SYSTEM PLAN 2050
DRAFT PLAN REVIEW

June 7, 2024

TPB Technical Committee Meeting

VRE™

System Plan History and Purpose

A transit agency long-range plan establishes an operations vision—a service concept we can work towards

The world today is very different than in 2014!

Communities are changing and growing

- The Northern Virginia population is projected to grow by 35%.
- The Fredericksburg area is projected to grow by 65%.

Telework remains a fixture of post-pandemic work

2019: **59%** of VRE riders indicated they did not telework at all
2022: **37%** said they do not telework at all

Transforming Rail in Virginia to add rail capacity

Around 2030, new infrastructure, partially funded by VRE/regional sources, will allow VRE to run 63% more service than today.

Northern Virginia does not end at the Occoquan River

Transit improvements for users south of our region benefit the both VRE regions

System Plan 2050 Vision

VRE will grow to serve the region as the transportation service of choice, creating meaningful connections and economic opportunities in a safe, sustainable, and equitable manner.

2050 System Plan Goals

1. Safety and Reliability

2. Market Growth and Financial Stability

3. Regional System Integration and Equitable Service

4. Sustainability and Resiliency

System Plan 2050 Update

Phase 1
June – December 2022

- Coordination with peer agencies and stakeholders
- Vision and Goals development
- Ridership trend and potential new market analysis

Phase 2
January – October 2023

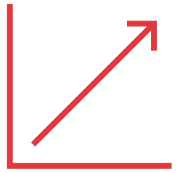
- Develop and screen future service scenarios
- Public surveys, stakeholder outreach, data collection
- Focus on 2030 near-term service planning and implementation

Phase 3
November – April 2024

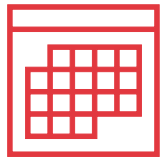
- Long-term 2050 service scenario refinement and screening
- Determine costs and funding needs for future operations and infrastructure
- ID of infrastructure constraints and new capital projects

In the Short Term: Today to 2030

VRE will move forward to expand service through the end of this decade, consistent with Transforming Rail in Virginia (TRV), with a service and investment plan that includes:



Running up to **63% more daily round trips** on weekdays

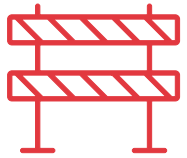


Running full weekend service (26 daily trains)

Running trains in both directions in the AM and PM

Changing stopping patterns to **allow express service**

Adding a **new infill station** at Potomac Shores



Adding platform edges at select stations

Lengthening platform edges at select stations

Expand yards at Broad Run and Crossroads

New mid-day storage at New York Ave. in D.C.

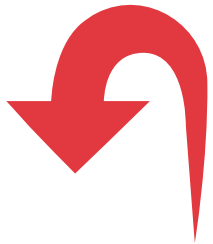
Your VRE in 2050: Recommended Scenario

Weekdays
5am-10pm
Saturdays
6am-10pm
Sundays
7am-9pm

Peak Direction: A train every 20 min.

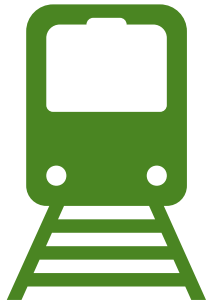
Reverse-Peak: A train every 30 min.

Every hour off-peak **in both directions and on Weekends**



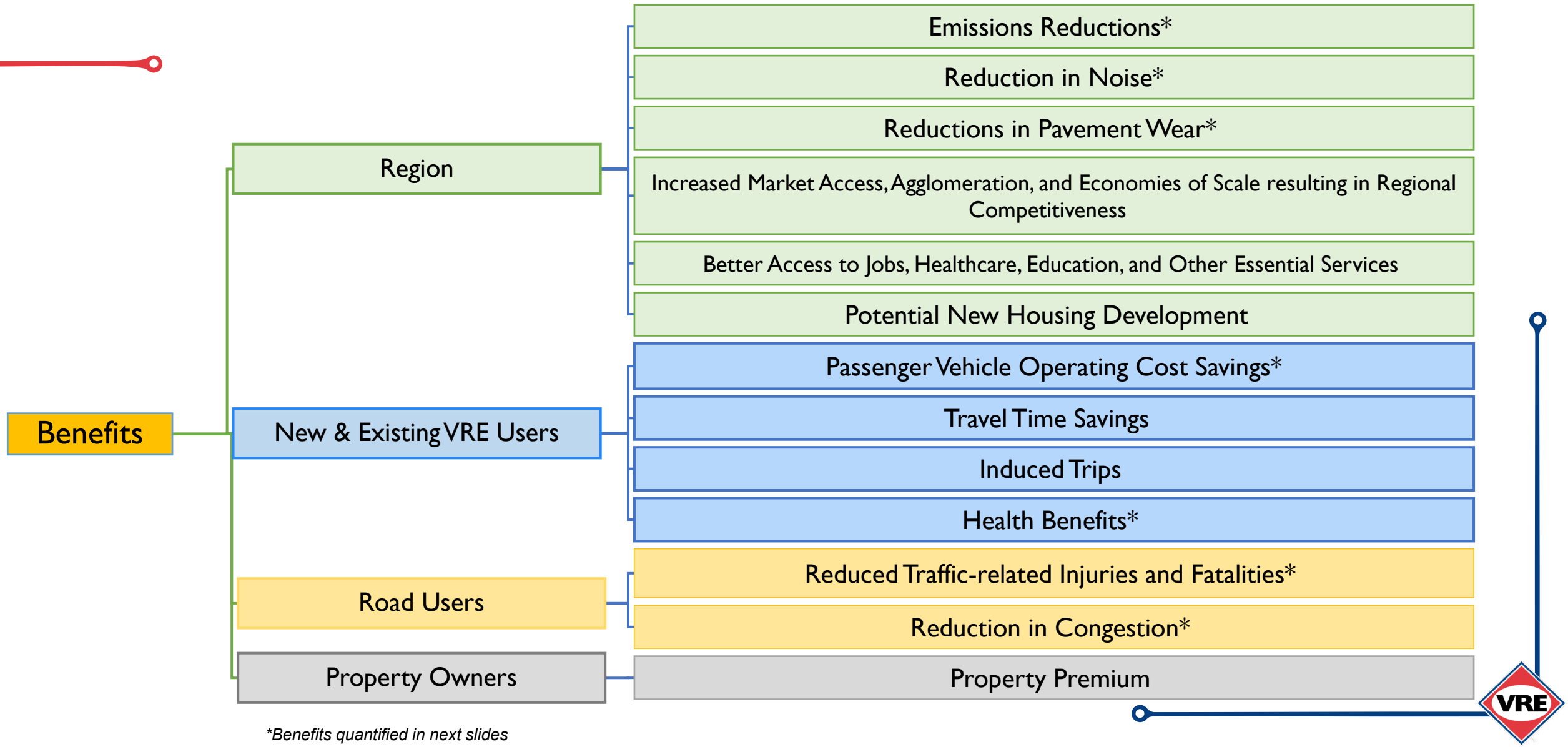
All trains run the full length of both lines

~1 express train **per hour**, weekdays (21% of trains)



29 round trips per line by 2050, almost **3x more** service than 2024

Benefits of VRE



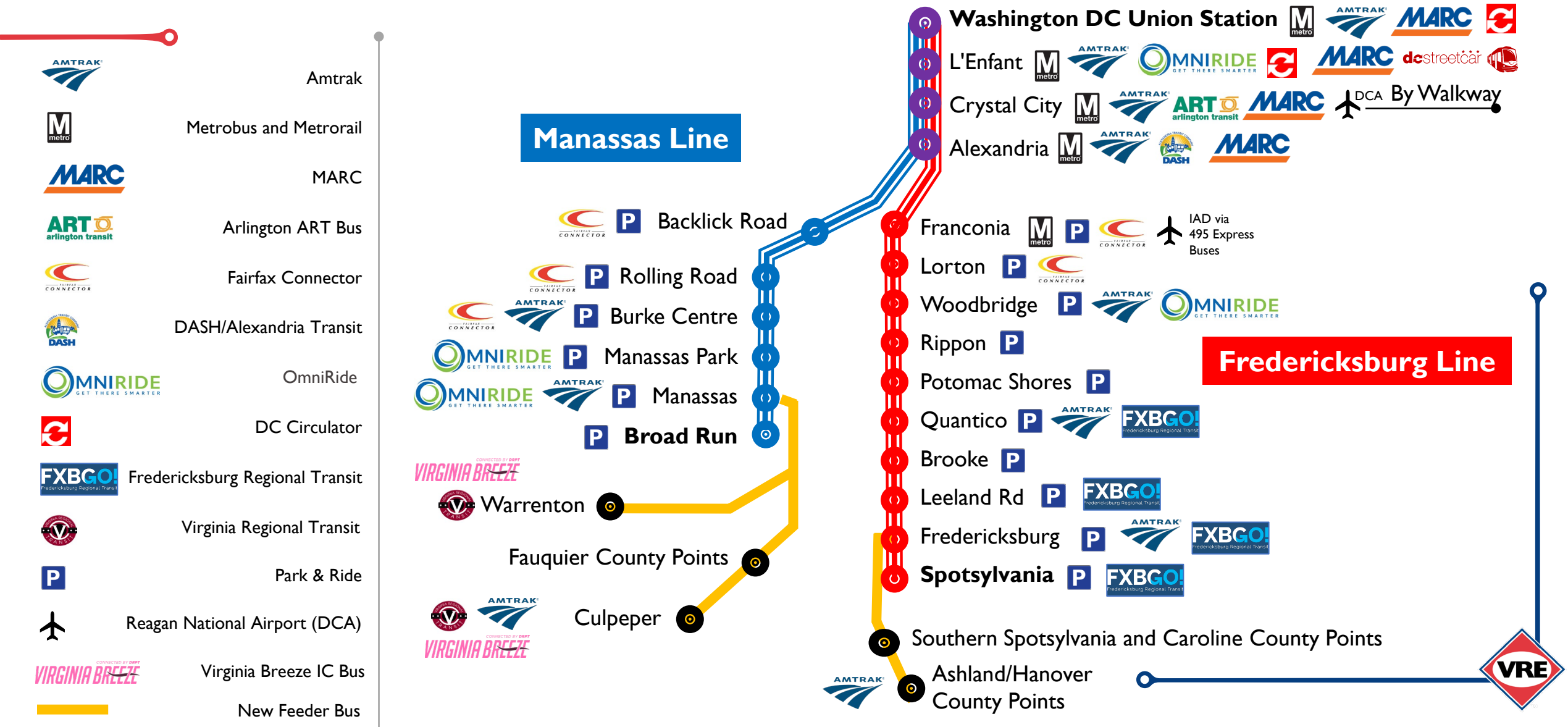
*Benefits quantified in next slides

Personal and Societal Benefits of VRE in 2050

All values are in 2050 (unless otherwise noted)	Induced trips (new to VRE)		All Trips	
	2030 Level of Service	2050 Level of Service	2030 Level of Service	2050 Level of Service
Annual VMT Reduction	5,446,000	19,469,000	18,283,000	51,188,000
Annual Vehicle Operating Cost Savings	$891,000	$3,184,000	$5,981,000	$16,744,000
Increase in Passengers from No Build (2050)	178,900	634,800	2,431,800	5,391,100
Annual CO2 Avoided (metric tons)	440	1,560	1,460	4,100
Annual Travel Delay Avoided (Hours)	N/A		47,000	64,000
Annual Freight Benefit of the RF&P Rail Corridor in 2030 (Spotsylvania to Alexandria)[1]	$157,160,000 (in 2020 $)			
I-95 Truck Trips Avoided in 2030[2]	4,180 daily truck trips on I-95 (End-to-end, this equals a lane of trucks from the Pentagon to past Exit 126 in Spotsylvania—57 miles)			

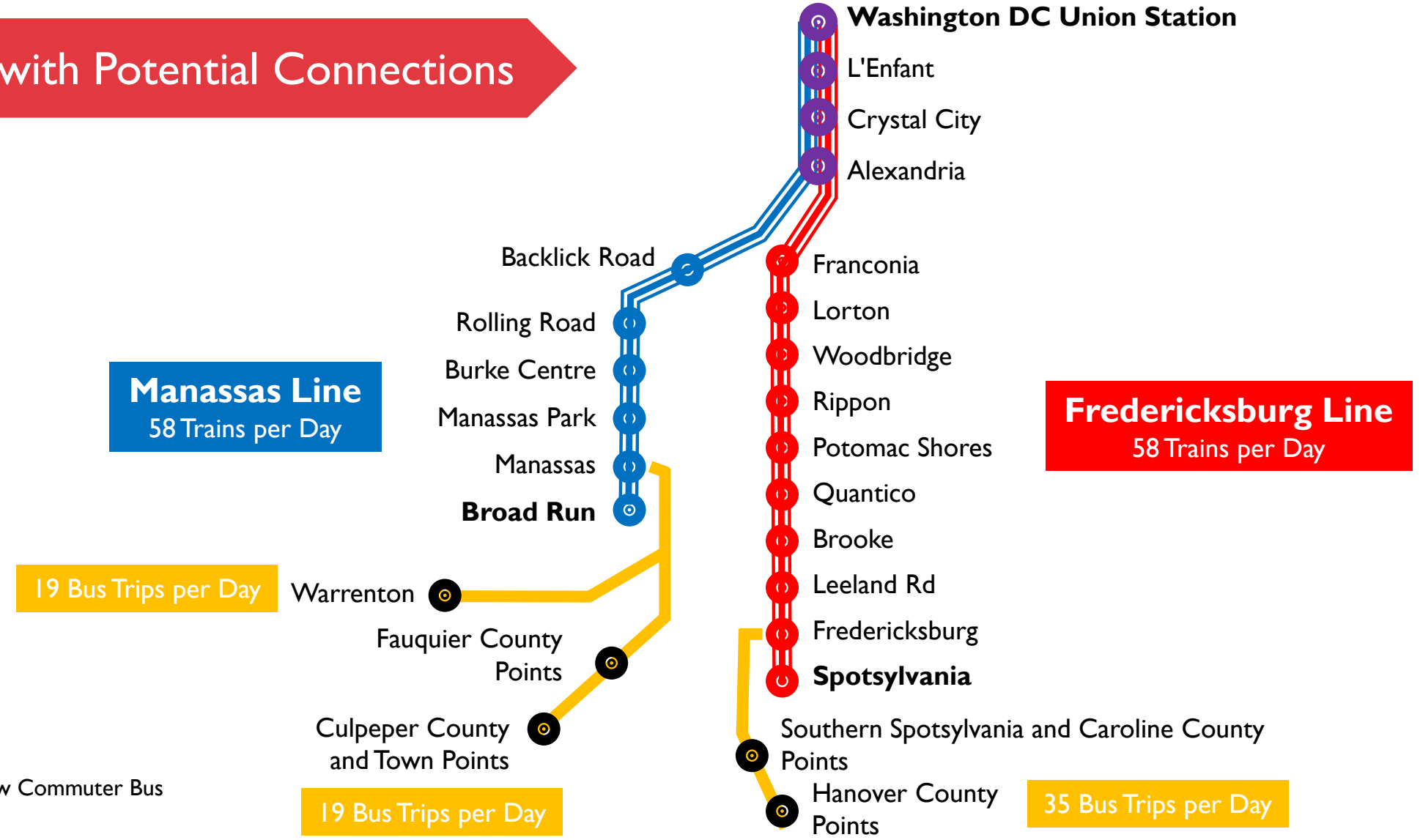
1: Source: DRPT 2022 Statewide Rail Plan
2: Average payload of a semi truck: 20.6 tons, typical length of a semi truck in VA: 72 ft

VRE as the Region's Spine in 2050



Recommended 2050 Service Scenario

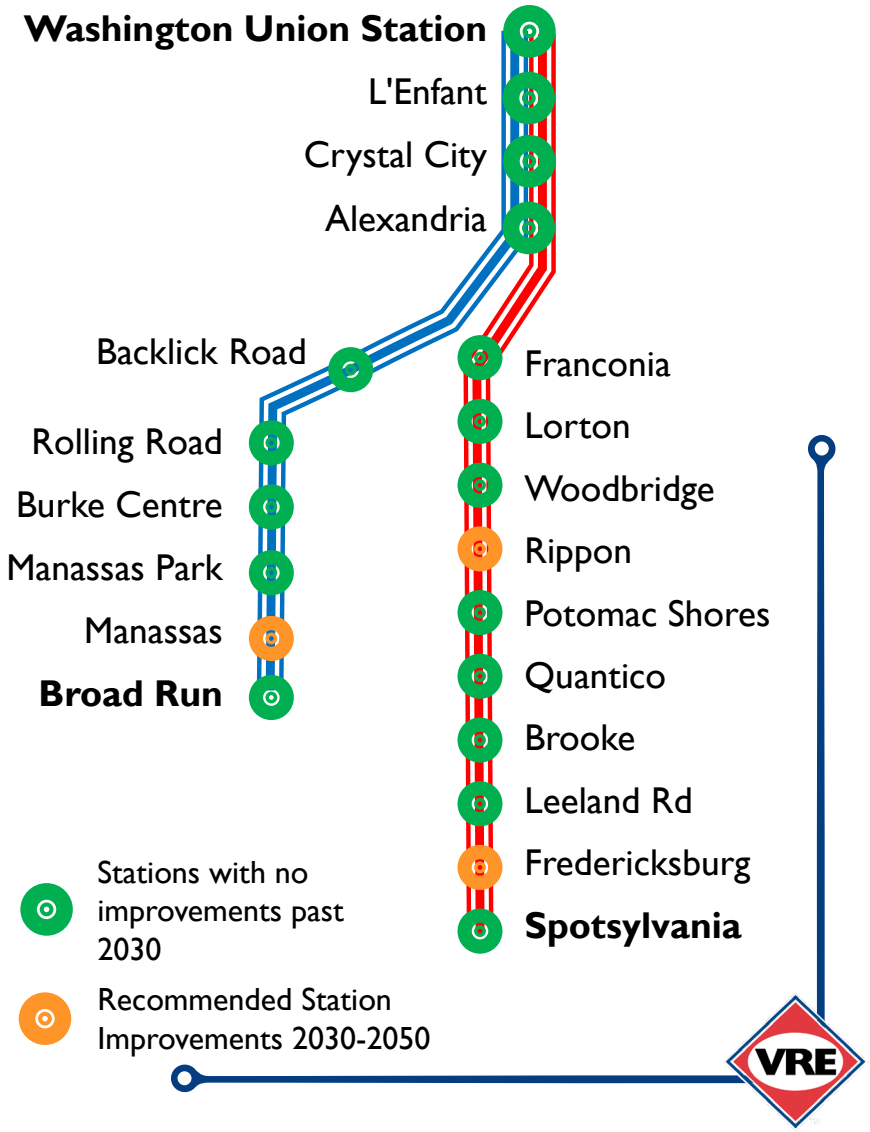
System Map with Potential Connections



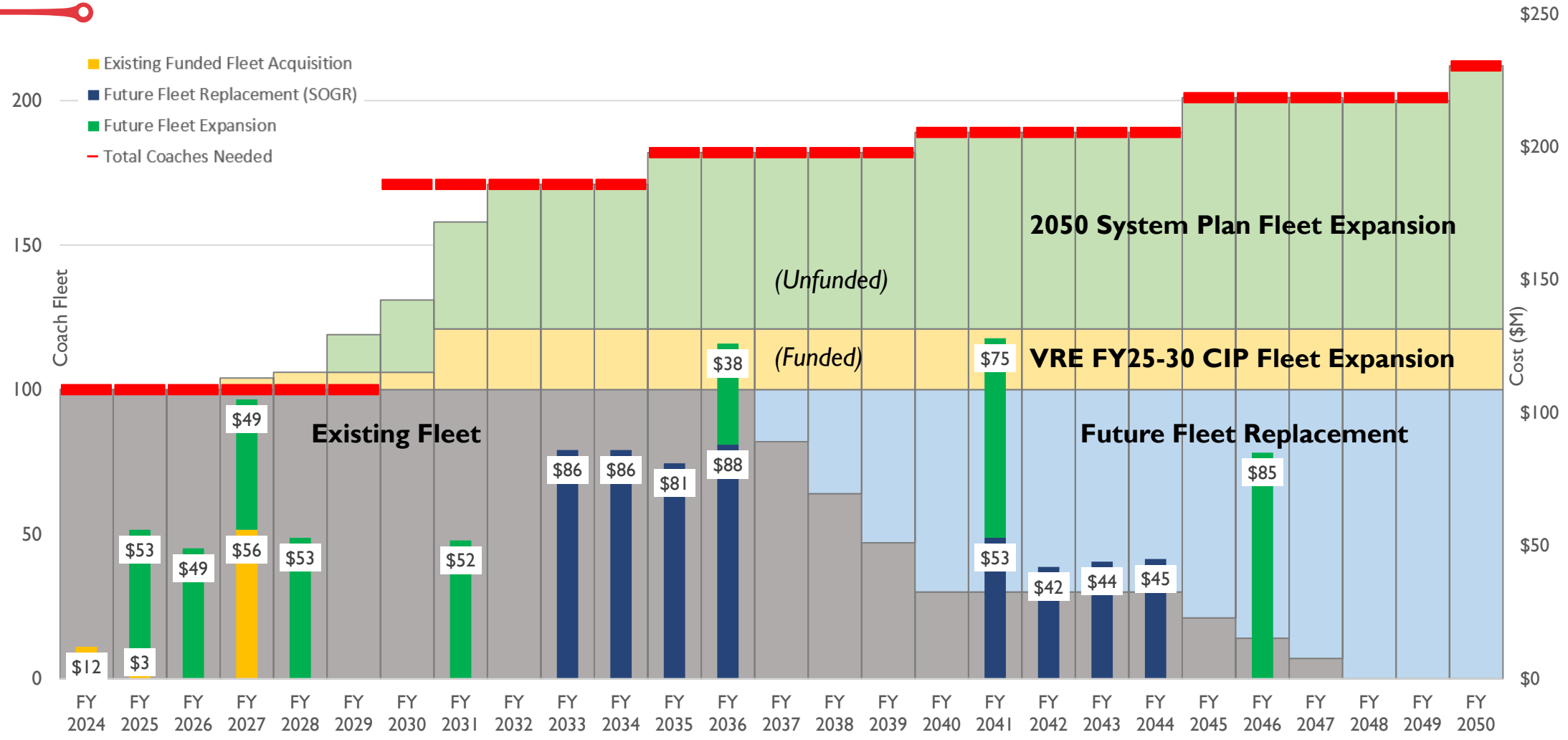
Minimum Infrastructure Requirements 2050

Improvements	Fredericksburg Line		Manassas Line		Cost 2024$
Platform	Fredericksburg Station Two Platform Extensions		Manassas Station New East Platform		$38,200,000
	Rippon Station Platform Extension				
Parking	Woodbridge	189 Spaces	Backlick Road	214 Spaces	$157,800,000
	Rippon	616 Spaces	Manassas	262 Spaces	
	Brooke	643 Spaces	Broad Run	35 Spaces	
	Leeland Rd	112 Spaces			
	Fredericksburg	650 Spaces			
Track	10 Crossovers near Springfield, Lorton, Rippon, Potomac Shores, Brooke, and Leeland Road stations		8 Crossovers near Backlick Road, Rolling Road, Burke Centre, Manassas Park, and Manassas stations		$163,600,000
	16,000 ft Track Construction		12,800 ft Track Construction		
			Broad Run Third Track		
Total					**$359,600,000**

- Platform: based on the proposed 2050 operating scenario and TRV Phase IV build conditions
- Parking: based on the 2050 station boardings and the existing and planned parking count at current auto access mode-share rates
- Track: based on the need for bi-directional operations in the TRV Phase IV build conditions
- All cost estimates are in 2024 dollars and are "fully loaded" costs

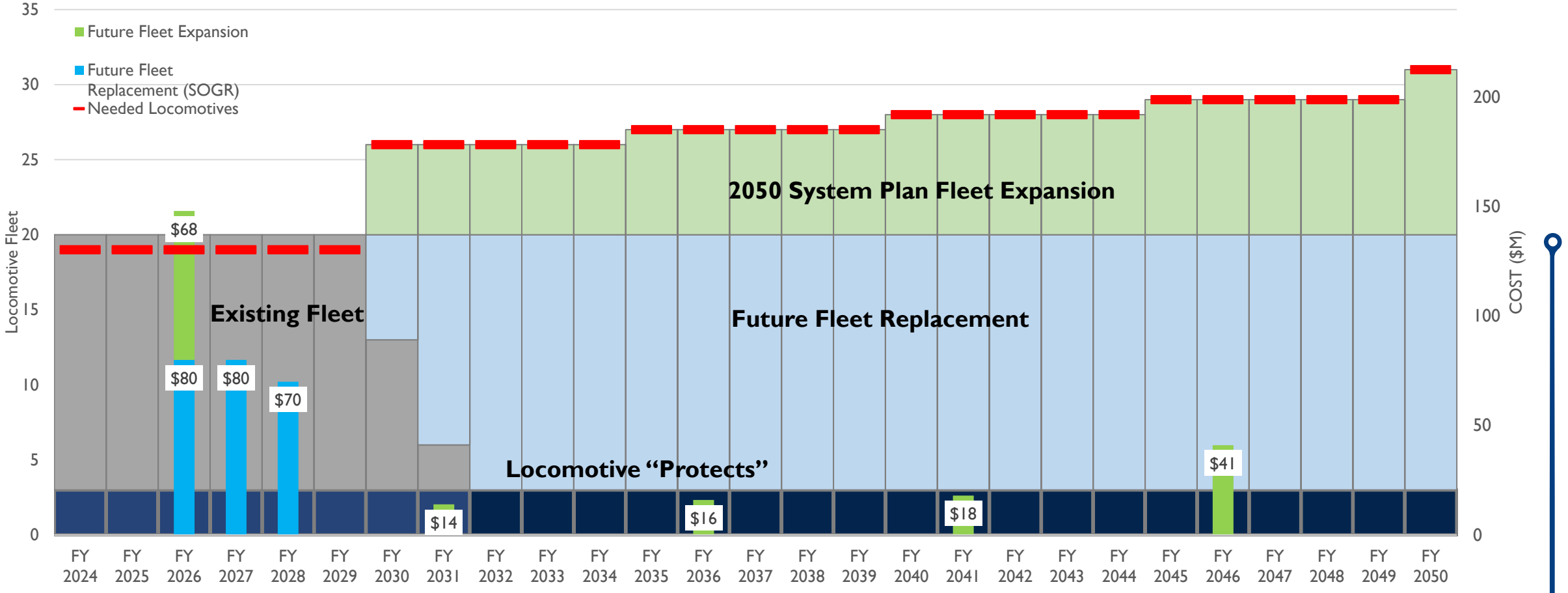


Capital Costs — Coach Fleet



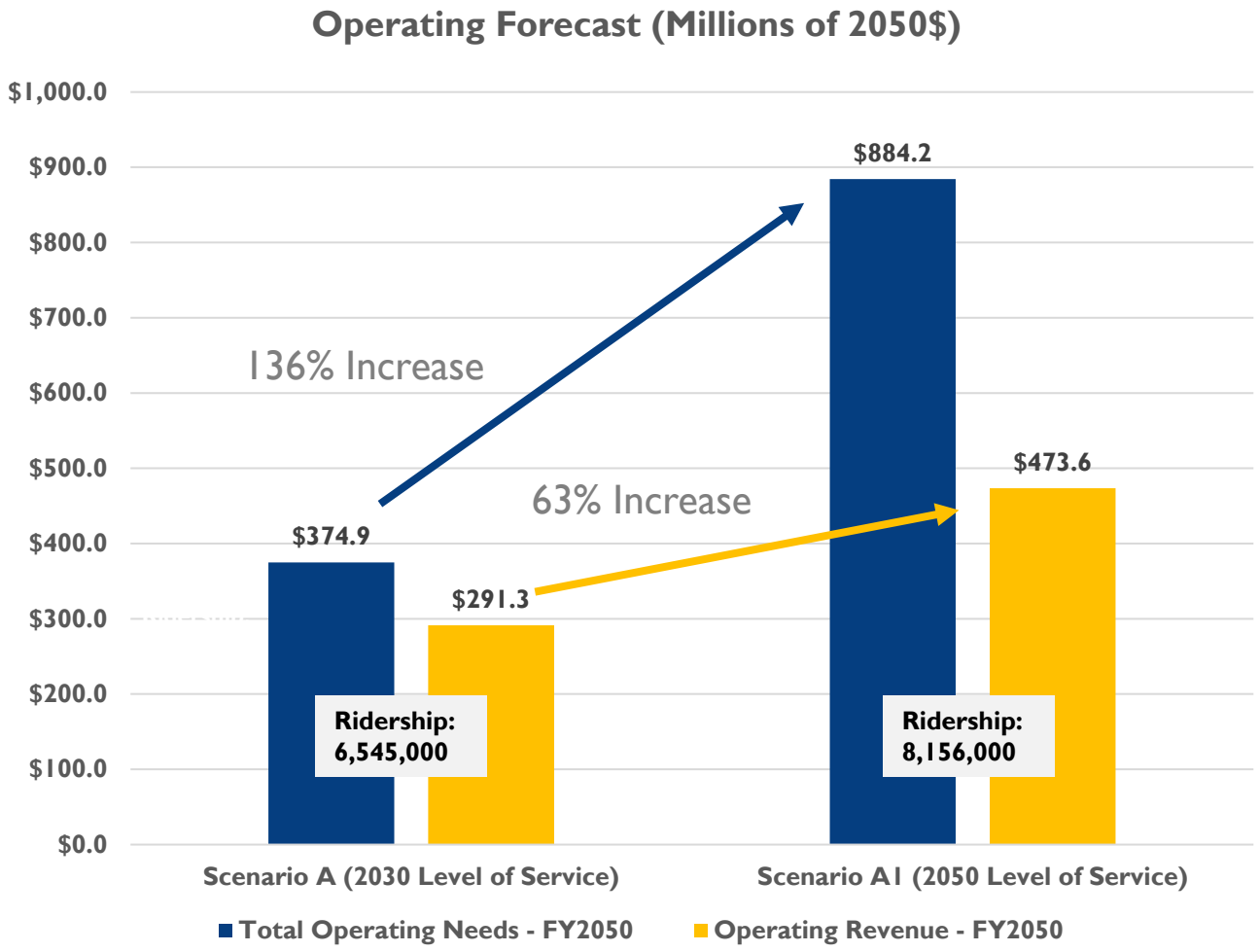
*All cost estimates are in the year of expenditure dollars

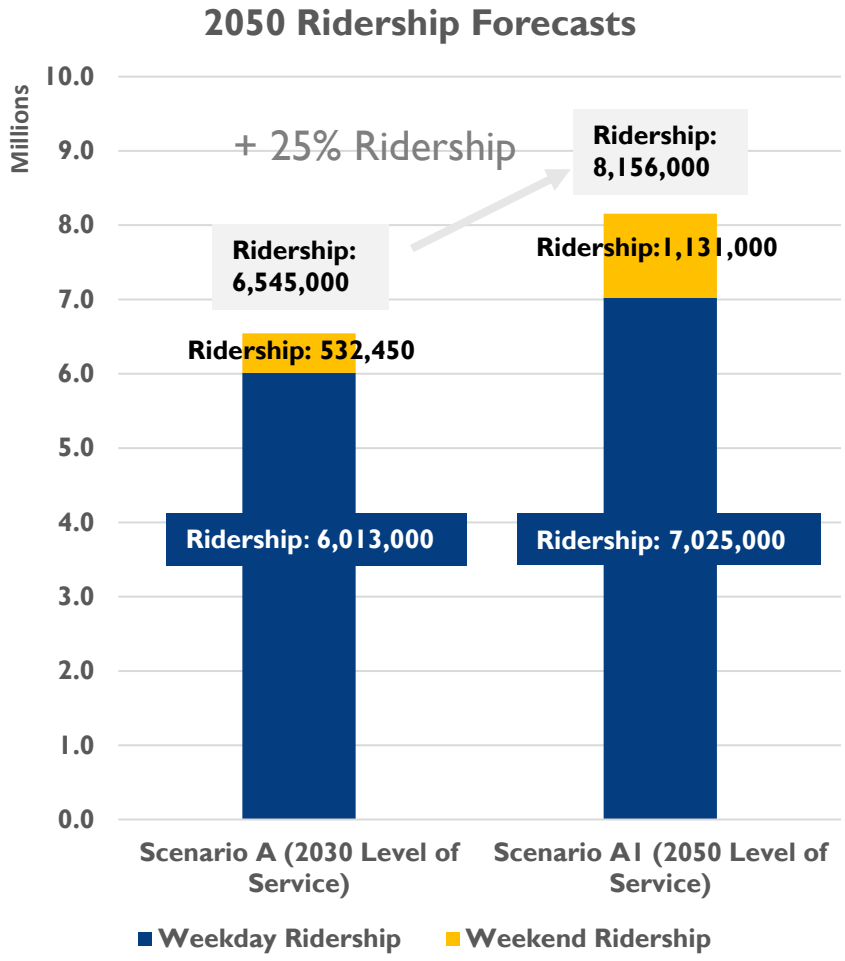
Capital Costs – Locomotive Fleet



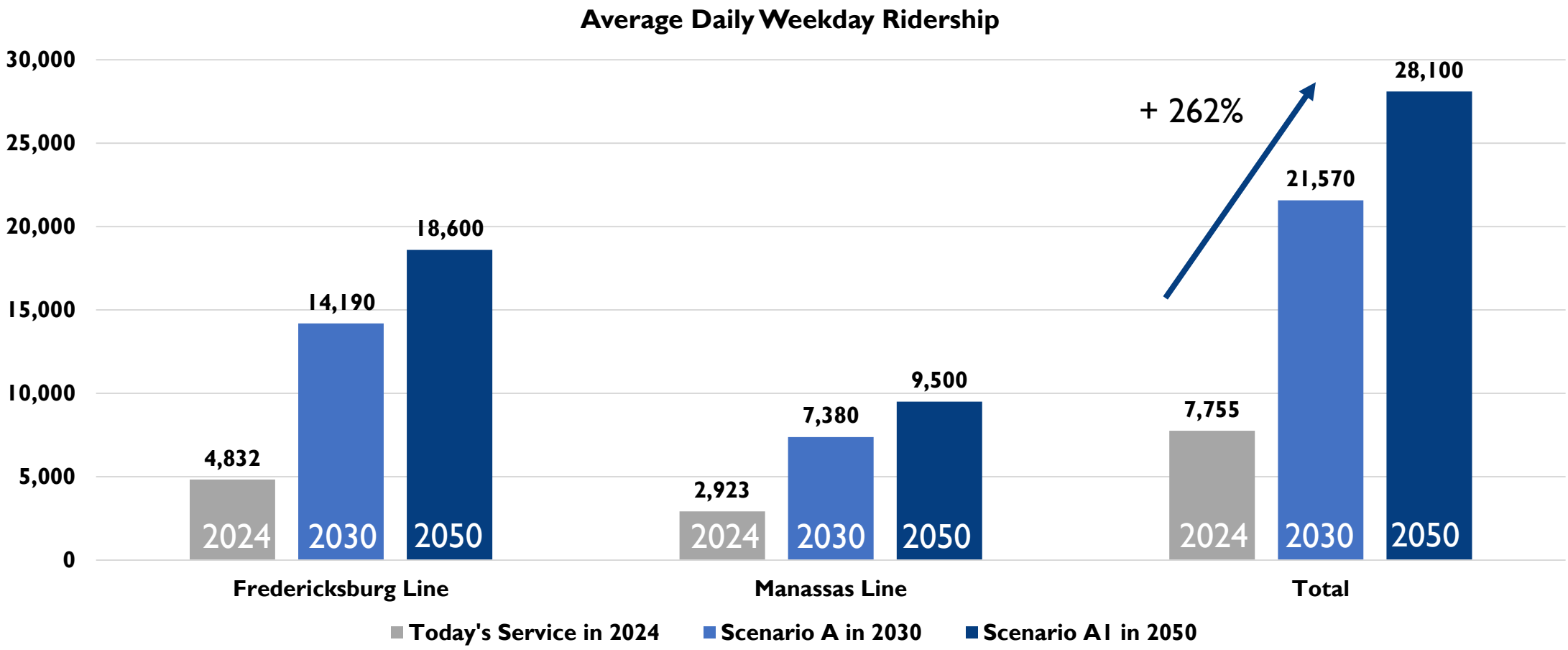
* Including 20% of spares in the locomotive fleet. Replacement costs include the cost of three (3) "protect" locomotive replacements. All cost estimates are in the year of expenditure dollars.

2050 Financial Forecasts: Operating





Average Daily Ridership Forecasts By Year



1: 2024 ADR as of March 1, 2024

NEXT STEPS

1. Continued member jurisdiction outreach
2. June 21st VRE Ops. Board Action
3. Return to NVTC/PRTC in July 2024