

# SYSTEM PLAN 2050 DRAFT PLAN REVIEW

June 18, 2024

Fairfax County Board Transportation Committee



# 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%.

Northern Virginia does not end at the Occoquan River

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



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.



# 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 I

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

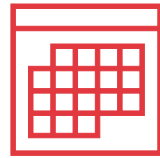
- Long-term 2050 service scenario refinement and screening
- Determine costs and funding needs for future operations and infrastructure
- ID of infrastructure constraints and new capital projects

# 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)



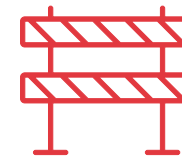
**Running trains in both directions** in the AM and PM



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.



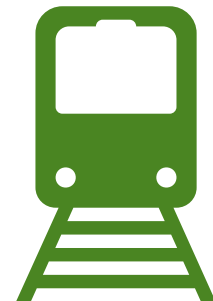
Every hour off-peak  
**in both directions**  
and on **Weekends**



**All trains run**  
the full length of  
both lines



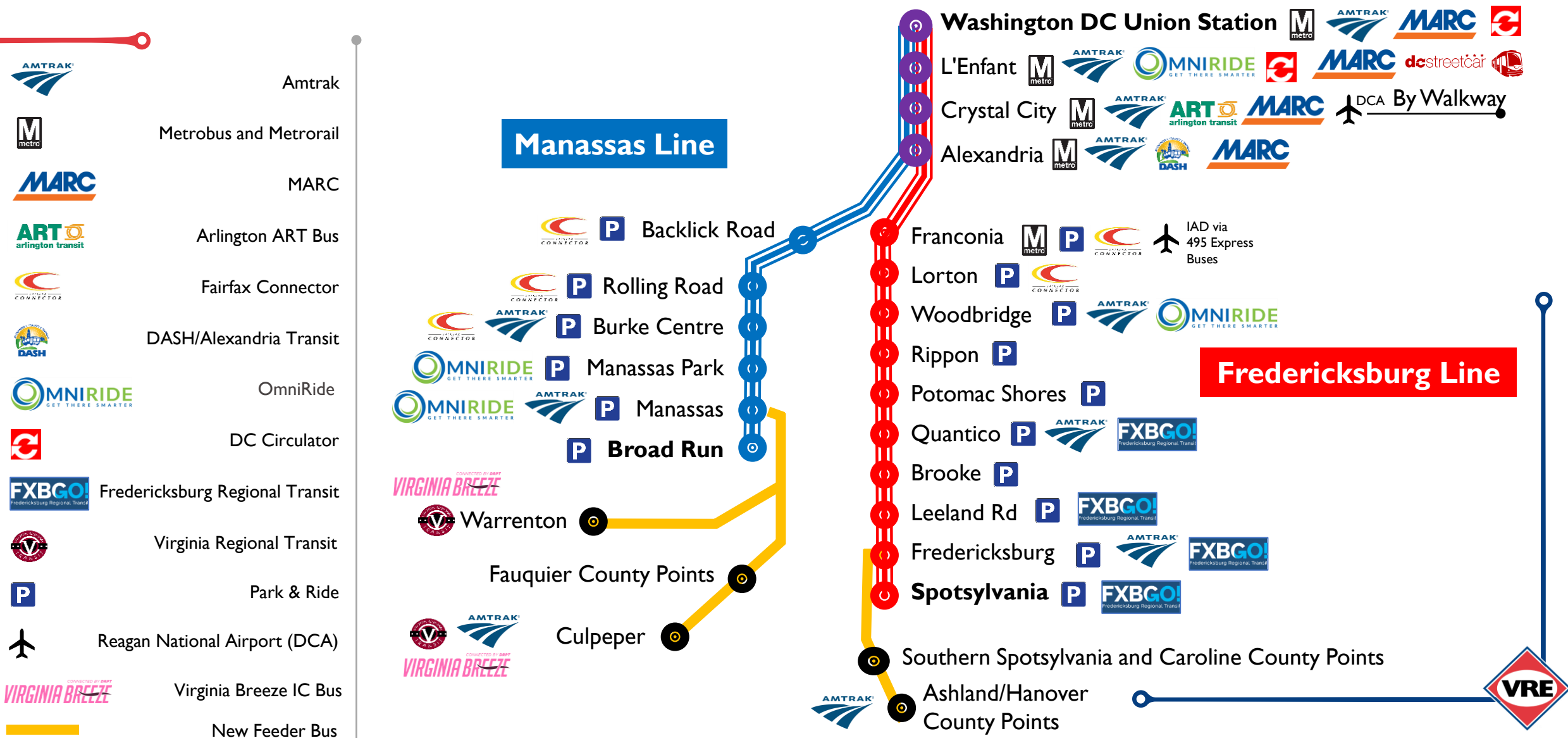
~1 express train **per**  
**hour**, weekdays (21%  
of trains)









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



# VRE as the Region's Spine in 2050



# 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) <sup>1</sup>		\$157,160,000 (in 2020 \$)			
I-95 Truck Trips Avoided in 2030 <sup>2</sup>		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

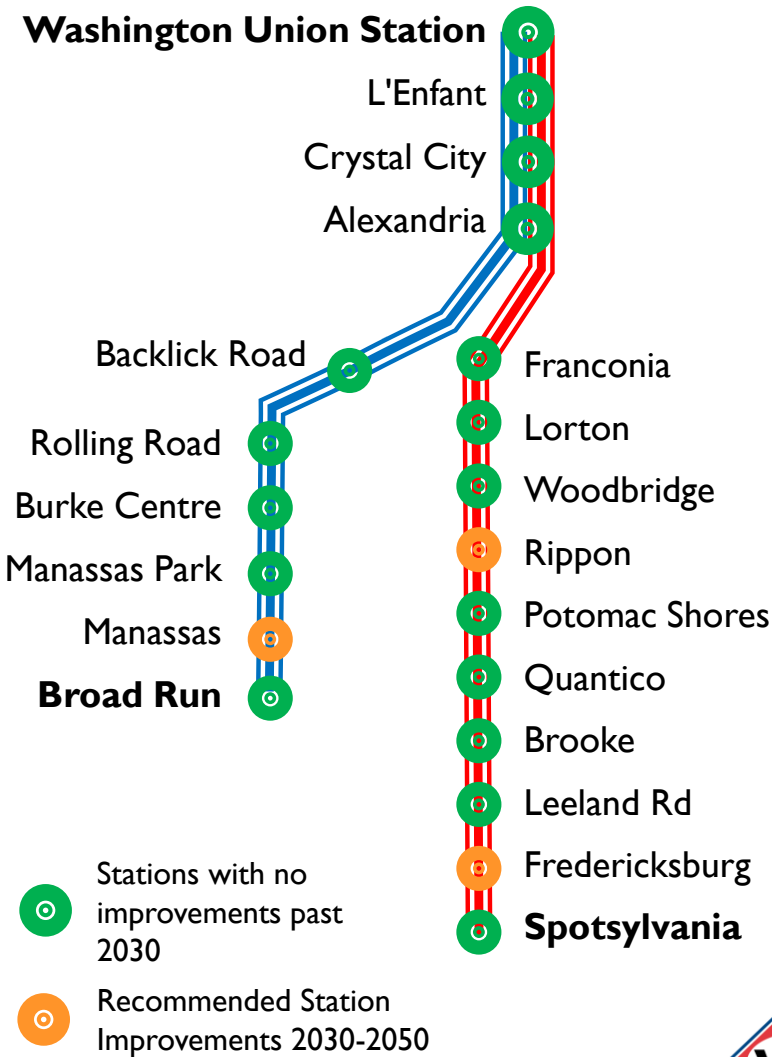
2: Average payload of a semi truck: 20.6 tons, typical length of a semi truck in VA: 72 ft



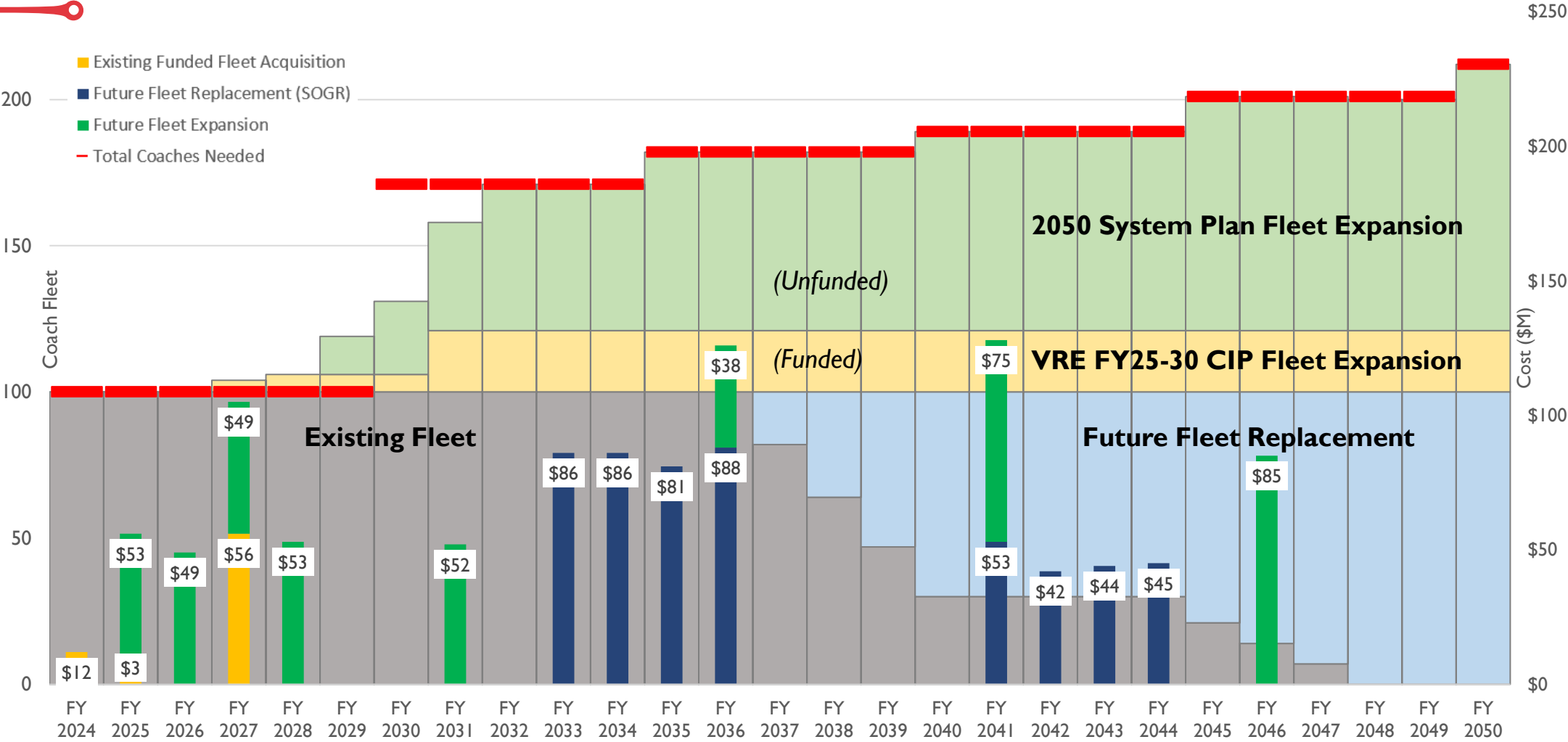
# Minimum Infrastructure Requirements 2050

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



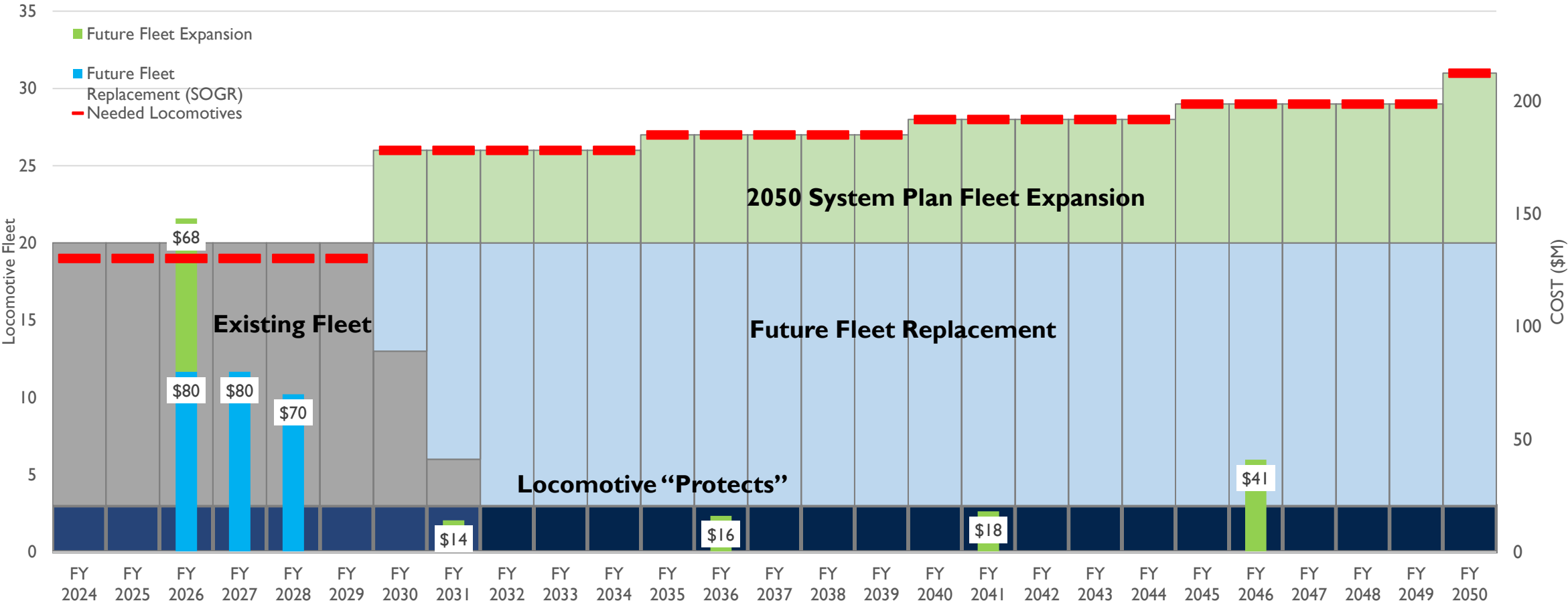
# Capital Costs — Coach Fleet



\*All cost estimates are in the year of expenditure dollars



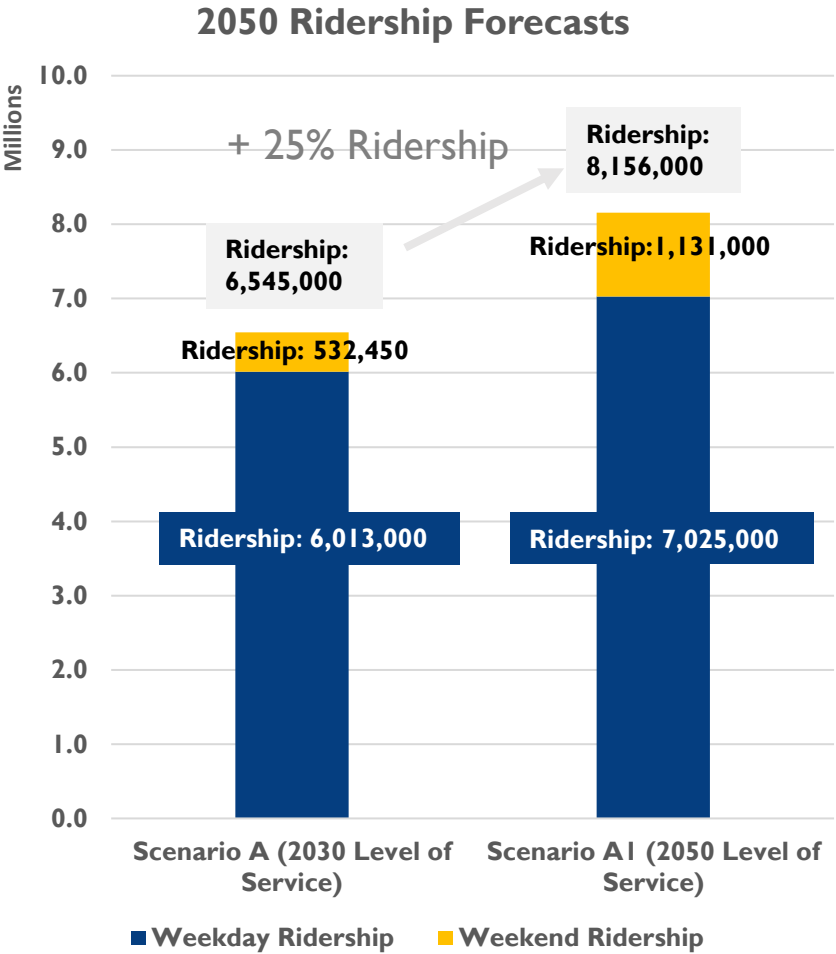
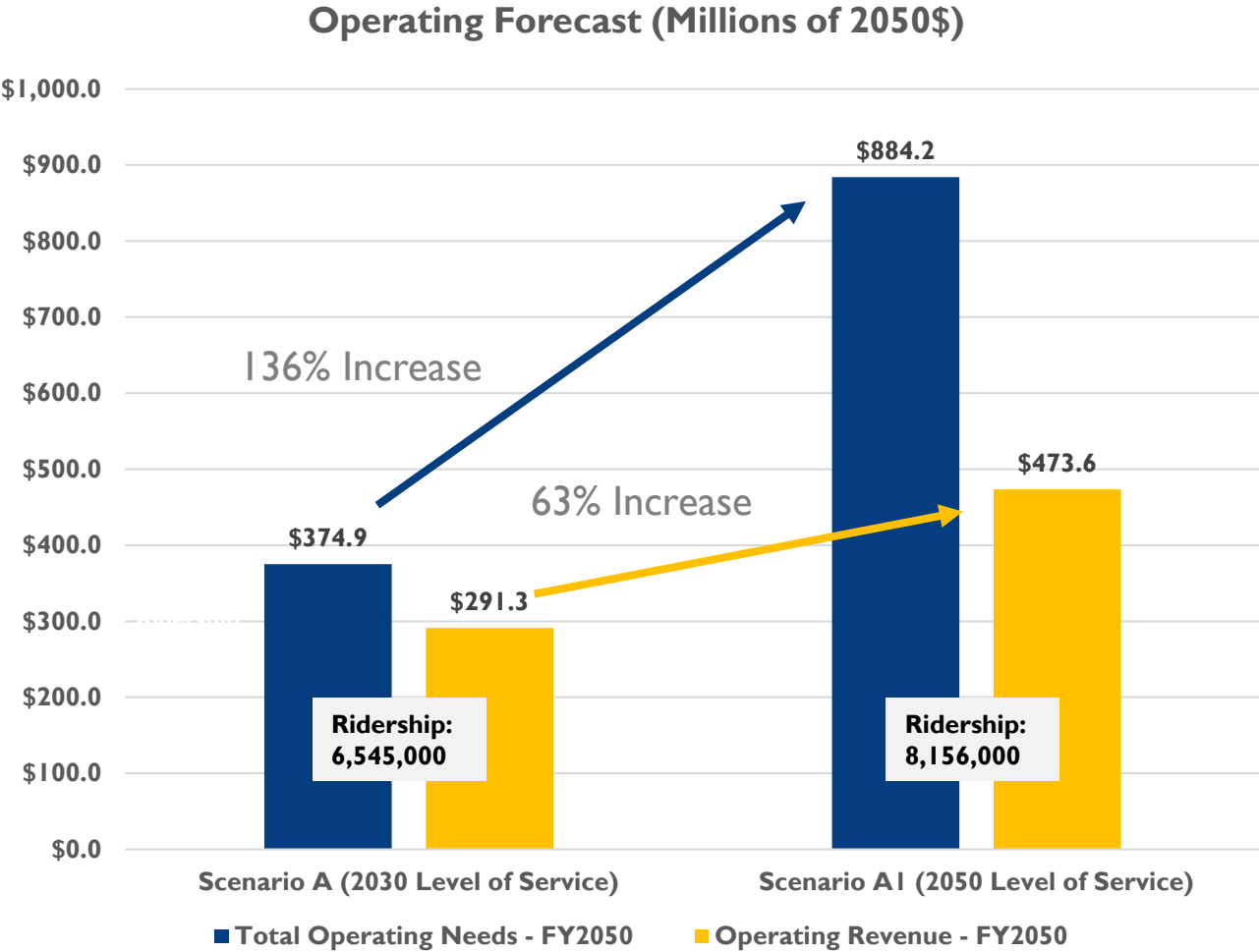
# Capital Costs – Locomotive Fleet



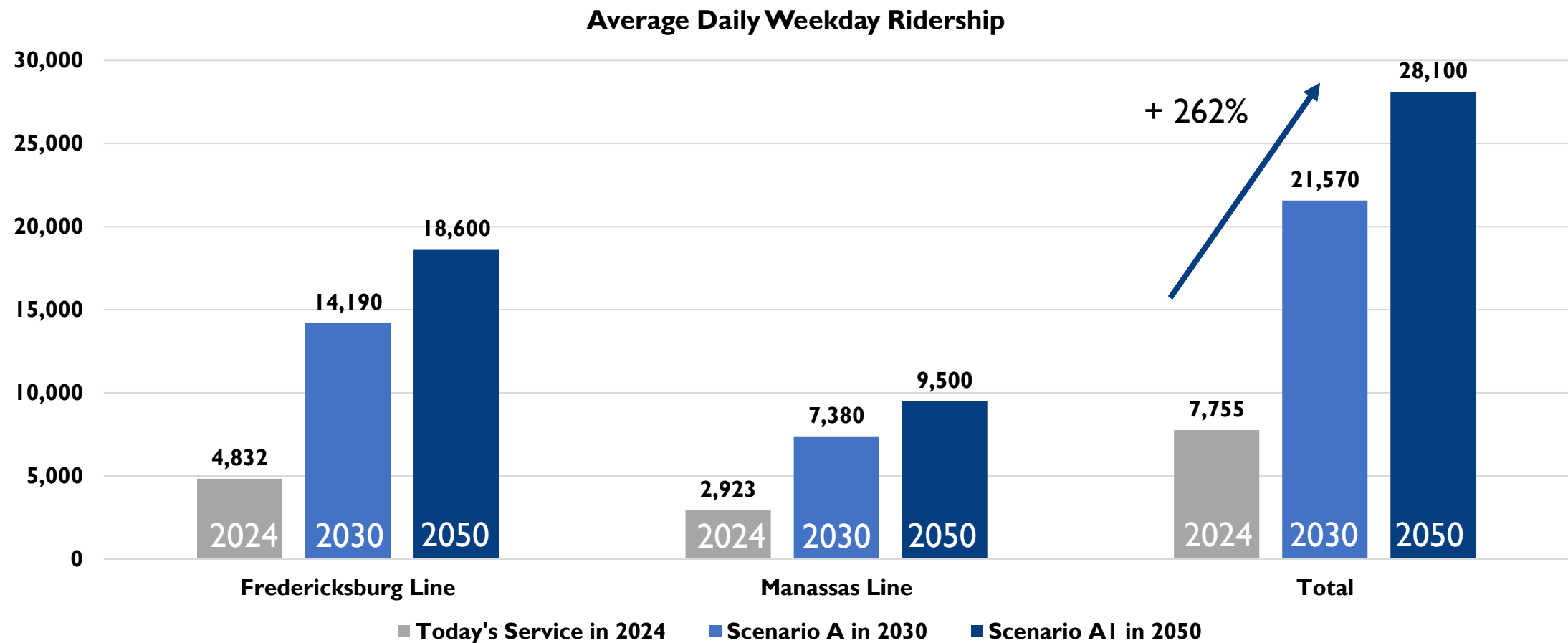
\* Including 20% of spares in the locomotive fleet. Replacement costs include the cost of three (3) "protect" locomotive replacements. All cost estimates are in the year of expenditure dollars.



# 2050 Financial Forecasts: Operating



# Average Daily Ridership Forecasts By Year



# NEXT STEPS

1. Continued member jurisdiction outreach
2. Fall 2024 VRE Ops. Board Action
3. Return to NVTC/PRTC in late fall 2024
4. Areas for future study not addressed in plan:
  - Sustainable long-term funding sources identification
  - Connecting bus analysis
  - Fleet Optimization Study
  - Station-area development coord. with jurisdictions

