm X Blvd, 2022 *($215M)*

Local Roads

2. South Capitol St (T3423): convert to 6 lane Urban Blvd, incl. Frederick Douglass Bridge Reconstruction, 2025 *($777M)*

3. Lane Reductions/ Reconfigurations for Bicycle Lanes: various years, *not mapped*

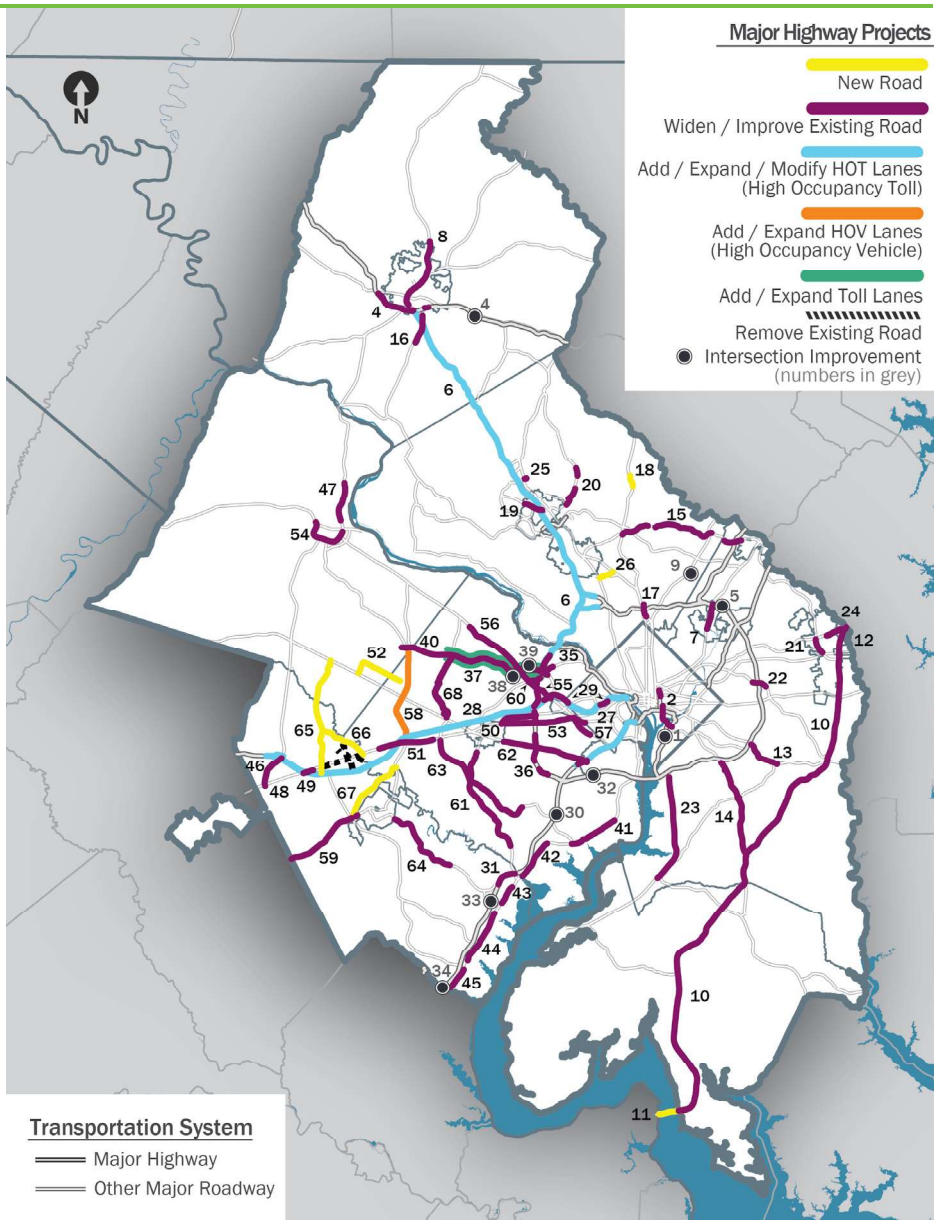
Maryland

Major Highways

4. I-70 (CE1187, CE2250): widen to 6 lanes with interchange at Meadow Rd, 2022, 2035 *($176M)*

5. I-95/I-495 (T2894): interchange at Greenbelt Metro Station, 2030 *($124M)*

6. I-270 (T6432, T11582, T11583): I-270, I-495 (T11582, T11583, T6432) bridge replacement and managed lanes construction, 2025, 2030 (study only for eastern section of I-495) ($3.97B)



7. US-1 (Baltimore Ave) (CE1202, T3108): reconstruct 4 lanes, 2023, 2035 *($169M)*

8. US-15 (Frederick Fwy and Catoctin Mtn Hwy) (CE3566, CE3567): widen to 6 lanes with interchange at Biggs Ford Rd, 2030, 2040 *($840M)*

9. US-29 (Columbia Pke) (CE1197, T3641): improve interchanges at Stewart Ln, Tech Rd/Industrial Pkwy, Musgrove Rd/Fairland Rd, Greencastle Rd, and Blackburn Rd, 2030, 2025, 2045 *($738M)*

10. US-301 (Crain Hwy) (CE1004): widen to 6 lanes, 2045 *($4.6B)*

11. US-301 (Governor Harry Nice 'Mac' Middleton Memorial Bridge) (T5527): replace with new 4-lane bridge, 2023 *($636M)*

State Routes

12. MD-3 (Robert Crain Hwy) (T6394): widen to 6 lanes, 2035 *($906M)*

13. MD-4 (Pennsylvania Ave) (CE1194, T3547): widen to 6 lanes with interchanges at Dowerhouse Rd, Westphalia Rd, and Suitland Pkwy, 2040 *($750M)*

14. MD-5 (Branch Ave) (CE1196, T3469): upgrade, widen to 6 lanes including interchanges, 2030, 2035 ***($804M)***

15. MD-28 (Norbeck Rd) / MD-198 (Spencerville Rd) (T3476): reconstruct, widen portions to 4 lanes, 2045 ***($287M)***

16. MD-85 (Buckeystown Pke) (CE1210, T6483): widen to 4, 6 lanes, 2035 ***($230M)***

17. MD-97 (Georgia Ave) (CE2618): widen to 8 lanes, 2030 ***($104M)***

18. MD-97 (Brookeville Bypass) (T3106): construct 2 lane bypass, 2021 ***($44M)***

19. MD-117 (Clopper Rd) (CE1203): widen to 3, 4 lanes, 2030, 2035 ***($69M)***

20. MD-124 (Woodfield Rd) (CE3057): widen to 6 lanes, 2035 ***($120M)***

21. MD-197 (Collington Rd) (CE2253): widen to 4 lanes, 2030 ***($94M)***

22. MD-202 (Landover Rd) (CE1190): Largo Town Center Metro Access Improvement, reconstruct 6 lanes, 2045 ***($24M)***

23. MD-210 (Indian Head Hwy) (T6524, T4879): upgrade to 6 lanes and interchange improvement, 2040 ***($585M)***

24. MD-450 (Annapolis Rd) (CE1207): widen to 4 lanes, 2030 ***($67M)***

Local Roads

25. Middlebrook Rd Extended (CE1229): widen to 4 lanes, 2045 ***($16M)***

26. Montrose Pkwy East (T3703): construct 4 lanes, 2045 ***($120M)***

Virginia

Major Highways

27. I-66 HOT (Inside Beltway) (CE3484): revise operations from HOT 2+ to HOT 3+ during peak hours and bus service, 2022, 2040 ***($375M)***

28. I-66 HOT (Outside Beltway) (CE3448): widen/ construct HOT lanes and bus service, 2021, 2022, 2040 ***($4.4B)***

29. I-66 (CE3484): Extend existing westbound acceleration/deceleration lane and add additional lane eastbound 2022, 2040 ***($59M)***

30. I-95/Fairfax County Parkway (CE2668): enhanced interchanges for BRAC, 2025 ***($57M)***

31. I-95 (T6682): add southbound auxiliary lane, 2022 ***($32M)***

32. I-95/I-495 (CE2147): reconstruct interchange at Van Dorn St, 2030 ***($40M)***

33. I-95 (T11510): construct HOT reversible ramps to access VA-642 (Opitz Rd), 2022 ***($60M)***

34. I-95 (CE3556): construct HOT lanes ramp south of Russel Rd, 2022 ***($16M)***

35. I-495 (CE2069, CE3186, CE3208): construct 4 HOT lanes with northbound shoulder lane and new ramps and interchanges at VA 267, 2025, 2030, 2045 ***($570M)***

36. I-495 Auxiliary Lanes (CE3272): construct 2 auxiliary lanes in both directions, 2030 ***($3M)***

37. Dulles Toll Rd (VA-267) (CE3151, CE3154): East-bound and west-bound Collector-Distributor Roads, 2035, 2036, 2037 ***($186M)***

38. Dulles Toll Rd (VA-267) (CE3152): interchange at New Boone Blvd Extension, 2037 ***($79M)***

39. Dulles Toll Rd (VA-267) (CE3153): interchange at Greensboro Drive/Tyco Rd, 2036 ***($28M)***

40. Dulles Access Rd (VA 267) (CE1965): widen to 6 lanes including interchange reconstruct at I-495, 2030 ***($400M)***

41. US-1 (Richmond Hwy) (CE1942): widen to 6 lanes, 2028 ***($415M)***

42. US-1 (Richmond Hwy) (CE3180): widen to 6 lanes, 2035 ***($204M)***

43. US-1 (Richmond Hwy) (CE3173): widen to 6 lanes, 2022 ***($125M)***

44. US-1 (Richmond Hwy) (CE2594): widen to 6 lanes, 2030 ***($127M)***

45. US-1 (Richmond Hwy) (CE3291): widen to 6 lanes, 2040 ***($58M)***

46. US-15 (James Madison Hwy) (T6693): widen to 4 lanes, 2030 ***($45M)***

47. US-15 (James Madison Hwy) (CE1803): widen to 4 lanes, 2040 ***($54M)***

48. US-15 (James Madison Hwy) (CE3738): widen to 4 lanes, 2026 ***($111M)***

49. US-29 (Lee Hwy) (T4794): widen to 5 lanes, completed ***($212M)***

50. US-29 (Lee Hwy) (CE1933): widen to 6 lanes, 2040 ***($130M)***

51. US-29 (Lee Hwy) (CE3474): widen to 6 lanes, 2024 ***($86M)***

52. US-50 North Collector Rd (CE3739): construct new 4-lane road, 2029 *($110M)*

53. US-50 (Arlington Blvd) (CE2182): widen to 6 lanes, 2035 ***($249M)***

State Routes

54. VA-7/US-15 Bypass (Harry Byrd Hwy) (CE1870): upgrade and widen to 6 lanes, 2040 ***($55M)***

55. VA-7 (Leesburg Pke) (CE3161): widen to 6 lanes, 2030 ***($71M)***

56. VA-7 (Leesburg Pke) (CE2105): widen to 6, 8 lanes, 2024, 2030 ***($314M)***

57. VA-7 (Leesburg Pke) (CE2175): widen to 6 lanes, 2030 ***($34M)***

58. VA-28 (Sully Rd) (CE1734): widen to 8 to 10 lanes, HOV in additional lanes during peak, 2021, 2025, 2040 ***($100M)***

59. VA-28 (Nokesville Rd) (CE2045): widen to 4 or 6 lanes, 2022, 2040 ***($71M)***

60. VA-123 (Chain Bridge Rd) (CE3376, CE3698): widen to 6, 8 lanes, 2030 ***($22M)***

61. VA-123 (Ox Rd) (CE1784, CE1856): widen to 6 lanes, 2030 ***($70M)***

62. VA-236 (Little River Tpke) (CE1760): widen to 6 lanes, 2030 ***($58M)***

63. VA-286 (Fairfax County Pkwy) (CE2106, T6694): widen to 6 lanes, 2030, 2035, 2040 ***($198M)***

64. VA-294 (Prince William Pkwy) (CE2718): widen to 6 lanes, 2040 ***($263M)***

65. Manassas Bypass (VA-234 Bypass) (CE1897): construct 4 lanes, 2040 ***(costs captured in other projects)***

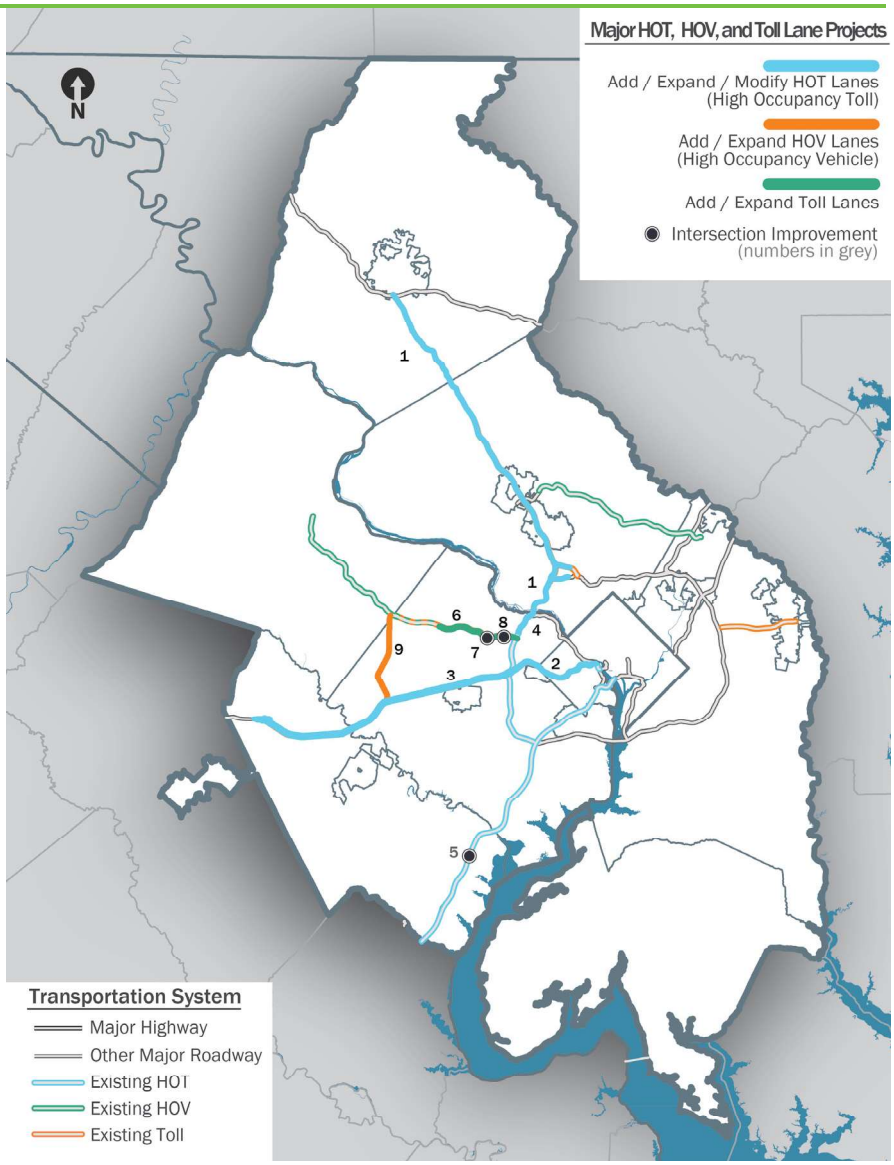
66. Manassas Battlefield Bypass (CE3061): construct 4 lanes and close portions of US-29 (Lee Hwy) and VA-234 (Sudley Rd), 2030, 2040 ***($28M)***

67. VA 28 Manassas Bypass (CE1865): construct 4 lanes, 2025 ***($228M)***

MDOT/Flickr

Major HOT, HOV, and Toll Lane Projects*

*** HOT = High-Occupancy Toll Lanes. HOV = High-Occupancy Vehicle Lanes** *The projects and costs shown on this page are redundant to those included in the Highway Projects list on the previous pages.*



Maryland

Major Highways

1. I-270 and I-495 (T6432): bridge replacement and managed lanes construction, 2025, 2030 (study only for eastern section of I-495) ***($3.4B)***

Virginia

Major Highways

2. I-66 HOT (Inside Beltway) (CE2096, CE3484): revise operations from HOT 2+ to HOT 3+ during peak hours and bus service, 2022, 2040 ***($375M)***

3. I-66 HOT (Outside Beltway) (CE3448): widen/construct HOT lanes and bus service, 2021, 2022, 2040 ***($4.4B)***

4. I-495 (CE2069): construct 4 HOT lanes, 2025 ***($500M)***

5. I-95 (CE3697): construct HOT reversible ramps to access VA-642 (Opitz Rd), 2022 ***($60M)***

6. Dulles Toll Rd (VA-267) (CE3151, CE3154): Collector-Distributor Rd west-bound, 2035, 2037 ***($62M)***

7. Dulles Toll Rd (VA-267) (CE3151, CE3154): Collector-Distributor Rd east-bound, 2035, 2036 ***($124M)***

8. Dulles Toll Rd (VA-267) (CE3152): interchange at New Boone Blvd Extension, 2037 ***($79M)***

9. Dulles Toll Rd (VA-267) (CE3153): interchange at Greensboro Dr/Tyco Rd, 2036 ***($28M)***

State Routes

10. VA-28 (Sully Rd) HOV (CE1734): widen to 8-10 lanes, HOV in additional lanes during peak, 2021, 2025, 2040 ***($100M)***

Major Transit Projects

District of Columbia

1. DC Streetcar (CE3081,5754): 2026, 2040 ***($545M)***

2. DC Dedicated Bicycle Lane Network: various years, *not mapped* ***($800K)***

3. 16th St Bus Priority Improvements (6638): 2022 ***($2M)***

4. DDOT H and I street Bus-Only Lanes (part of T3212): *($1.1 M)*

Maryland

5. Corridor Cities Transitway BRT (CE1649): from Shady Grove to COMSAT, 2035 ***($545M)***

6. North Bethesda Transitway BRT (CE3663): from Montgomery Mall to White Flint Metro, 2035 ***($115M)***

7. Veirs Mill Rd BRT (CE3103): from Wheaton Metro to Rockville Metro, 2030 ***($82M)***

8. Randolph Rd BRT (CE3662): from US-29 to MD-355, 2040 ***($102M)***

9. New Hampshire Ave. BRT (CE3672): from Takoma Metro to Colesville P&R, 2045 ***($285M)***

10. MD-355 BRT (T6396): from Bethesda Metro to Clarksburg, 2030 ***($1B)***

11. MARC (CE3427): increase trip capacity and frequency along all commuter rail lines, 2029 ***($1B)***

12. Purple Line (CE2795): Bethesda to New Carrollton, 2023 ***($2.7B)***

Virginia

13. Crystal City Transitway Northern and Southern Ext BRT (CE3521, CE3648): 2022, 2025, 2030 ***($52M)***

14. Metro Silver Line (Dulles Corridor Metrorail Project) (CE1981): Phase 2, 2022 ***($2.9B)***

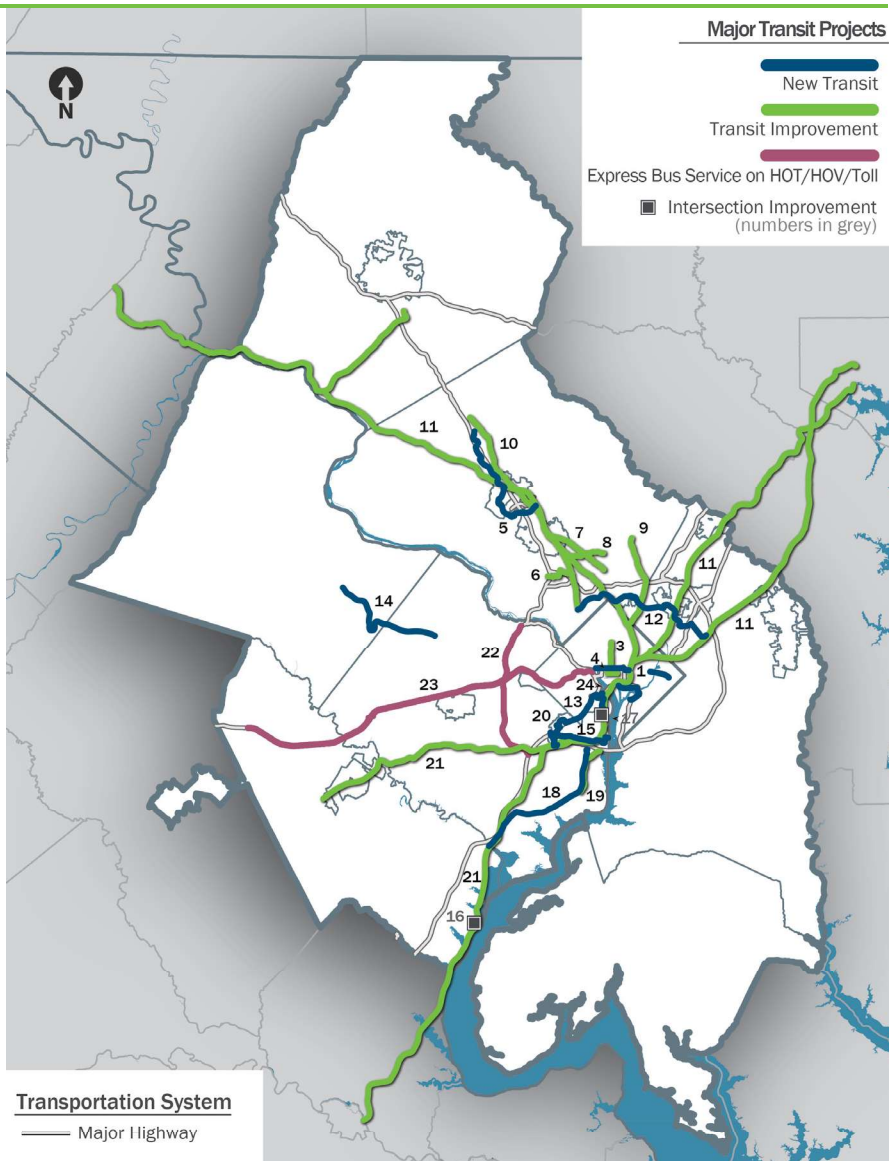
15. Duke St Transitway (CE2932): King St Metro to Fairfax County line, 2027 ***($19M)***

16. Potomac Shores VRE Station (CE2831): 2022 ***($26M)***

17. Potomac Yard Metro Station (CE3013): 2022 ***($268M)***

18. US-1 BRT from Huntington Metro Station to Woodbridge (T6680): 2030 ***($504M)***

19. US-1 bus lanes and improved intersections (CE1942): 2035 ***($37M)***



20. West End Transitway (CE2930): Van Dorn St Metro to Pentagon Metro and to Landmark, 2026, 2035 ***($420M)***

21. VRE (CE2832, CE2420): 3rd and 4th track projects to reduce headways along the Manassas and Fredericksburg Lines, 2025, 2028, 2035 ***($105M)***

22. I-495 HOT Lane Express Bus Service: 2030 ***($254M)***

23. I-66 HOT Lane Enhanced Bus Service (CE3484, CE3448): 2025, 2040 ***($375M)***

24. Additional Long Bridge (T6727): railroad crossing with two-tracks and pedestrian/bike access, 2027 ***($1.9B)***

Tracking Progress: The Financially Constrained Element and Policy Priorities

Projects that address the TPB's goals and Aspirational Initiatives, and the Federal Planning Factors

There are more than 400 projects in the constrained element project list. Tables 7.2–7.9 provide a summary of how the projects enhance, promote, or support each RTPP transportation goal, Aspirational Initiative, and federal planning factor. This section also provides examples of the constrained element projects that align with the TPB's endorsed Aspirational Initiatives.

This summary is compiled from information provided by each project sponsor in response to questions in the 2020 **Technical Inputs Solicitation**. The total number of projects that support each goal area is based on the information that project sponsors submit. For example, in response to Goal 1 (Table 7.2), project sponsors noted that 195 projects promote, support, or enhance transportation for local bus.

Some projects could be a subcomponent of a larger project. As many projects have numerous components, such as roadway, transit, bicycle/pedestrian and safety components, each project might enhance, promote, or support more than one transportation option or planning priority. The solicitation also asked project sponsors to provide narrative responses as to how equity is considered in planning, if and how projects mitigates greenhouse gas emissions, and how projects advance the Aspirational Initiatives and TPB goals. **For the complete narrative responses for each project as provided by the agencies, please visit the Visualize 2045 website.**

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Regional Transportation Priorities Plan (RTPP) Goals

Goal 1: Provide a Comprehensive Range of Transportation Options

Having more transportation options to choose from makes it easier for people to find the travel modes that works best for them in meeting their daily needs. The table below summarizes the number of projects that support the different options available in the region. It also includes a category specific to improving accessibility for disadvantaged groups and their transportation needs.

Table 7.2: Goal 1 — Project Sponsor Responses

GOAL 1

NON-AUTO TRAVEL/ REDUCE VMT	SOV	HOV	METRORAIL	COMMUTER RAIL	STREETCAR/ LIGHT RAIL	BRT
95	243	74	67	30	9	35

EXPRESS/ COMMUTER BUS	METROBUS	LOCAL BUS	BICYCLING	WALKING	OTHER	DISADVANTAGED GROUPS
92	102	195	205	211	6	61

Goal 2: Promote a Strong Regional Economy, Including a Healthy Regional Core and Dynamic Activity Centers

The region's economy is supported largely by the economic activity that occurs in major housing and job centers, known as Activity Centers. Strengthening these areas, including the regional core, and connecting them with good transportation options bolsters the economy. It allows the region to grow and use land more wisely, and creates numerous opportunities to move people and goods more efficiently and with a lower carbon footprint. Respondents for each of the projects were asked about the project area and overlap with Activity Centers and Equity Emphasis Areas (EEAs), which are areas with significant concentrations of low-income households, concentrations of minority populations, or both.

Table 7.3: Goal 2 — Project Sponsor Responses

GOAL 2

IN EQUITY EMPHASIS AREA	BEGIN/END IN ACTIVITY CENTERS	CONNECT ACTIVITY CENTERS	NON-AUTO WITHIN ACTIVITY CENTERS	CONNECT EQUITY EMPHASIS AREAS TO ACTIVITY CENTERS
109	196	117	137	129

Goal 3: Ensure Adequate System Maintenance, Preservation, and Safety

Keeping the region's extensive transportation system in a state of good repair is crucial to ensuring reliability and safety. Maintaining existing infrastructure results in better system performance and significant savings in the long-run. System maintenance and preservation requires about 28 percent of the region's transportation funds. Respondents indicated that 115 projects contribute to enhanced system maintenance or preservation.

Table 7.4: Goal 3 — Project Sponsor Responses

GOAL 3	115	MAINTENANCE

Goal 4: Maximize Operational Effectiveness and Safety of the Transportation System

To maximize system effectiveness and safety of the existing transportation network, the region needs to utilize available technologies, techniques, and programs. Rapid growth and limited financial resources make it especially important to maximize system efficiency. The solicitation asked project sponsors if the projects would reduce travel time on highways and/or transit without building new capacity and if the project is expected to significantly reduce fatalities or injuries.

Table 7.5: Goal 4 — Project Sponsor Responses

GOAL 4	84	REDUCE TIME WITHOUT CAPACITY
	188	ENHANCE SAFETY

Goal 5: Enhance Environmental Quality, and Protect Natural and Cultural Resources

An effective transportation system needs to balance the mobility needs of a growing region with the potentially harmful effects that travel by car and other modes may have on the environment and health of residents. This goal monitors the environmental impact that projects may have through criteria pollutants and greenhouse gas emissions. Learn more about environmental consultation and mitigation in Chapter 6 and through the **TPB's interactive map**.

Table 7.6: Goal 5 — Project Sponsor Responses

GOAL 5

171	185
REDUCTION IN CRITERIA POLLUTANT EMISSIONS	REDUCTION IN GREENHOUSE GAS EMISSIONS

Goal 6: Support Inter-Regional and International Travel and Commerce

The region strives to be among the most accessible in the nation for inter-regional and international passenger and goods movement. Providing strong passenger and freight connections by air, highway, rail, and sea brings economic benefits to our region. This table summarizes the number of projects that enhance, support, or promote those freight and passenger carrier modes.

Table 7.7: Goal 6 — Project Sponsor Responses

GOAL 6

58	162	8	17	24	14	36
LONG-HAUL TRUCK	LOCAL DELIVERY	FREIGHT RAIL	FREIGHT AIR	AIR PASSENGER	AMTRAK	INTERCITY BUS

Elvert Barnes/Flickr

Aspirational Initiatives

The Visualize 2045 update calls upon local jurisdictions and funding agencies to implement projects, programs, and policies in line with the seven Aspirational Initiatives described in Chapter 6. The TPB believes that the anticipated growth in travel demand calls for increasing and accelerated investment in projects, programs, and policies in line with the initiatives to help the region attain its transportation goals. Across the region, TPB member jurisdictions and agencies are planning and implementing these initiatives, some of which must be included in the constrained element. To be included in the constrained element, projects must be funded and meet other criteria (see Chapter 1). The narrative in this section provides examples of projects in the financially constrained element, illustrating progress on the region's aspirations. Table 7.8 provides a count of the projects in the constrained element and their connection to the endorsed initiatives.

As noted above, localities and funding agencies were asked to align their projects to the Aspirational Initiatives. During the data collection process, they were asked if each of the projects support or advance each of the initiatives and to provide additional written information describing how.

Table 7.8: Aspirational Initiatives — Project Sponsor Responses

127	47	48	42	32	162	36
BRING JOBS AND HOUSING CLOSER TOGETHER	EXPAND BRT AND TRANSITWAYS REGIONWIDE	MOVE MORE PEOPLE ON METRORAIL	PROVIDE MORE TELECOMMUTING AND OTHER OPTIONS FOR COMMUTING	EXPAND EXPRESS HIGHWAY NETWORK	IMPROVE WALK AND BIKE ACCESS TO TRANSIT	COMPLETE THE NATIONAL CAPITAL TRAIL NETWORK

Bring Jobs and Housing Closer Together by adding housing, and concentrating more housing and jobs in central locations such as Activity Centers and near high-capacity transit station areas. Specific consideration ought to be given to Equity Emphasis Areas to make it possible for more people of all incomes to live near employment and other frequent destinations. This initiative brings together the most effective strategies for transportation and land-use planning, which can make it possible for people to make shorter trips and fewer single-occupant auto trips, as people will be able to choose from a range of travel options (see the infographic, page 84). The region is responding to this initiative through the COG Housing Initiative described in the land-use section of Chapter 6. While specific land-use projects are not detailed in the constrained element, COG's Cooperative Forecast of Population, Households, and Employment is used as the basis for TPB modeling for system performance in 2045 (see Chapter 8). About 80 percent of land use documented in the Cooperative Forecast is already in place. The forecast projects that much of the new housing and jobs in the region will be located in regional Activity Centers. Many projects in the constrained element represented by the other initiatives help to connect Activity Centers through a range of travel options including high-capacity transit. Examples include Embark Richmond Highway (US-1) in Fairfax County (T6680), which includes plans for complementary new development and rapid transit.

A project on the US 15/US 40 Corridor (CE3566) in Frederick County will improve the network, providing commuters with safe and reliable travel. The project, Silver Line - Phase 2 (CE1981), catalyzes and will serve new transit-oriented development that provides additional housing near jobs in northern Virginia. To implement the Woodbridge, VA, transit-oriented development near a VRE station, a project called Marina Way Extended (CE3756) will construct a boulevard section with pedestrian facilities on both sides of the roadway to encourage nonmotorized transportation.

Joe Flood/Flickr

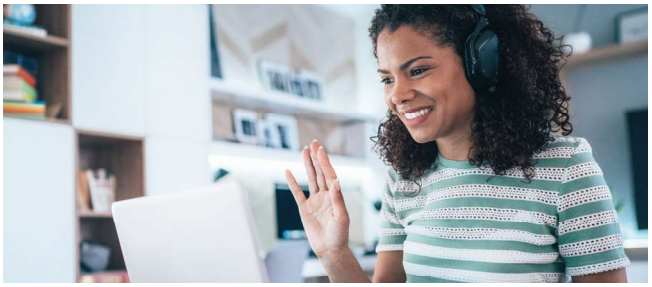
Expand Bus Rapid Transit and Transitways throughout the region to provide people not only more transit options but also a reliable and fast bus service for work and non-work trips (see the infographic on page 89). The financially constrained element includes five new bus rapid transit (BRT) routes in Montgomery County, MD (CE3663, CE3103, CE3662, CE3672, T6396). These routes on Veirs Mill Road, Randolph Road, New Hampshire Avenue, and other roads reflect many of the key BRT characteristics to enhance reliability and reduce travel time. The constrained element also includes the Crystal City Transitway BRT expansion (CE3521, CE3648). This project expands upon the existing Metroway system and results in a route which will run partially on an exclusive right-of-way. Other BRT in the plan includes the Corridor Cities Transitway BRT (CE1649) in Maryland and the Route 1 Richmond Highway BRT (T6680) in Virginia, both of which will run in exclusive rights-of-way. As agencies typically need to retrofit these projects into existing roadways, there are at times compromises made to implement a project, such as operating in dedicated rights-of-way for part, not all of the trip, or transitioning to off-board payment when feasible.

Beyond DC/Flickr

There are other transitway projects in the constrained element that provide people with more transit options or improve reliability and service. The 16th Street Bus Priority Improvements (T6638) project in DC will add bus lanes on a major bus route which will increase the speed and reliability of bus lines that are utilized by thousands of riders every day. The H&I Street Bus-Only Lanes (part of T3212) will provide increased reliability in transit options for commuting to and through DC's downtown core. The US-1 bus lanes project (CE1942) widens an additional lane in each direction from VA 235 north to the Capital Beltway. During peak periods, these lanes will be reserved for use by buses.

Elvert Barnes/Flickr

Move More People on Metrorail. The initiative calls for other capacity improvements to Metrorail, to move more people by providing more frequent services with longer trains and expanded stations that are accessible by nonmotorized modes. The financially constrained element includes new 8-car trains as well as the completion of the Silver Line. The Silver Line-Phase 2 Metrorail Project (CE1981) expands capacity on Metrorail by extending the Orange Line in Fairfax County and adds new stations. Another Metrorail improvement is the new Potomac Yard station in Alexandria, VA, serving the Blue and Yellow Lines (CE1978).

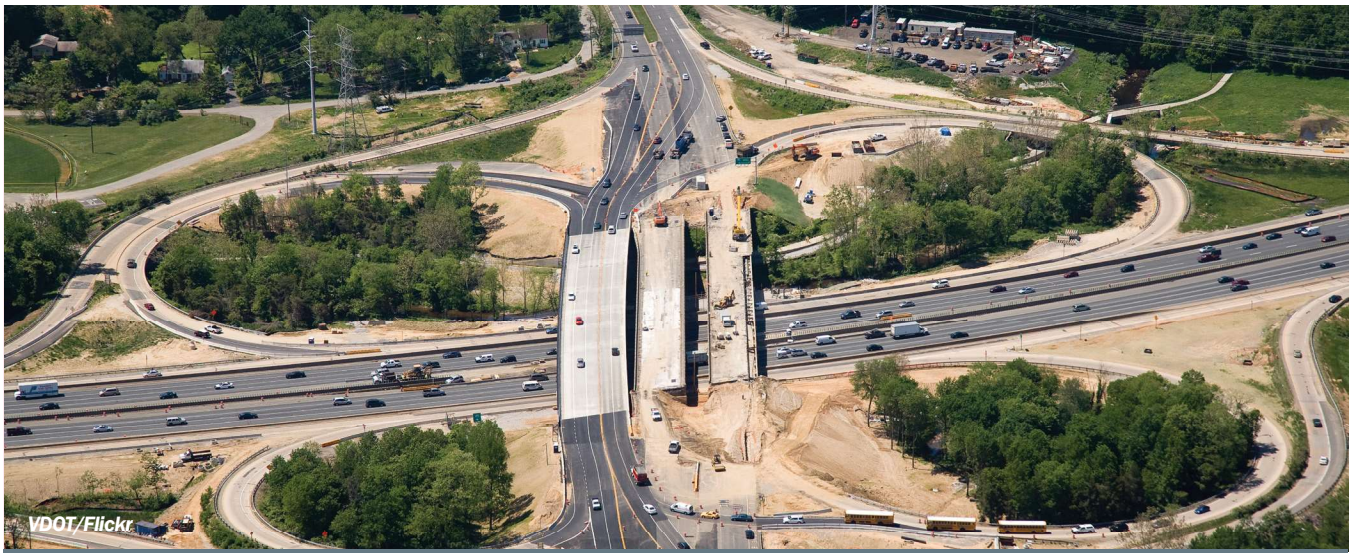


Provide More Telecommuting and Other Options for Commuting to take advantage of the many jobs suitable for teleworking, provide employees with transit and nonmotorized travel benefits, and disincentivize commute parking**.** The financially constrained element of Visualize 2045 includes funding for travel demand management programs such as the TPB's Commuter Connections program. Such programs encourage and incentivize telework and transit use through employer-provided subsidies, among other actions. They help push the region to more rapidly adopt alternative transportation strategies to reduce vehicle miles traveled and relieve congestion.

When considering other options for commuting, this initiative also calls for reducing solo car trips. Example projects include the Pennsylvania Avenue SE project (CE3654) in the District of Columbia which will build bike lanes past the Eastern Market Metro Station and provide cyclist access to the Anacostia River and Metropolitan Branch trail. In Dumfries, VA, agencies are expanding intercity passenger rail service by constructing the VRE Potomac Shores station (CE2831) which includes the Arkendale to Powells Creek Third Track project.

Expand the Express Highway Network strategically, in an environmentally sensitive manner, to create a network that connects much of the region, featuring express bus systems and allowing carpools and vanpools to be exempt from tolls.

Visualize 2045's financially constrained element includes several major projects that support this initiative: High-Occupancy Toll (HOT) lanes on the northern portion of I-495 in Virginia (CE2069). This project includes express toll lanes with toll-free travel for high-occupancy vehicles. Express bus service will also run on the express lanes. There are also HOT lane ramp projects on I-95 including Opitz Road (CE3697) and Russel Road (CE3556). The project list also includes adding dynamically-priced toll lanes along I-495 in Maryland on which carpool/vanpools of three or more occupants will ride free and I-270 (T6432).



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Improve Walk and Bike Access to Transit. Removing barriers to walking and biking to transit helps to fully utilize the investments already made in transit by encouraging more people to ride. An example of a project in the financially constrained element that improves transit access is the Old Cameron Run Trail project (CE3618) in the City of Alexandria that supports improved walk and bike access to the Eisenhower Avenue Metrorail Station. This project will complete a segment of the National Capital Trail Network. Also, expanding the network of dedicated bicycle lanes in the District of Columbia will allow more people to bicycle for their daily trips and connect to Metro and other transit options. The East Capitol Street Corridor Mobility and Safety Plan (T6315) in Ward 7 will improve pedestrian and bicycle mobility to Metrorail stations and bus stops.

Many bicycle and pedestrian improvements that are documented in the **TPB Bicycle & Pedestrian Plan** are not included in the financially constrained portion of the region's long-range transportation plan because they are typically not large enough to be considered "regionally significant" to impact the Air Quality Conformity analysis. Such improvements are often incorporated into roadway or transit projects of the plan but are not necessarily referenced in project titles. However, Visualize 2045 calls attention to other ways that the TPB promotes and supports improvement of walk and bike access to transit.

Complete the National Capital Trail Network to create an extensive network of trails that provides walk and bicycle access to jobs and other activities by connecting communities across the region to Activity Centers. Most of the upgrades to existing trails and new trails that need to be built to complete the National Capital Trail Network do not meet the requirements for inclusion in the constrained element of Visualize 2045 because the trails will not significantly impact Air Quality Conformity.

However, some pieces of the National Capital Trail Network are associated with other projects in the financially constrained element of the plan – once the Purple Line is completed, the portion of the National Capital Trail Network between Bethesda and Silver Spring will be vastly improved. The South Capitol Street Trail project in the District of Columbia (T6114) will construct a paved bicycle and pedestrian trail along the street. It is one of the biggest missing links in the National Capital Trail Network that will connect the Anacostia River Trail and Frederick Douglass Memorial Bridge with the Woodrow Wilson Bridge, National Harbor, and Mount Vernon Trail. As part of the VA Route 123 widening (CE1784) in Prince William County, there are planned segments of pedestrian and bicycle facilities along segments of the trail.

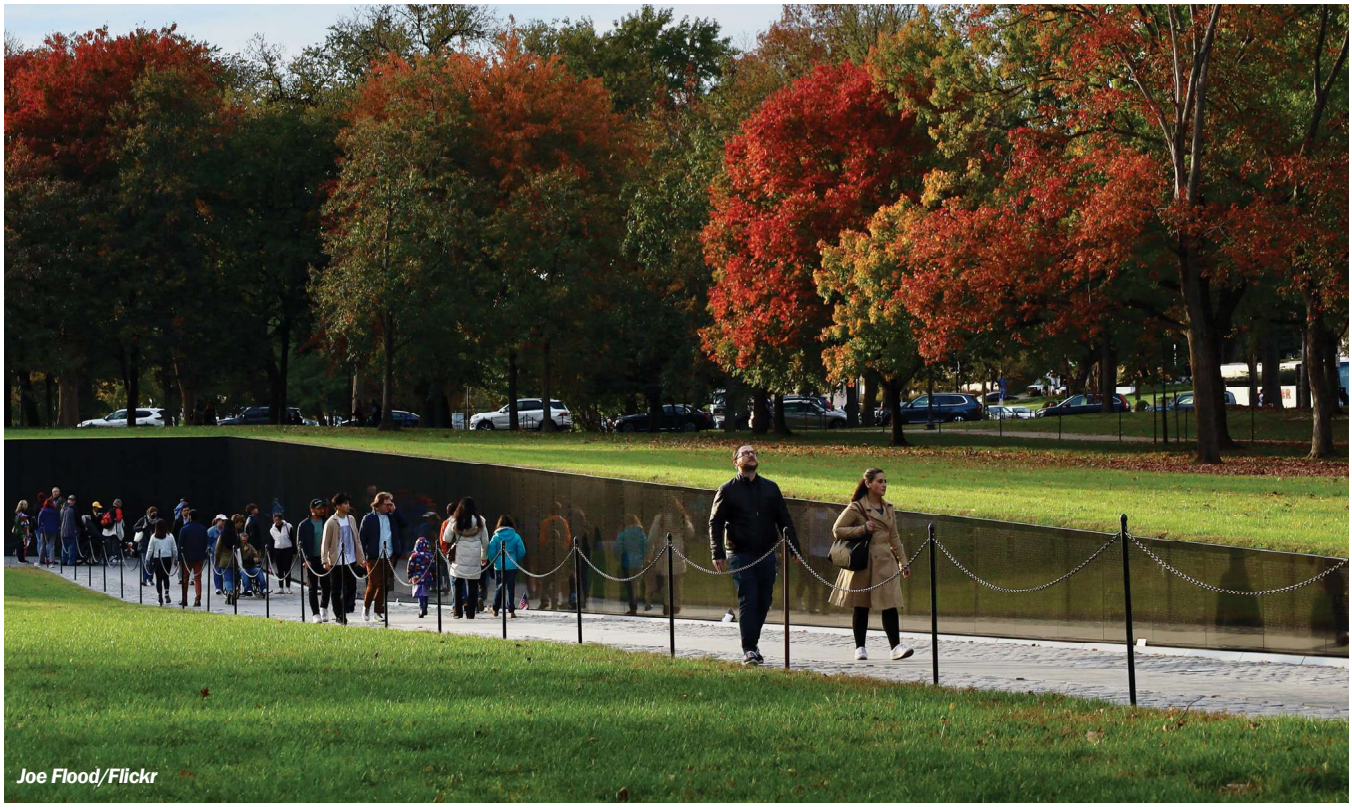
Federal Planning Factors

The states and MPOs are required to consider the federal planning factors of MAP-21 and the FAST Act. The following table notes how many projects align with each of these factors. The solicitation asked project sponsors which factors their projects support. For example, 314 projects support economic vitality, according to project sponsor responses.

Table 7.9: Federal Planning Factors — Project Sponsor Responses

ECONOMIC VITALITY	SAFETY	HOMELAND SECURITY	ACCESSIBILITY/ MOBILITY PEOPLE	ACCESSIBILITY/ MOBILITY FREIGHT	ENVIRONMENT
314	277	142	315	185	209

INTEGRATION/ CONNECTIVITY	MANAGEMENT AND OPERATION	PRESERVATION	RESILIENCY AND STORMWATER IMPACT	TOURISM
257	239	131	93	93



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