



VIRGINIA RAILWAY EXPRESS SYSTEM PLAN 2050

BENEFITS & CAPITAL INVESTMENTS



SYSTEM PLAN OVERVIEW

The System Plan helps VRE plan for the future. The Plan outlines general strategies for when, where, and how VRE trains will operate in the future and the station, track, and rolling stock investments that will be needed by 2050.

VRE's last System Plan was adopted in 2014, and the world has changed significantly since then. System Plan 2050 responds to changes in regional travel patterns, including things like telework and continued regional growth. It also responds to the "Transforming Rail in Virginia" initiative - a \$4B state-led program to expand passenger rail as a viable transportation choice.

A GUIDING VISION FOR VRE

VRE developed and analyzed four long-term scenarios for future service and operations, each presented a distinct vision for service, system infrastructure, and connections to the broader transportation network that VRE could pursue between 2025 and 2050, and beyond. Each had certain characteristics that align with the overall System Plan vision and goals.

The recommended scenario envisions a future with major enhancements to VRE service, enabling the system to evolve from a weekday commuter-focused service to seven-day-a-week and all-day service. Key aspects of the recommended scenario are described below:

Hours & Days of Operation
Weekends + later trips in the eve-

Weekdays
~5am-10pm

Saturdays
~6am-10pm

Sundays
~7am-9pm

Number of Trains Per Day
More trains on each line:

58 trains/line Monday - Friday

34 trains/line Saturday

30 trains/line Sunday/Holidays

Train Frequency & Direction
Bi-directional throughout day and week:

Every 20-30 min in both **peak and off-peak directions**

Every hour off-peak and weekends in **both directions**

Express Service
Skip-stop ride options

About **one express train per peak hour**, weekdays (21% of trains)

SYSTEM PLAN 2050 GOALS

Sustainability & Resiliency

Safety & Reliability

Regional System Integration & Equitable Service

Market Growth & Financial Stability

SYSTEM PLAN VISION

VRE will grow to serve the region as the transportation service of choice, creating meaningful connections and economic opportunities in a safe, sustainable, reliable, and equitable manner. In order to keep being a relevant part of the transportation network, and providing a viable transportation option, VRE needs to adapt to expected future conditions. These changes come with a variety of expected personal and societal benefits. Of course, they also come with new infrastructure needs and costs.



KEY EXPECTED BENEFITS OF THE 2050 SERVICE VISION

Reduction in Vehicle Miles Traveled

51,188,000
vehicle miles avoided

Annual Travel Delay Avoided

64,000
hours of delay avoided

Increase in VRE Passengers (2050)

634,800
new VRE passengers annually

Annual CO2 Avoided

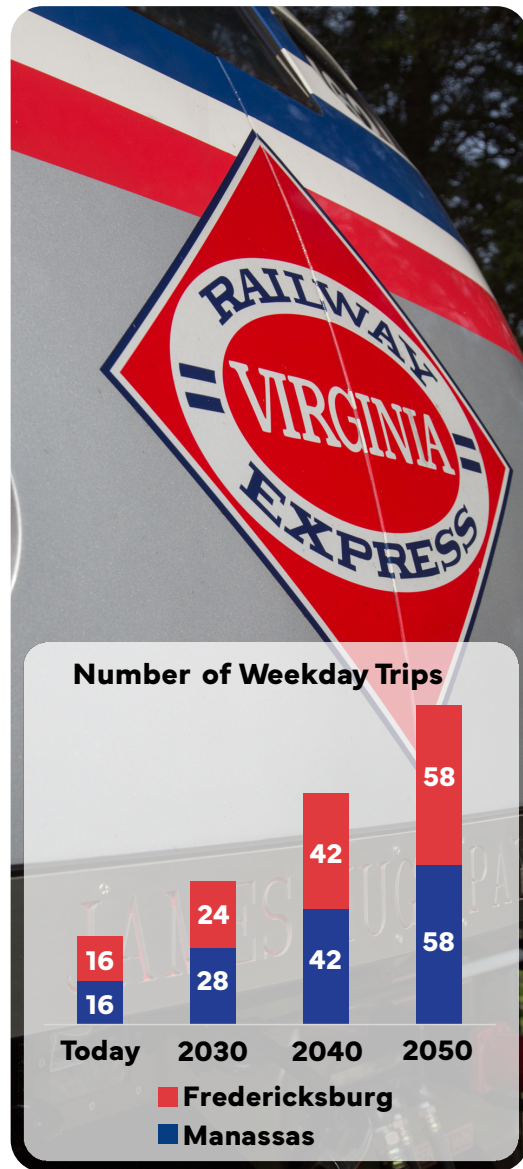
4,100
tons of CO2 emissions avoided

Annual Vehicle Operating Cost Savings

\$16,744,000
in personal vehicle cost savings

Average Daily Riders

Year	2024	2030	2050
Average Daily Riders	7,755	15,321	28,100 (+262%)



CAPITAL COSTS REQUIRED FOR THE 2050 SERVICE SCENARIO

Improvements	Fredericksburg Line	Manassas Line	Cost \$YOE
Platform/Station	L'Enfant, Crystal City, Alexandria, Brooke, Woodbridge, Fredericksburg, Leeland, Rippon, and Franconia-Springfield	Backlick Road, Broad Run, and Manassas Stations	\$589.9 M
Parking	Crossroads MSF/AEW, Leeland Road, Fredericksburg, Brooke, Rippon, and Woodbridge Stations	Manassas Park, Broad Run, and Manassas Stations	\$314.3 M
Track	Crossovers (up to 10)	Broad Run Lead Track, Crossovers (up to 8)	\$163.1 M
Fleet Replacement	20 Locomotives and 100 Railcars		\$801.0 M
Fleet Expansion	99 trailer cars, 7 cab cars, and 11 locomotives by 2050		\$857.6 M
Reoccurring/Other	Yard Expansions at Seminary and Crossroads, Recurring Maintenance, and Misc. Improvements		\$587.8 M
Total			\$3,313.7 M



PLANNED 2050 SYSTEM MAP WITH POTENTIAL CONNECTIONS

IN THE SHORTER TERM: TODAY TO 2030



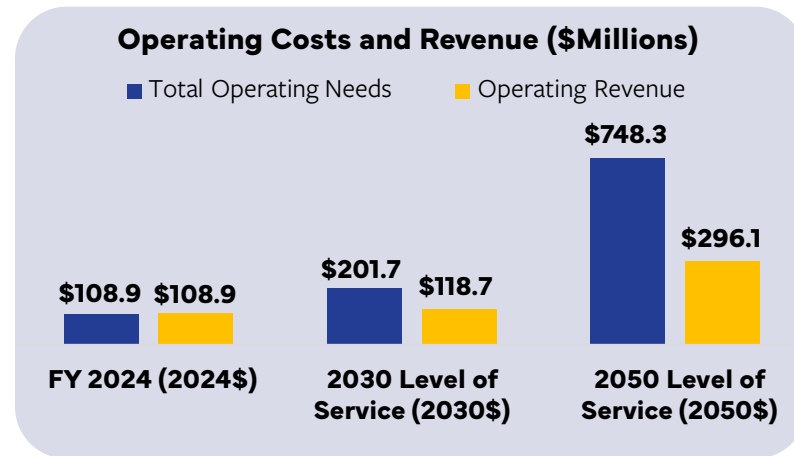
SERVICE MAP FOR 2050

The 2050 Service Vision maintains the current VRE service area, terminating at the Broad Run station on the Manassas Line and the Spotsylvania station on the Fredericksburg Line.

However, the 2050 Scenario emphasizes improved connecting service to Manassas and Fredericksburg stations via feeder buses. These enhanced connections would effectively extend VRE's two-seat journey service area. Connecting buses could bring riders to and from destinations in Fauquier and Culpeper Counties on the Manassas Line and Spotsylvania, Caroline, and Hanover Counties on the Fredericksburg lines, where they could complete a trip by rail.

OPERATING COSTS

With more rail service and added connecting bus service, VRE's costs will increase. While the operating revenue is also projected to increase, there is currently a gap between projected need and revenue, beginning before 2030.



TRANSFORMING RAIL IN VIRGINIA

The goals of the Transforming Rail in Virginia (TRV) initiative are to add rail capacity and service and improve transportation choices for the Commonwealth.



TRV is led by the Virginia Passenger Rail Authority. One key element of TRV that greatly benefits VRE service is completion of the Long Bridge Project, anticipated in the early 2030's, which will increase rail capacity over the Potomac River and alleviate a major bottleneck for passenger and freight rail service.

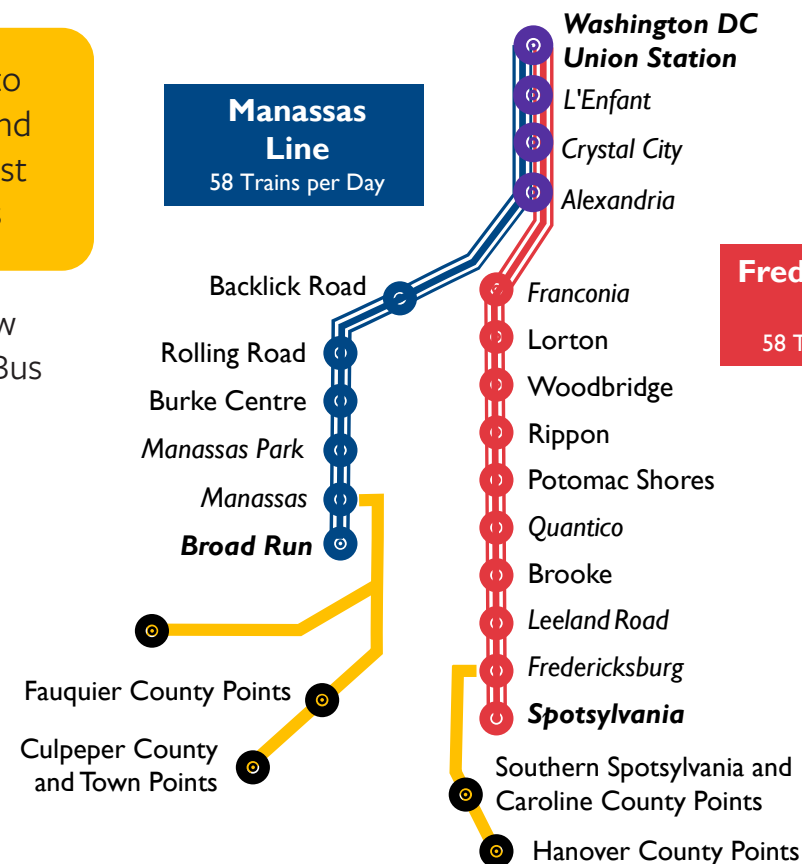
FIRST STOP: 2030

Utilizing the expanded TRV rail infrastructure, VRE is moving forward with plans to expand service and stations throughout the VRE system by the end of the decade.

This near-term service plan identifies VRE service enabled by the completion of TRV Phase 1 and 2 rail improvements. It is designed to be implementable with minimal additional investment above TRV-planned and -funded infrastructure.

Buses connect to all express VRE and Amtrak Northeast Regional trains

Potential New Connecting Bus



CHARACTERISTICS OF THE NEAR-TERM PLAN

- Up to **63% more daily round trips** on weekdays
- Trains in **both directions** in the AM and PM
- Weekend service**
- Longer or additional platform edges** at select stations
- Express service**
- New infill station** at Potomac Shores