



SYSTEM PLAN 2050

RPTS Meeting, September 30, 2025

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Planning Program Manager



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 northern jurisdictions and vice-versa



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



New Opportunities

- Around 2030, new TRV infrastructure, partially funded by VRE/regional sources, will allow VRE to run 63% more service than today.
- The 2018 CROC fund gives VRE a dedicated source of funding for VRE capital and operating expenses. Currently being used for debt service and pay-go expenses related to TRV.



What's in the Plan?

2050 System Plan

2030 Service Plan

2050 Service Vision

Financial
Forecasts
(Aggregate and
in FY)

Identification of
Capital Needs
(including rolling
stock)

2050 Service
Plan

Financial
Forecasts
(Aggregate and
in FY)

Identification of
Capital Needs
(including rolling
stock)

**Moves VRE
closer to
the Plan's
Vision
Statement**

- This Plan is not a budget or commitment to provide specific funding for this desired service plan
- Commissions/Operations Board approval for specific service implementation and capital improvements will be sought separately



Two Horizon Years

2030 Service Plan

- Utilizes TRV Phases I and II infrastructure
- Maximizes use of our existing rolling stock
- Market-driven timetable
- Requires moderate increase in operating funding

2050 Service Plan

- Aligned service to a reasonable future infrastructure
- No geographic service expansions by rail
- Responds to Plan's overarching vision for VRE
- Less market-constrained, more aspirational
- Requires significant increase in operating funding
- Requires significant new rolling stock investment

System Plan 2050 Vision

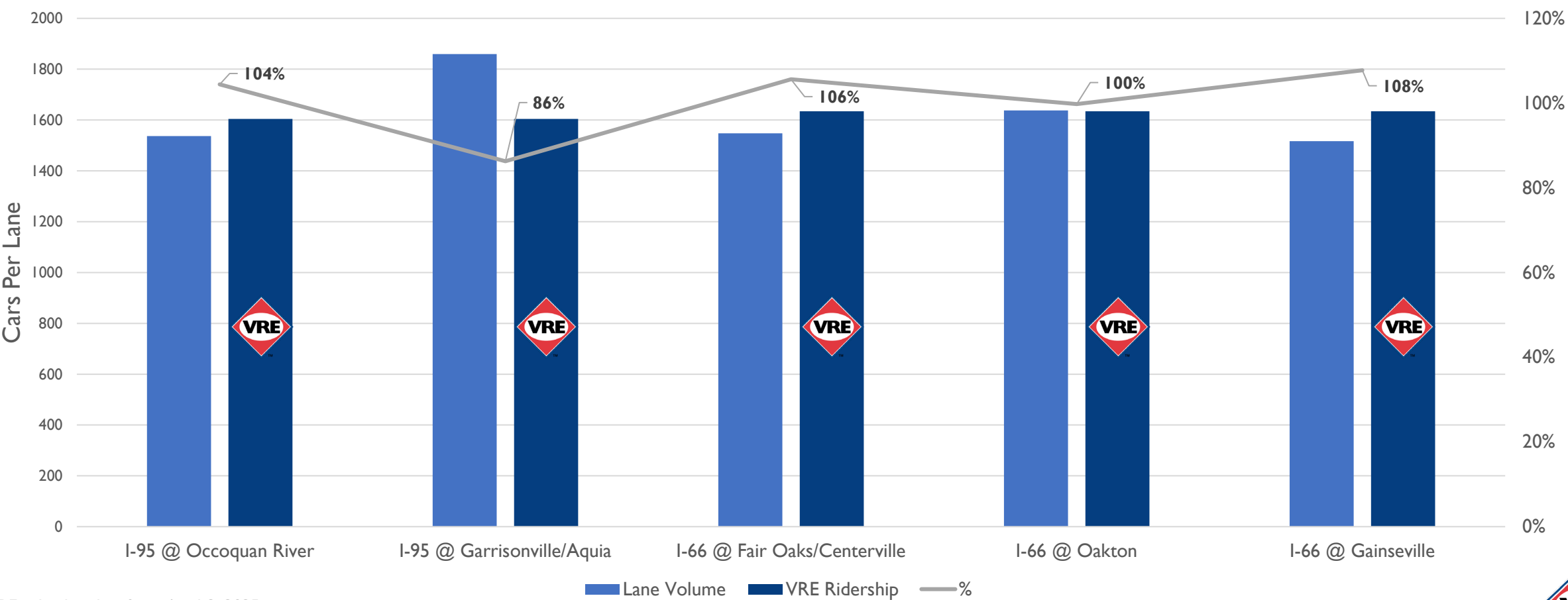
VRE will grow to serve the region as the transportation service of choice, creating meaningful connections and economic opportunities in a safe, sustainable, and equitable manner.

VRE as the Region's Spine in 2050



VRE's Relief to the Region's Highways

2025 April VRE Ridership vs One Lane Volume During Rush Hour



VRE ridership data from April 8, 2025
VDOT AADT average data from 2014-2023

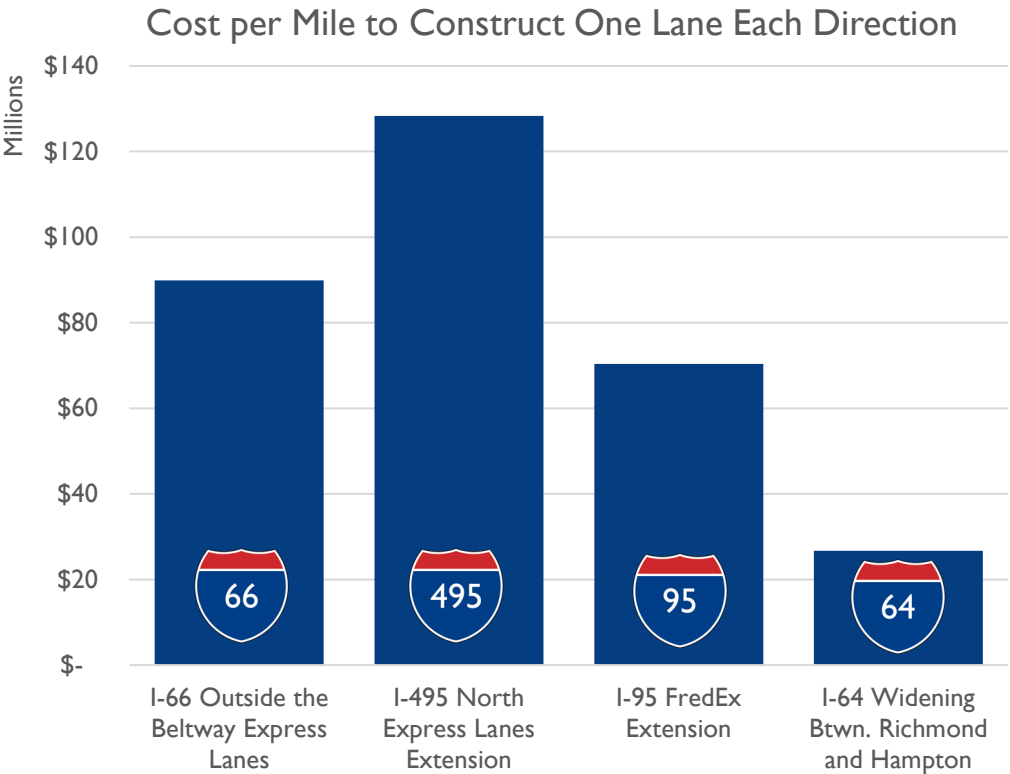


VRE: A Cost-Effective Way to Move More People

Transportation MENU

Main Course

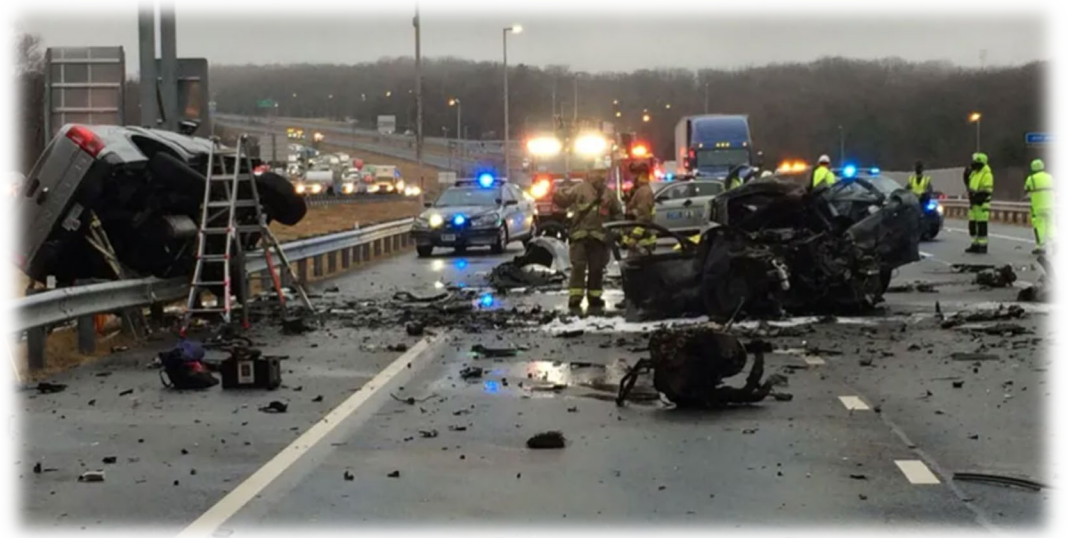
- 1 Interstate Travel Lane \$27 - \$128 M
(Price per mile, each direction)
- 1 VRE Round Trip \$2.8 M
- 1 Interstate HOT Lane MP



Source: Virginia Department of Transportation

Safety Benefits

Fact: Public transportation is one of the safest ways to travel¹



Multiple fatality crash on I-95 in 2021

- Traveling by commuter and intercity rail is **18 times** safer for passengers (measuring fatalities) than traveling by auto.
 - (2000-2014) **6.53 deaths** per billion passenger miles driving vs **0.36 deaths** per billion passenger miles on commuter rail
- Largest safety benefits of transit are in automobile dependent communities
- Travelers who shift from automobile to public transit directly reduce their crash risk

¹ APTA VZN Transit Safety Brief 8.2018.pdf

System Plan 2050 Benefits

That's 7.03 M weekday trips and 1.14 M weekend trips per year!

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



Market Analysis: Data Considered

Inputs Considered:



General Population Survey



VRE Customer Opinion Survey



VRE Member Jurisdiction Outreach



MWCOG Travel Demand Model O-D Analysis (M-F and Sa-Su)



Travel Time Competitiveness Analysis of Major O-D Pairs



Population and Employment Growth Projections, Changes to Ridership Growth



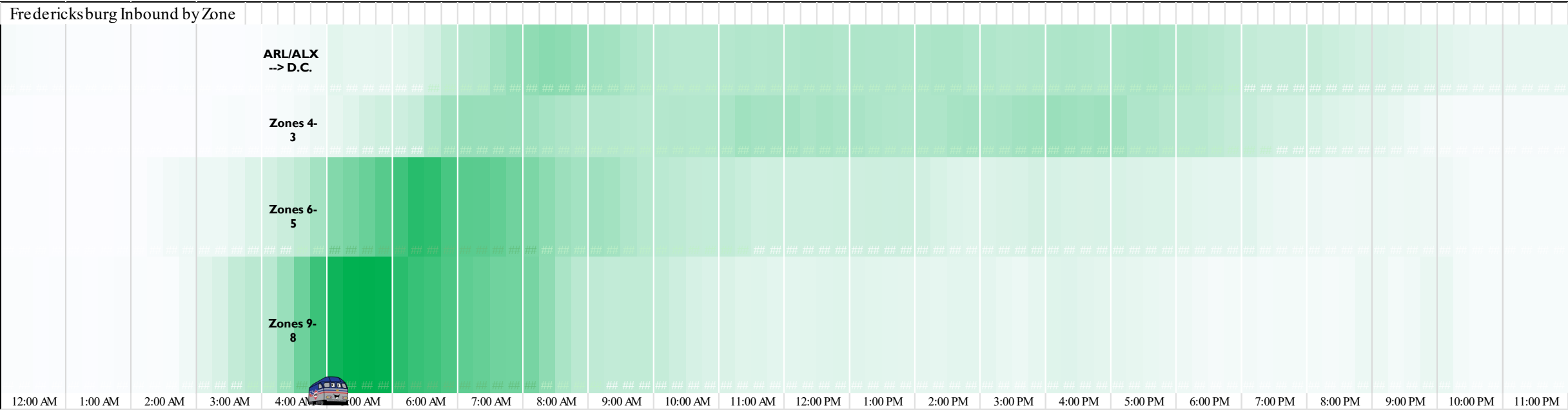
Telework Trends (through early spring 2025) + “what if” scenario for Federal RTO mandate (which did occur very similarly to prediction)



StreetLight Location-Based Services O-D Pair Analysis: VRE Station Catchment Areas

Market Analysis

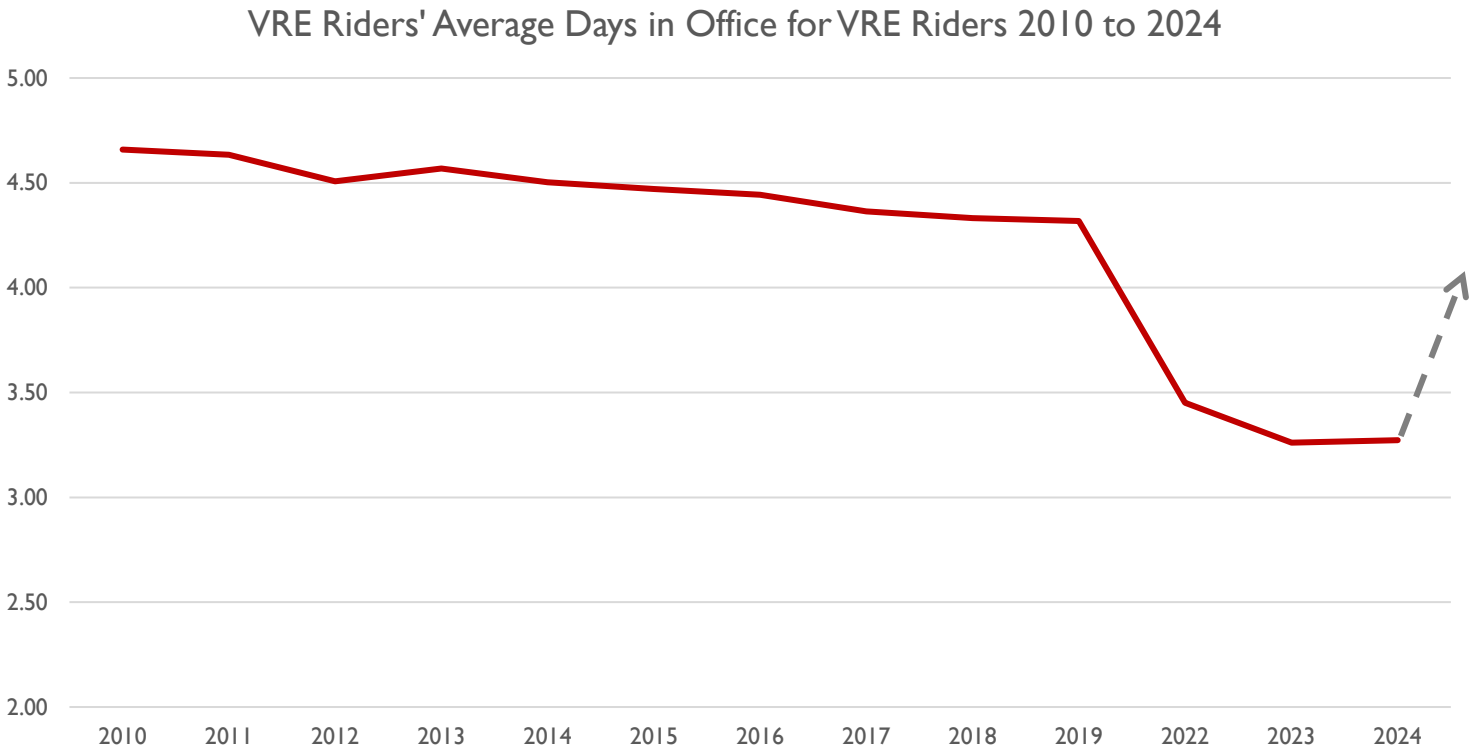
Revised Travel Demand Data (where and when trips occur in VRE territory)



Source: StreetLight Location-Based Services Data, January-June 2024.



Market Analysis



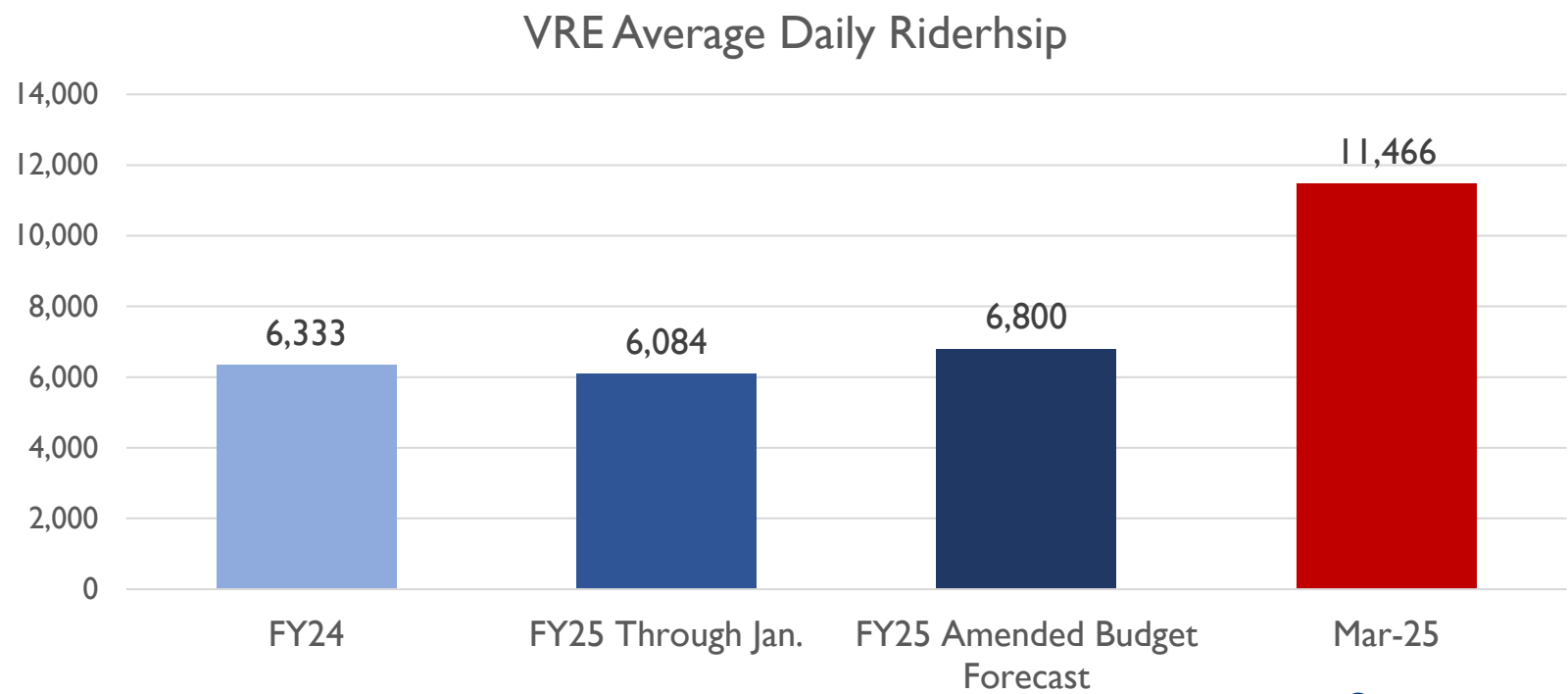
Revised Telework Assumption:
VRE Riders: 4.48 days-in-office average per week

Revised Baseline 2025 ADR:
Reflects observed ADR from summer 2024 + bump in Federal Worker ADR observed as-of March 2025



Recent Trends in Ridership

- Significant ridership gains have been seen in February and March of 2025 due to federal return to office policies
- FY25 and future ridership forecasts are under review to assess the impacts of Federal Government policies
- Additional information will be provided in December 2025 regarding the effect of these trends on ridership and financial forecasts



Comparison of Weekday Service Frequency

	System Plan 2040 (PREVIOUS PLAN)		System Plan 2050 Update
Peak Period/Direction	20 Minutes	➤	20 Minutes
Peak Period/Reverse Direction*	60 Minutes	➤	30 Minutes
Off Peak	120 Minutes	➤	60 Minutes
Number of Daily Trains	66	➤	116
Number of Trainsets (Consists)	19	➤	23
Mid-Day Storage Requirements	14	➤	7
Express Trains	Contemplated outer-zone limited stop service but not quantified in Plan.	➤	One (1) train per hour in weekday peak period/direction only

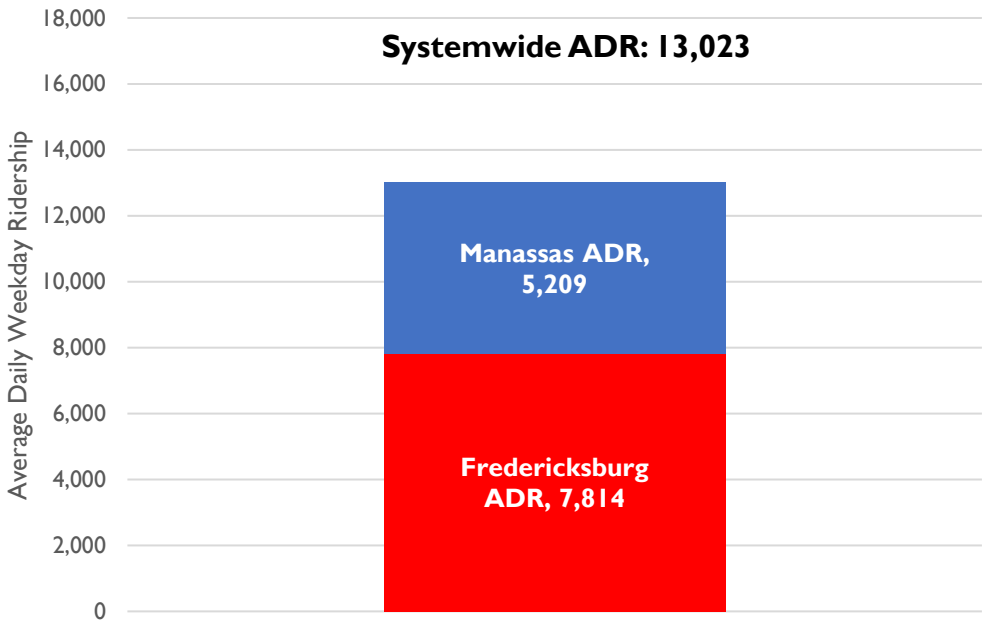
* Reverse direction defined as North in PM and South in AM
Note: Frequencies are given by line

2030 Weekday Service Plan and Ridership

No-Build

	Manassas Line		Fredericksburg Line	
	Weekday Express		Weekday	Express
Daily Trains	16	3	16	1

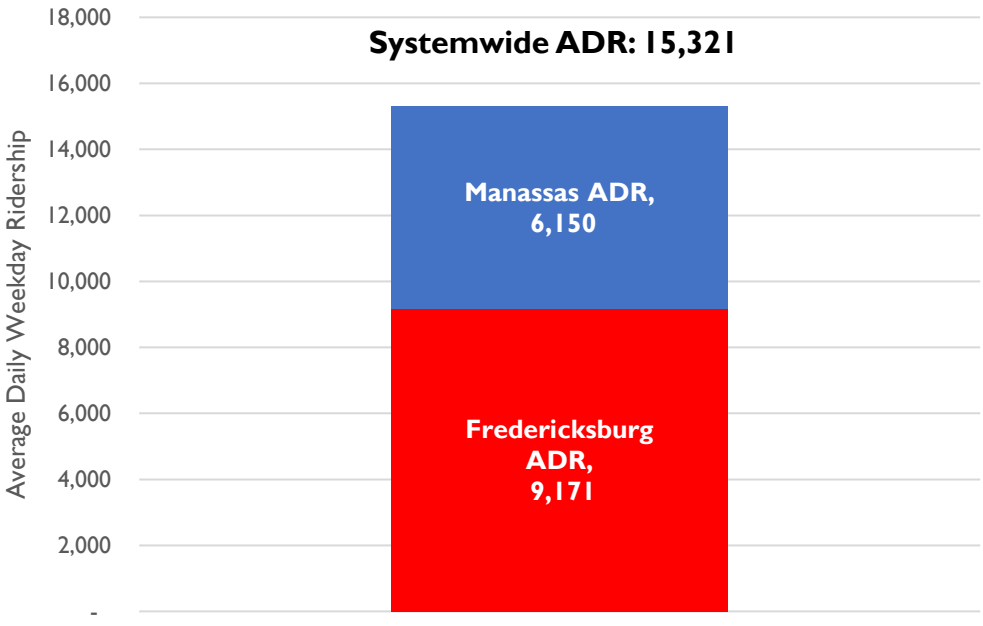
2030 No-Build Service Plan Ridership



Build

	Manassas Line		Fredericksburg Line	
	Weekday Express		Weekday	Express
Daily Trains	24	6	28	3

2030 Build Service Plan Ridership



2030 Weekend Service Plan and Ridership

Manassas Line

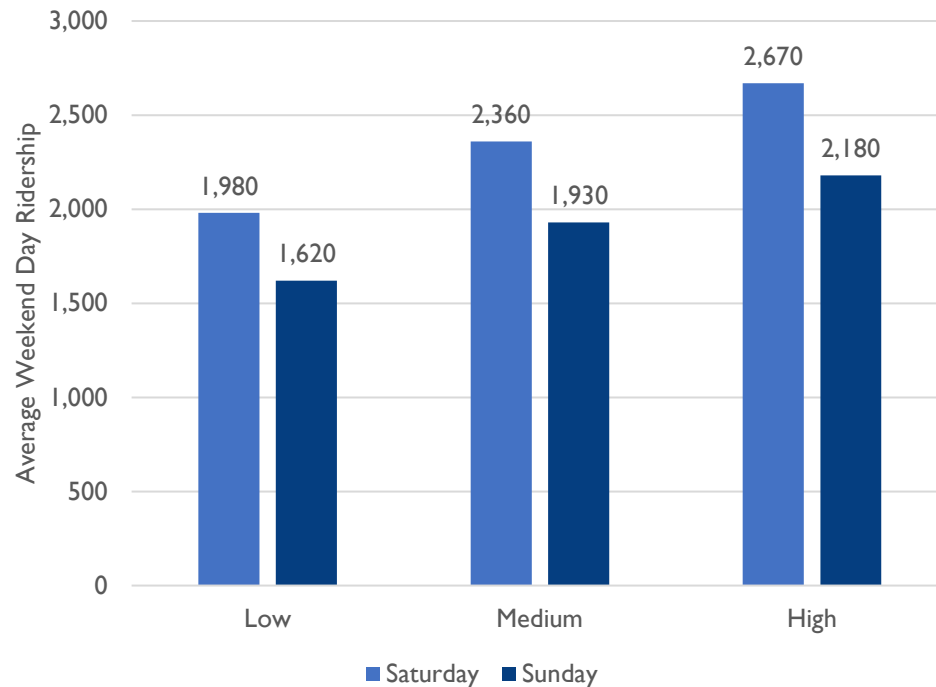
Weekend
6

Daily Trains

Fredericksburg Line

Weekend
6

2030 Baseline Weekend Ridership Estimate Range



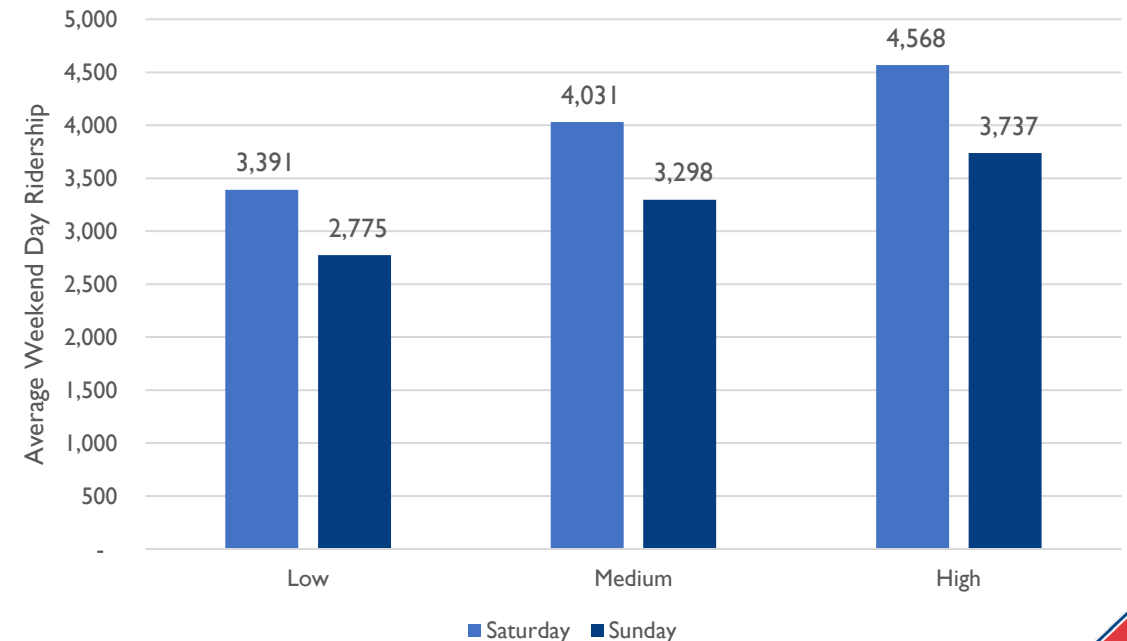
Manassas Line

Weekend
12

Fredericksburg Line

Weekend
14

2030 Weekend Ridership Estimate Range



2050 Weekday Service Plan and Ridership

Daily Trains

Fredericksburg Line

Weekday
16

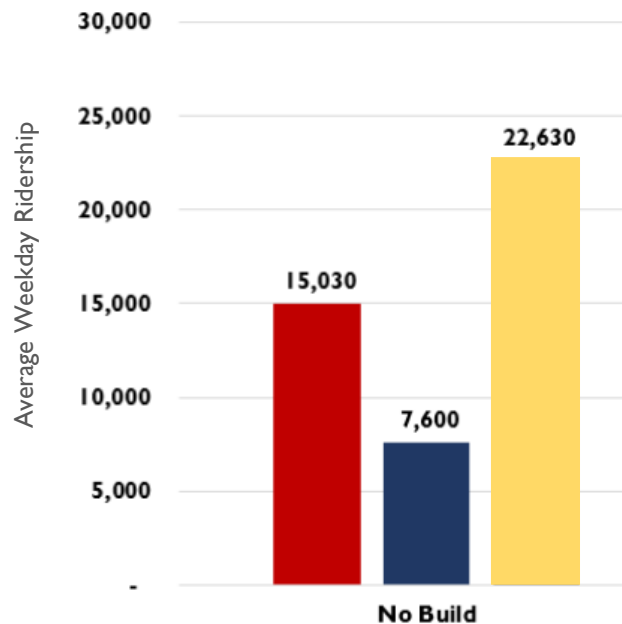
Express
1

Manassas Line

Weekday
16

Express
3

2050 Weekday No-Build Ridership



■ Fredericksburg Line ■ Manassas Line ■ Total

Fredericksburg Line

Weekday
58

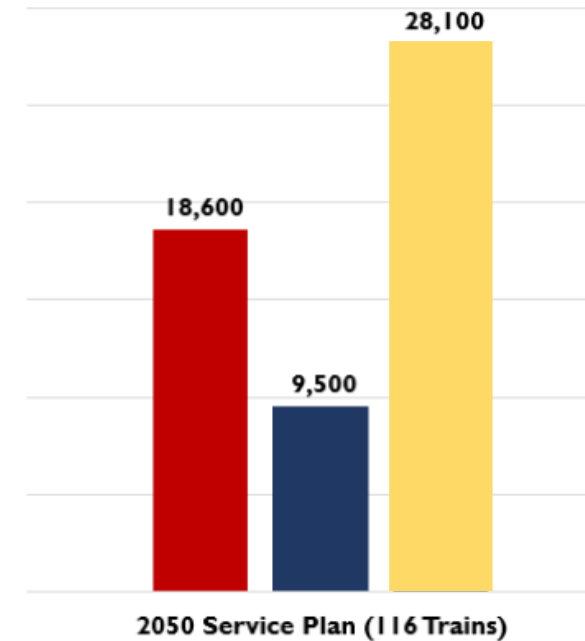
Express
12

Manassas Line

Weekday
58

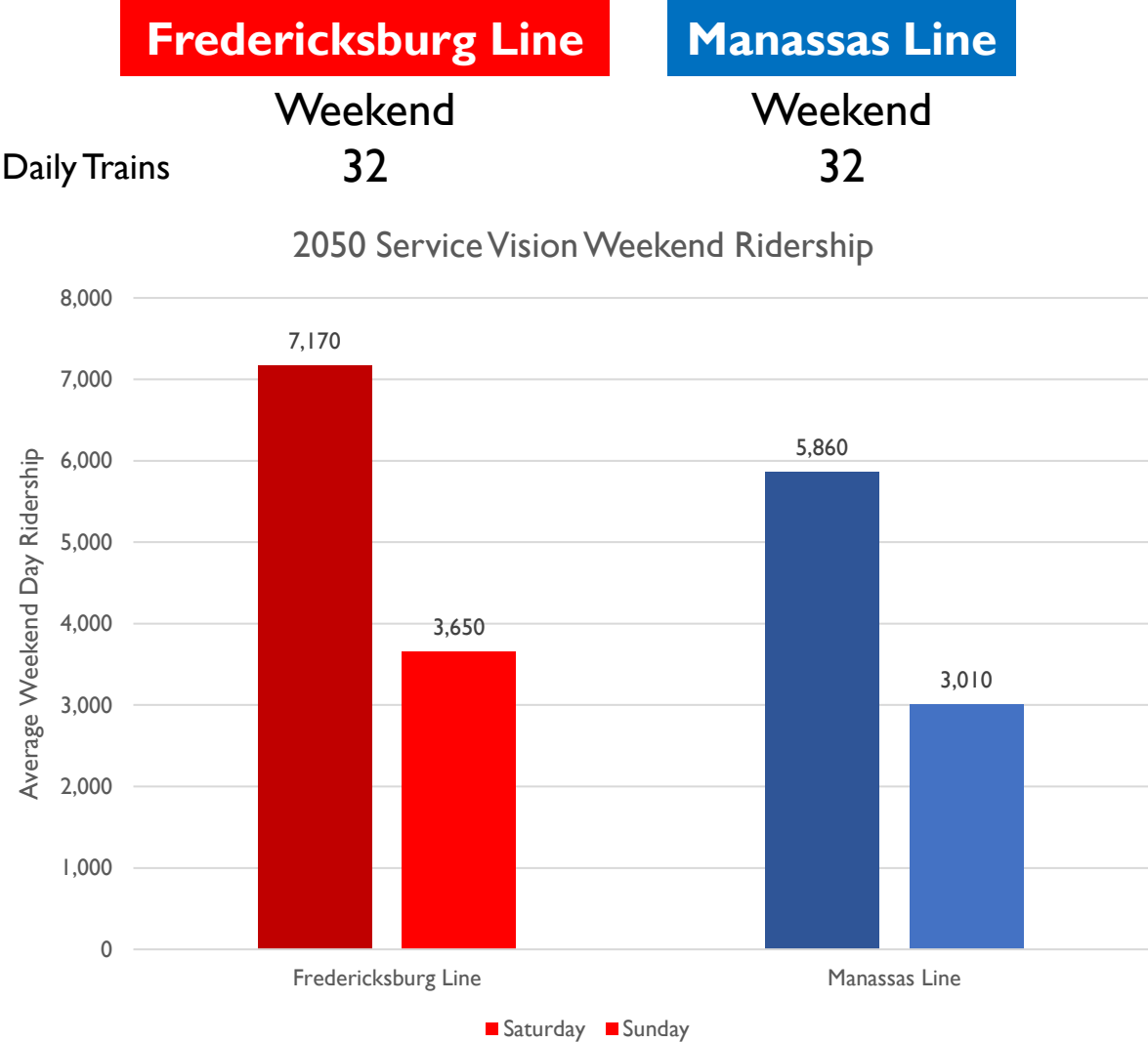
Express
12

2050 Service Vision Weekday Ridership



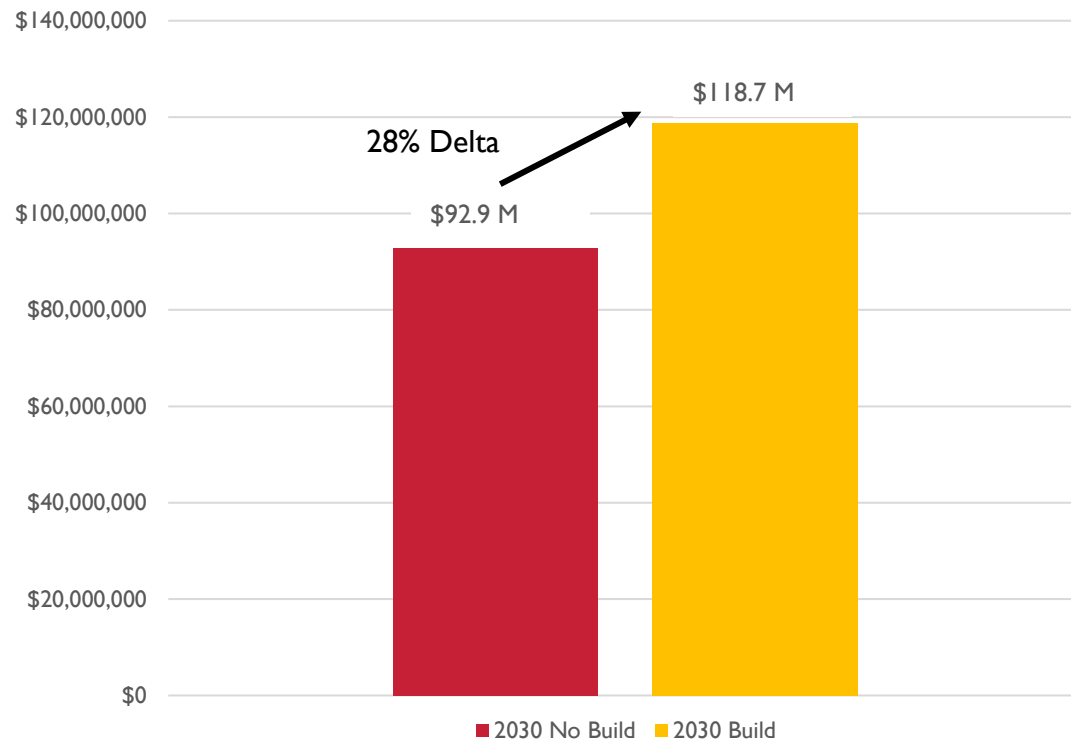
■ Fredericksburg Line ■ Manassas Line ■ Total

2050 Weekend Service Plan and Ridership

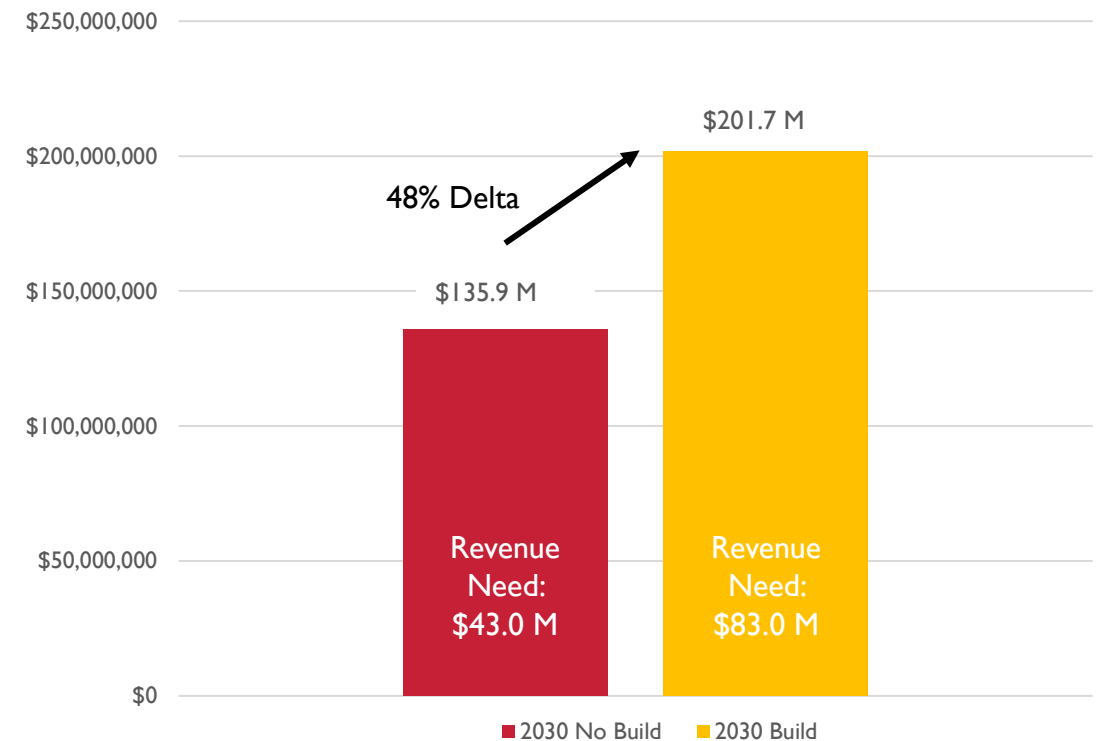


2030 Operating Need

FY30 Operating Revenues



FY30 Operating Expenditures

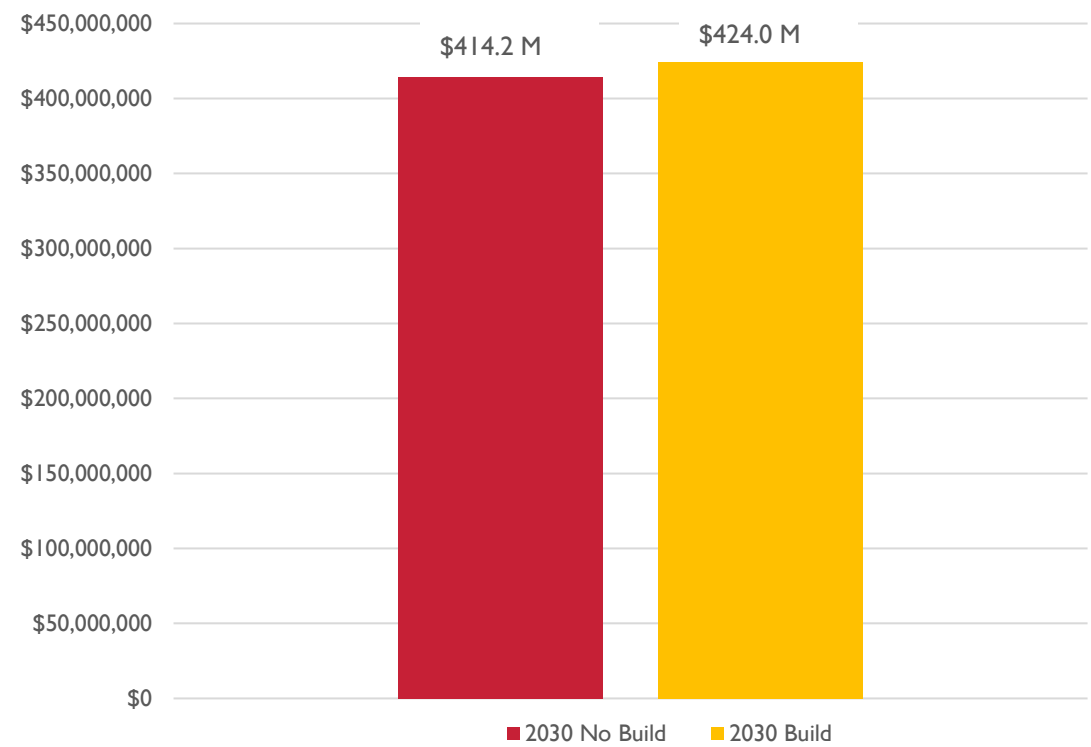


Above expenditures include debt service

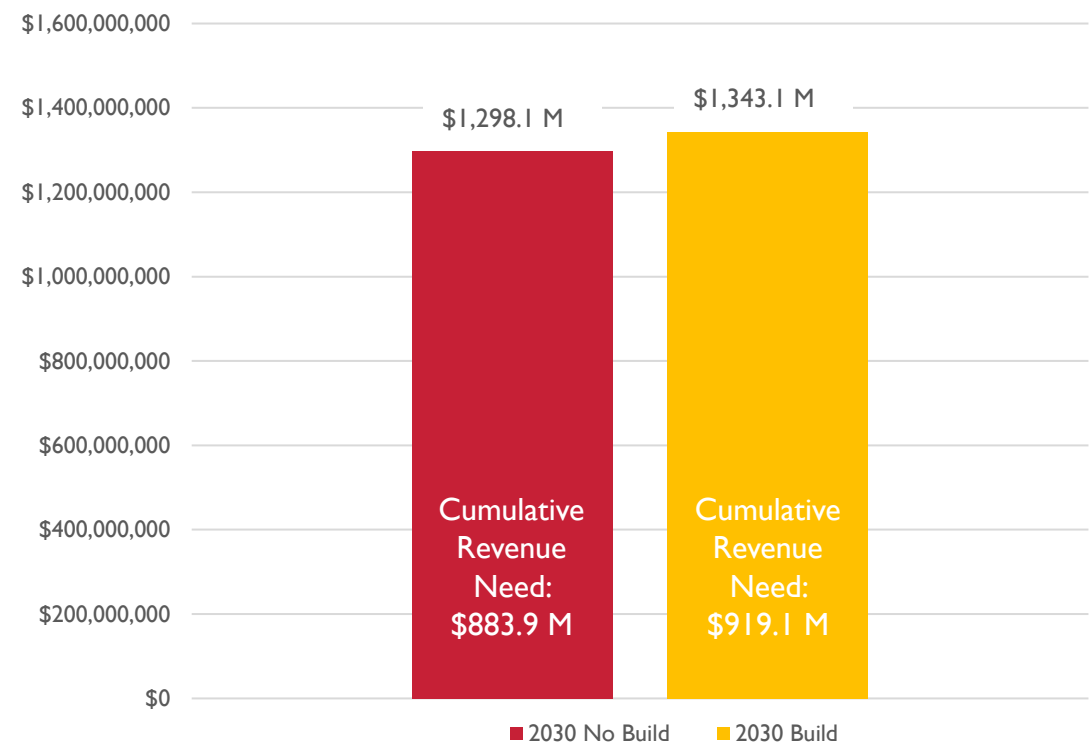


2030 Capital Need

Cumulative (FY25-FY30) Capital Revenues

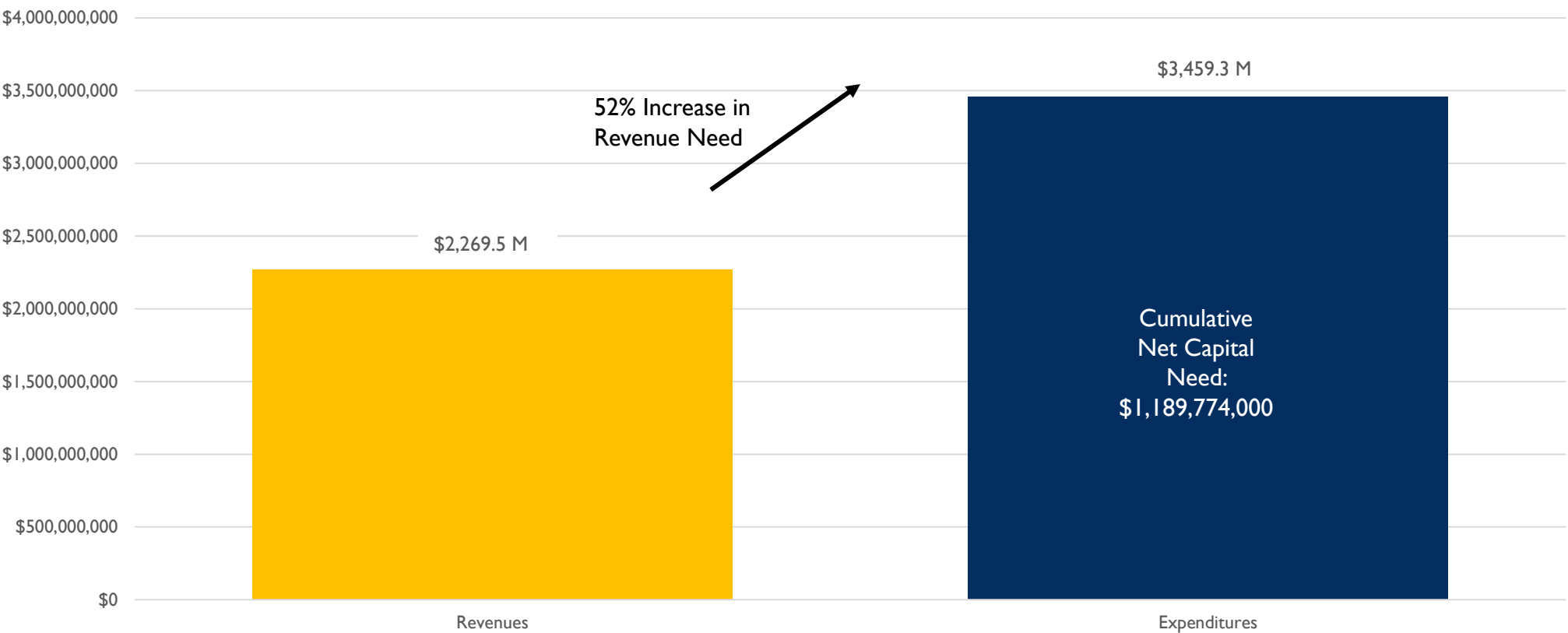


Cumulative (FY25-FY30) Capital Expenditures

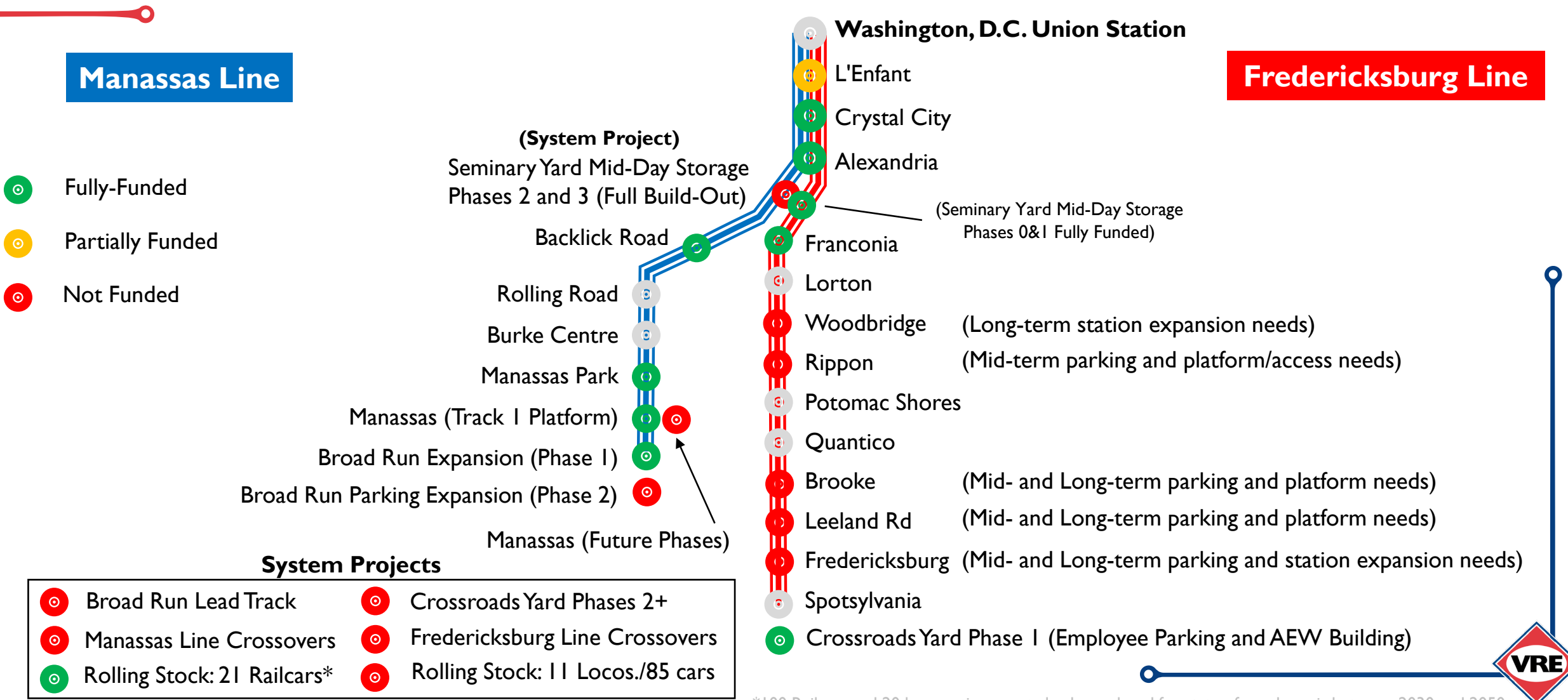


2050 Capital Need

FY 2025-2050 Capital Revenues vs Expenditures (Includes Annual SOGR Asset Management Activities)



2050: What's Funded and What's Not



THANKYOU

Questions?

