



## Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>V</b>
<i>Current State of the Railroad .....</i>	<i>v</i>
<i>The Strategic Planning Process.....</i>	<i>vi</i>
<i>The VRE Ridership Market.....</i>	<i>vii</i>
<i>Strategic Plan Scenarios and Recommendations .....</i>	<i>viii</i>
<i>Core Network Needs.....</i>	<i>ix</i>
<i>Potential Network Expansion .....</i>	<i>x</i>
<i>Phased Service Improvement and Capital Investment Plan .....</i>	<i>xii</i>
<i>Financial, Institutional and Organizational Issues .....</i>	<i>xiii</i>
<i>VRE Moving Forward .....</i>	<i>xiv</i>
<b>1. CURRENT STATE OF THE RAILROAD.....</b>	<b>1</b>
VRE SYSTEM OVERVIEW .....	1
<i>The Existing VRE Network .....</i>	<i>1</i>
<i>History.....</i>	<i>2</i>
<i>Organizational and Financial Structure.....</i>	<i>2</i>
THE STRATEGIC PLANNING PROCESS.....	4
EXISTING CONDITIONS – VRE AT CAPACITY.....	6
<b>2. THE VRE RIDERSHIP MARKET .....</b>	<b>10</b>
MARKET OVERVIEW .....	10
VRE PATRONAGE FORECASTING METHODOLOGY.....	11
REGIONAL DEMOGRAPHIC AND TRIP-MAKING TRENDS.....	14
<i>Population and Employment.....</i>	<i>14</i>
<i>Work Trips to Central Business District.....</i>	<i>16</i>
<i>VRE Share of the Work Trip Market to CBD Destination Zones.....</i>	<i>18</i>
PROJECTED RIDERSHIP GROWTH THROUGH 2025.....	20
<b>3. VRE IN THE FUTURE .....</b>	<b>26</b>
WHAT’S POSSIBLE BY 2025?.....	28
HOW CAN WE GET THERE FROM HERE?.....	30
WHAT’S ACHIEVABLE BY 2010?.....	32
<b>4. CORE NETWORK NEEDS.....</b>	<b>33</b>
EXISTING SUBURBAN STATIONS .....	34
<i>Fredericksburg Line .....</i>	<i>38</i>
<i>Manassas Line.....</i>	<i>43</i>
NEW SUBURBAN STATIONS.....	46
CBD STATIONS.....	47
<i>Washington Union Station.....</i>	<i>47</i>
<i>L’Enfant Station.....</i>	<i>49</i>
<i>Crystal City Station .....</i>	<i>50</i>
<i>Alexandria Station .....</i>	<i>50</i>



ROLLING STOCK.....51

*Coaches* .....52

*Locomotives* .....59

STORAGE YARDS AND MAINTENANCE FACILITIES.....63

*Mid-Day Storage Requirements* .....63

*Overnight Storage Requirements*.....65

*Equipment Maintenance Options* .....68

RAIL INFRASTRUCTURE .....71

TRAIN DISPATCHING AND OPERATIONAL CONTROL .....73

**5. POTENTIAL NETWORK EXPANSION.....75**

    GAINESVILLE-HAYMARKET .....75

    FAUQUIER COUNTY .....81

    SPOTSYLVANIA COUNTY.....85

    RICHMOND AND CHARLOTTESVILLE.....87

    RUN-THROUGH SERVICE TO MARYLAND.....87

**6. PHASED SERVICE IMPROVEMENT PLAN .....97**

**7. PHASED CAPITAL INVESTMENT PLAN .....102**

**8. INSTITUTIONAL AND ORGANIZATIONAL ISSUES .....105**

**9. FINANCIAL CHARACTERISTICS OF THE PLAN .....107**

    ANNUAL OPERATIONS AND MAINTENANCE COSTS .....107

    REQUIRED SUBSIDY LEVEL.....109

## Tables

TABLE 2.1 PROJECTED POPULATION AND EMPLOYMENT GROWTH WITHIN VRE CATCHMENT AREAS.....	15
TABLE 2.2 WORK TRIPS FROM VRE ORIGIN CATCHMENT AREAS TO CENTRAL BUSINESS DISTRICT DESTINATIONS.....	17
TABLE 2.3 VRE SHARE OF WORK TRIPS FROM VRE ORIGIN CATCHMENT AREAS TO CENTRAL BUSINESS DISTRICT DESTINATIONS – YEAR 2000 .....	19
TABLE 2.4 ESTIMATED DAILY VRE RIDERSHIP BY SCENARIO.....	24
TABLE 2.5 CBD COMMUTE MARKET SIZE AND ESTIMATED VRE SHARES IN 2025, BY STRATEGIC PLAN SCENARIO.....	25
TABLE 4.1.1 VRE SYSTEM STATION PARKING REQUIREMENTS THROUGH 2025 – EXISTING SERVICE TERRITORY .....	36
TABLE 4.4.1 VRE PASSENGER COACH FLEET.....	52
TABLE 4.4.2 VRE COACH REQUIREMENTS THROUGH 2025 .....	57
TABLE 4.4.3 VRE COACH PROCUREMENT THROUGH 2025, BY STRATEGIC PLAN SCENARIO .....	57
TABLE 4.4.4 EXISTING VRE LOCOMOTIVE FLEET .....	59
TABLE 4.4.5 VRE LOCOMOTIVE REQUIREMENTS THROUGH 2025.....	60
TABLE 4.4.6 VRE LOCOMOTIVE PROCUREMENT THROUGH 2025, BY STRATEGIC PLAN SCENARIO .....	62
TABLE 4.5.1 PROJECTED VRE MID-DAY STORAGE REQUIREMENTS AT WASHINGTON TERMINAL THROUGH 2025 .....	63
TABLE 4.5.2 PROJECTED VRE FREDERICKSBURG LINE OVERNIGHT STORAGE REQUIREMENTS AT CROSSROADS YARD THROUGH 2025.....	67
TABLE 4.5.3 PROJECTED VRE MANASSAS LINE OVERNIGHT STORAGE REQUIREMENTS THROUGH 2025 .....	67
TABLE 4.5.4 STORAGE AND MAINTENANCE FACILITY ESTIMATED CAPITAL COSTS .....	70
TABLE 4.6.1 RAIL INFRASTRUCTURE CAPITAL COST ALLOWANCES .....	72
TABLE 5.1 CAPITAL PROJECTS REQUIRED FOR VRE START-UP SERVICE TO GAINESVILLE.....	79
TABLE 5.2 ADDITIONAL CAPITAL PROJECTS REQUIRED FOR FULL VRE SERVICE TO HAYMARKET .....	80
TABLE 5.3 CAPITAL PROJECTS REQUIRED FOR VRE SERVICE TO FAUQUIER COUNTY .....	83
TABLE 5.4 CAPITAL PROJECTS REQUIRED FOR VRE SERVICE TO SPOTSYLVANIA COUNTY .....	86
TABLE 5.5 PREREQUISITES FOR VRE-MARC RUN THROUGH SERVICE.....	89
TABLE 6.1 OPERATING PLAN CHARACTERISTICS OF VRE PHASED SERVICE IMPROVEMENT PLAN .....	99
TABLE 7.1 ESTIMATED CAPITAL COSTS OF VRE STRATEGIC PLAN— MID-RANGE—TARGETED GROWTH .....	104
TABLE 7.2 ESTIMATED CAPITAL COSTS OF VRE STRATEGIC PLAN— HIGH END OF RANGE—AGGRESSIVE GROWTH.....	104
TABLE 7.3 ESTIMATED CAPITAL COSTS OF VRE STRATEGIC PLAN— LOW END OF RANGE—DEFERRED GROWTH.....	104
TABLE 9.1 PROJECTED VRE OPERATIONS AND MAINTENANCE COSTS.....	108
TABLE 9.2 ESTIMATED RECOVERY RATIO AND REQUIRED NON-FEDERAL SUBSIDY – TARGETED GROWTH SCENARIO.....	112



TABLE 9.3 ESTIMATED RECOVERY RATIO AND REQUIRED NON-FEDERAL SUBSIDY – AGGRESSIVE GROWTH SCENARIO ..... 113

TABLE 9.4 ESTIMATED RECOVERY RATIO AND REQUIRED NON-FEDERAL SUBSIDY – DEFERRED GROWTH SCENARIO..... 114

**Maps**

MAPS ARE PROVIDED AT THE BACK OF THE DOCUMENT

- MAP 1 EXISTING VRE NETWORK
- MAP 2 EXISTING VRE TRIP ORIGINS
- MAP 3 EXISTING VRE TRIP DESTINATIONS
- MAP 4 VRE ORIGIN CATCHMENT AREAS
- MAP 5 VRE CENTRAL BUSINESS DISTRICT DESTINATION ZONES

**Figures**

FIGURE 1-1 VRE ORGANIZATIONAL STRUCTURE ..... 3

FIGURE 1-2 THE STRATEGIC PLAN PROCESS ..... 6

FIGURE 1-3 VRE RIDERSHIP, 1997-2002 ..... 7

FIGURE 2-1 HISTORICAL VRE RIDERSHIP TREND ..... 10

FIGURE 2-2 PROJECTED POPULATION GROWTH WITHIN VRE ORIGIN CATCHMENT AREAS ..... 14

FIGURE 2-3 PROJECTED EMPLOYMENT GROWTH WITHIN VRE CENTRAL BUSINESS DISTRICT DESTINATION ZONES ..... 14

FIGURE 2-4 TOTAL DAILY WORK TRIPS TO CBD FROM THE VRE SERVICE AREA – CURRENT, PROJECTED 2025 BASELINE, AND 2025 WITH TRANSIT-ORIENTED DEVELOPMENT AND VRE INDUCED DEMAND ..... 21

FIGURE 2-5 PROJECTED VRE RIDERSHIP GROWTH THROUGH 2025 ..... 24

FIGURE 3-1 VRE STRATEGIC PLAN SCENARIOS (ILLUSTRATIVE) ..... 31

FIGURE 4-4-1 VRE RIDERSHIP DEMAND VERSUS SEAT AVAILABILITY (HYPOTHETICAL) – COACH REQUIREMENTS TO MEET TARGETED GROWTH SCENARIO ..... 55

FIGURE 4-4-2 VRE RIDERSHIP DEMAND VERSUS SEAT AVAILABILITY (HYPOTHETICAL) – COACH REQUIREMENTS TO MEET AGGRESSIVE GROWTH SCENARIO ..... 58

FIGURE 4-4-3 VRE RIDERSHIP DEMAND VERSUS SEAT AVAILABILITY (HYPOTHETICAL) – COACH REQUIREMENTS TO MEET DEFERRED GROWTH SCENARIO ..... 58

FIGURE 5-1 POTENTIAL VRE SERVICE EXTENSIONS WEST OF MANASSAS ..... 75

