

January 23, 2024

New River Valley Passenger Rail Project

Project Development Update



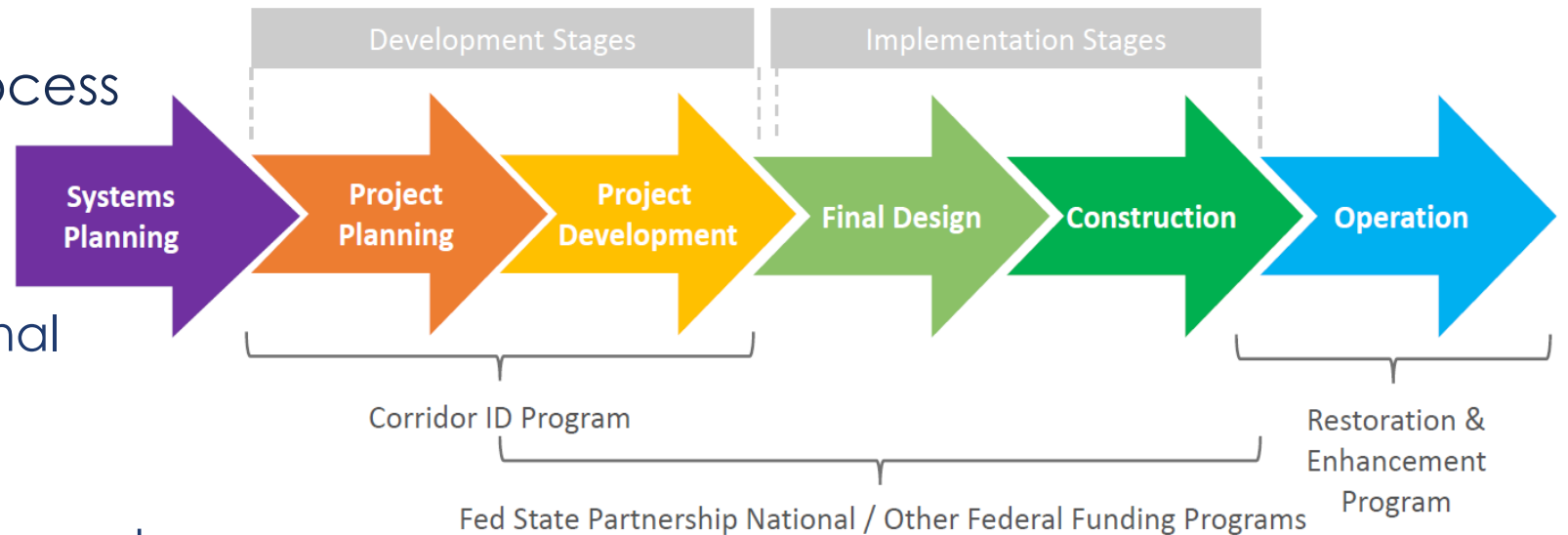
BACKGROUND

- May 5, 2021: The Commonwealth & Norfolk Southern (NS) announce an agreement to extend passenger rail service to the New River Valley (NRV).
- June 2022: Agreement with NS for purchase of ~28 miles of the Virginian Line (V-Line) finalized and 2nd Amtrak roundtrip from the Northeast Corridor to Roanoke began the following month.



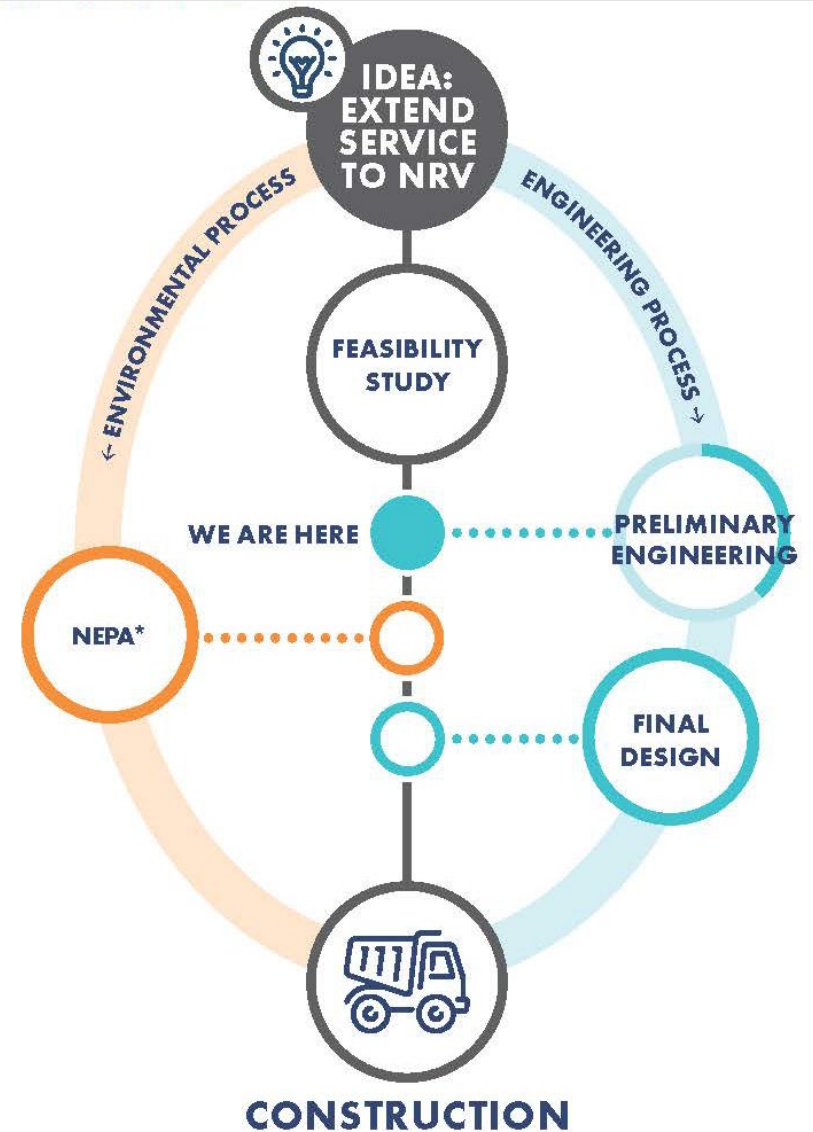
FRA CORRIDOR IDENTIFICATION PROCESS

- What is FRA Corridor Identification (CID)?
 - Process to develop new intercity rail corridors
- Where does Corridor ID process fit?
 - Coordinate within FRA project pipeline
 - NRV Service is a NE Regional Service Extension
- Where are we?
 - Mid-stage project development



NRV PROJECT DEVELOPMENT PROCESS

- Starts with an idea
- Feasibility Study is the first step in the project development process
- Preliminary engineering
 - 30% design
- 60% Design
- Environmental process
 - Pre-NEPA
 - NEPA
 - Permitting
- Final design
- Construction



*National Environmental Policy Act

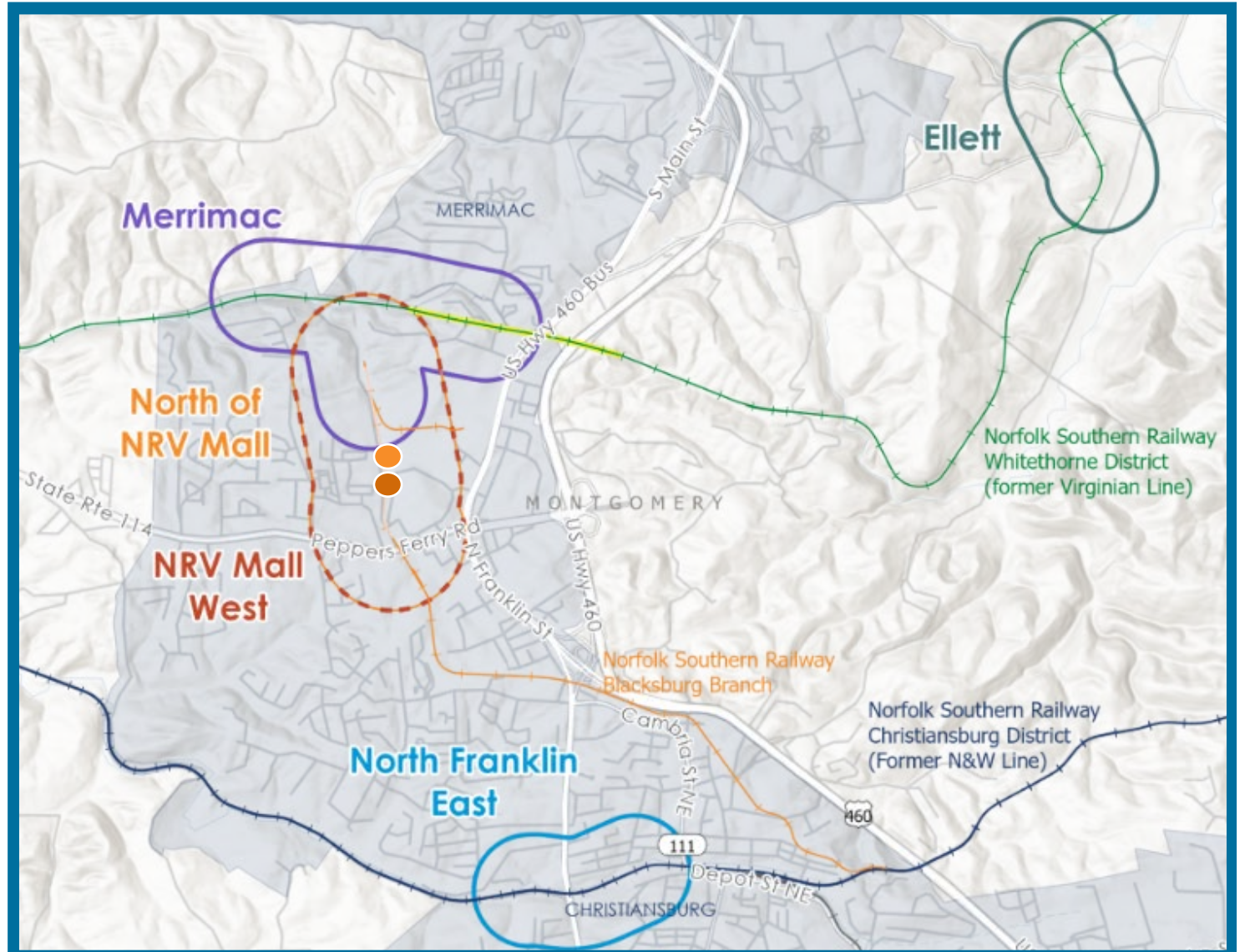
NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

- Federal law requiring federal agencies to:
 - Consider environmental impacts of proposed actions
 - Evaluate alternative actions
 - Integrate public into the decision-making process
- NEPA is a process, not a document, undertaken *before* conducting major Federal actions
- Why do we (VPRA) have to do the NEPA process?
 - Federal funding
 - USACE permit
 - Environmental impacts (cultural, historic, endangered species)



NRV STATION FEASIBILITY STUDY

- Evaluated the feasibility of bringing passenger rail to the NRV.
- Assessed sites in the region that could feasibly support a passenger rail station.
- Did not include a comprehensive look at infrastructure requirements needed to reach NRV.



NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) PROMPTS

- VPRA was awarded a \$2M CRISI Grant (FY 23 Congressional Earmark) from the FRA for the NRV Passenger Service Extension.
- Preliminary desktop reviews show anticipated environmental impacts to the streams and wetlands around the proposed alternatives, necessitating a permit from US Army Corps of Engineers (USACE) before construction can begin in the affected areas.
- Both actions are considered a federal nexus and mandate the project undergo the NEPA process.



DRAFT PURPOSE & NEED STATEMENT

- The Purpose and Need (P&N) statement serves as the backbone of the NEPA process and describes why a transportation project is necessary despite its expense and potential environmental impacts.
 - **Purpose:** The “what” of the proposed action (what is the project trying to accomplish?)
 - **Need:** Identifies the problem(s) the proposed project would address (why is the proposed action needed?)

New River Valley Passenger Rail Project Purpose and Need Statement (Draft)

- **Purpose**

To increase regional mobility options to the New River Valley area by extending passenger rail service and by providing a connection from the New River Valley to other destinations in Virginia and beyond into the Northeast Corridor.

- **Need**

Addressing limited regional mobility options to the New River Valley area. Interstate 81 is over capacity much of the day with commuter traffic and trucks, leading to travel delays and unreliable travel times throughout the region.

PROJECT DEVELOPMENT NEXT STEPS – Planning

Service Development Plan	Timeline	Comments
Technical Analysis, & Implementation Planning	Winter 2023 - Spring 2024	Much of this work has been completed through the NS Agreement. Will link to FRA CID Program.
Pre-NEPA	Timeline	Comments
Purpose & Need, and Alternatives	January 2024	Presented at the January VPRA Board meeting as an informative item.
Stakeholder/Public Outreach	Timeline	Comments
Public Engagement & Benefits Analysis	January 2024 & Spring 2024	Will help inform which alternative is carried into the formal NEPA process.
NEPA	Timeline	Comments
Anticipated Environmental Assessment (EA)	Q3 2024 - Q3 2025	Will compare one of the alternative(s) against a no-build scenario.

PROJECT DEVELOPMENT NEXT STEPS – Permitting

Coordinate with USACE:

- Jan 30 site visit to discuss path forward
- Agreement with USACE to have a part-time staff liaison dedicated to VPRA projects
- Establish modified “merger process” where NEPA and permitting overlap
- Ensures smoother environmental permitting process



NECESSARY INFRASTRUCTURE TO BRING SERVICE TO NRV

VPRA-led Improvements:

- Additions to existing rail infrastructure to include a passenger rail platform, trackwork, layover facility, and station infrastructure;
- Safety improvements to tunnel(s);
- Additional safety improvements to 28 miles of V-Line infrastructure, including minor bridge repairs, rockslide fences, and at-grade crossings.

Salem Crossovers
MP V-250.93

Roanoke Yard



NS-led Improvements:

- Facilitate 40 MPH passenger train speeds through Roanoke Yard to the Salem Crossovers;
- Track upgrades for increased synergy between freight and passenger rail traffic in Roanoke Yard;
- Design and install Positive Train Control (PTC) from Roanoke Yard to NRV.

MP 279.00

Merrimac Tunnel

Slate Hill Tunnel

V-Line

VPRA-Owned Track
NS-Owned Track
Tunnels



PRELIMINARY ENGINEERING (PE)

Procurement Milestones:

- Consultant brought on board on November 17, 2022, for conceptual design and environmental review
- NTP for 30% PE given on July 3rd, 2023

Engineering Design Milestones:

- 30% PE design documents finalized on December 15th, 2023
- 30% PE design included:
 - Updated construction cost estimate and schedule
 - Merrimac and Slate Hill Tunnel safety improvements
 - NRV Mall site, including connector track
 - Cinnabar Road site, including layover facility

ALTERNATIVES DERIVED FROM PROJECT DEVELOPMENT PHASE

ALTERNATIVE A

Cinnabar Rd Site

- Slate Hill Tunnel
- Platform at Cinnabar Rd
- Layover facility at Cinnabar Rd

ALTERNATIVE B

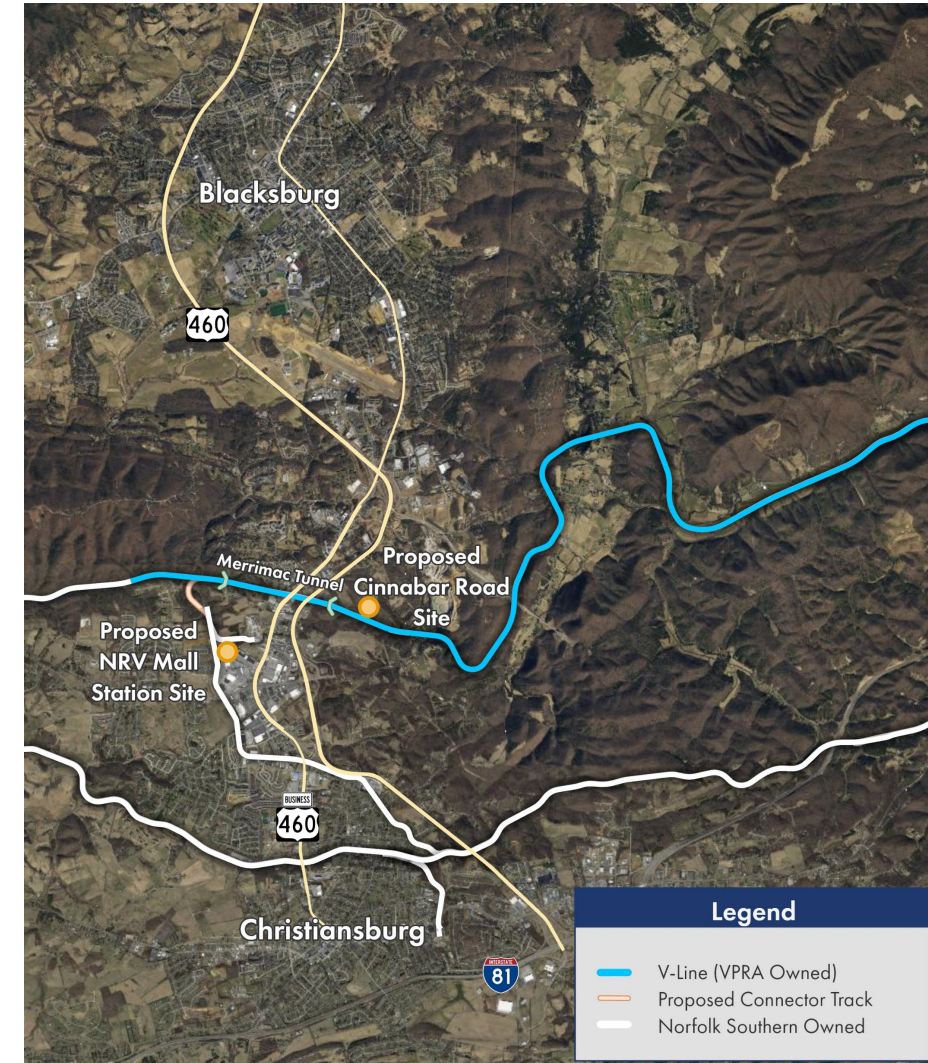
Mall Site with Cinnabar layover facility

- Slate Hill Tunnel
- Merrimac Tunnel
- Connector Track
- Platform at NRV Mall
- Layover Facility at Cinnabar Rd

ALTERNATIVE C

Mall Site with Cinnabar layover facility and Cinnabar platform

- Slate Hill Tunnel
- Merrimac Tunnel
- Connector track
- Platform at NRV Mall
- Layover facility at Cinnabar Rd
- Platform at Cinnabar Rd

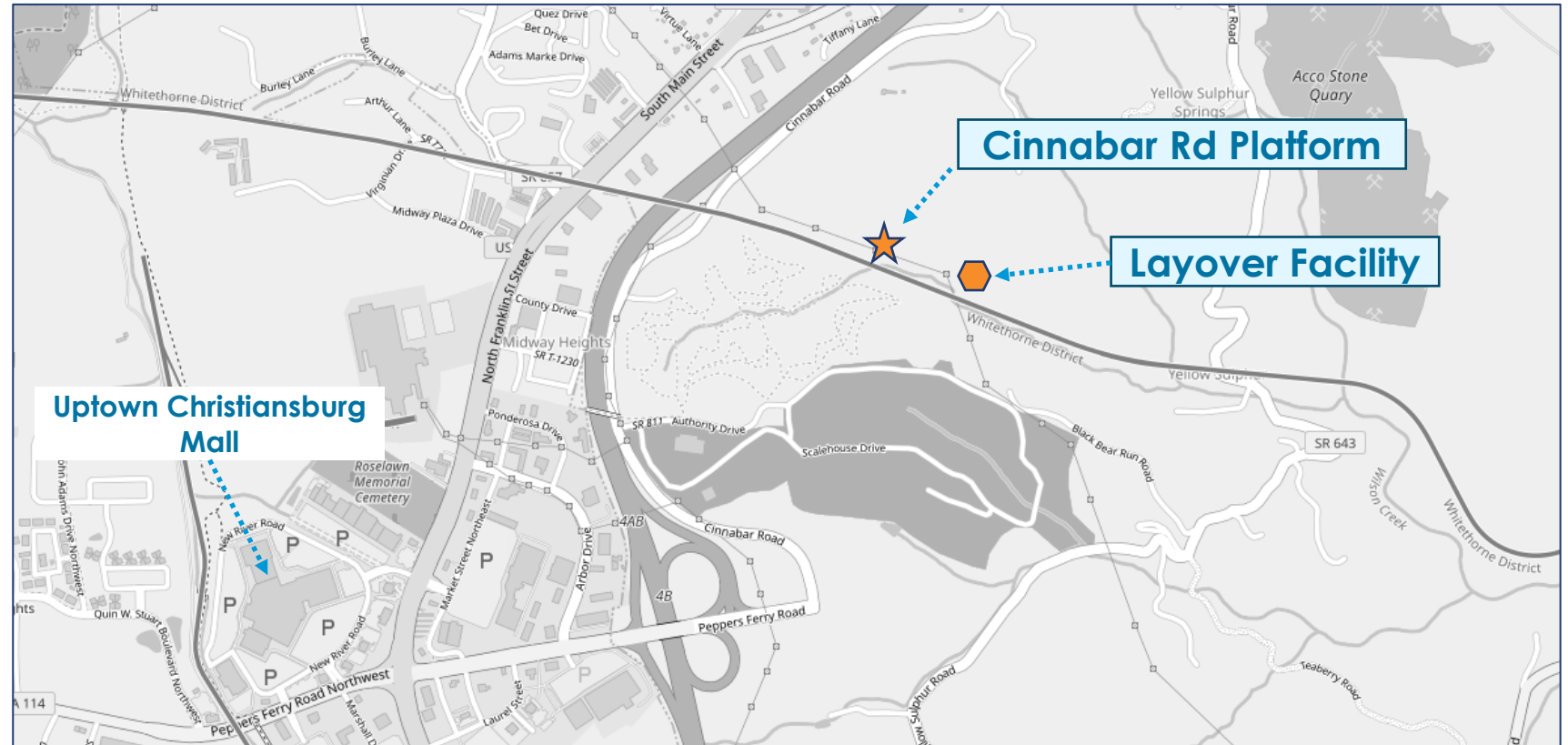


ALTERNATIVE A: SERVICE TO CINNABAR ROAD ONLY

Cinnabar Rd Site

Service Start:
Q2 2028

Cost (2027 USD):
\$366 million
(FY 24 NRV budget \$166M)

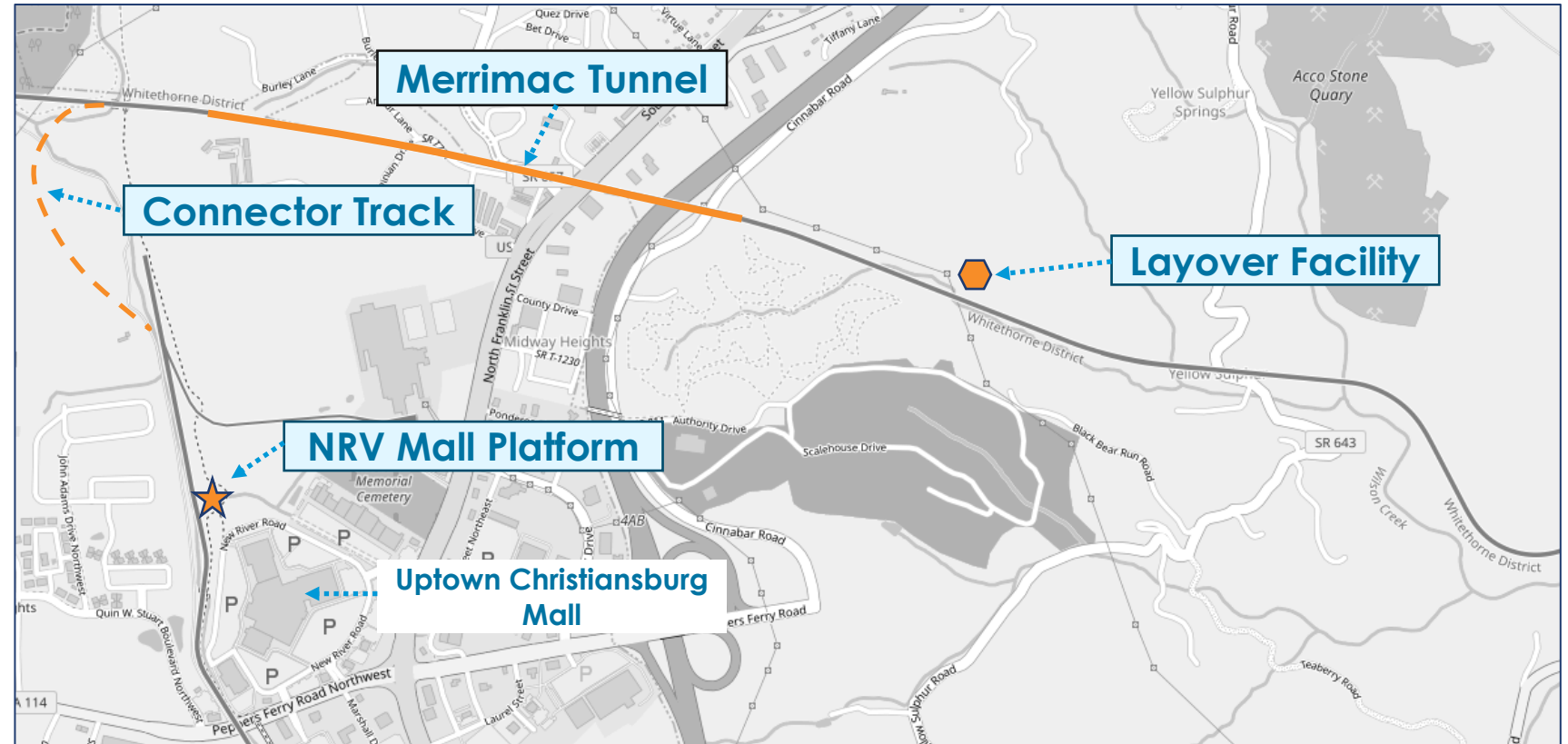


ALTERNATIVE B: SERVICE TO NRV MALL ONLY

NRV Mall Site

Service Start:
Q2 2030

Cost (2029 USD):
\$785 million

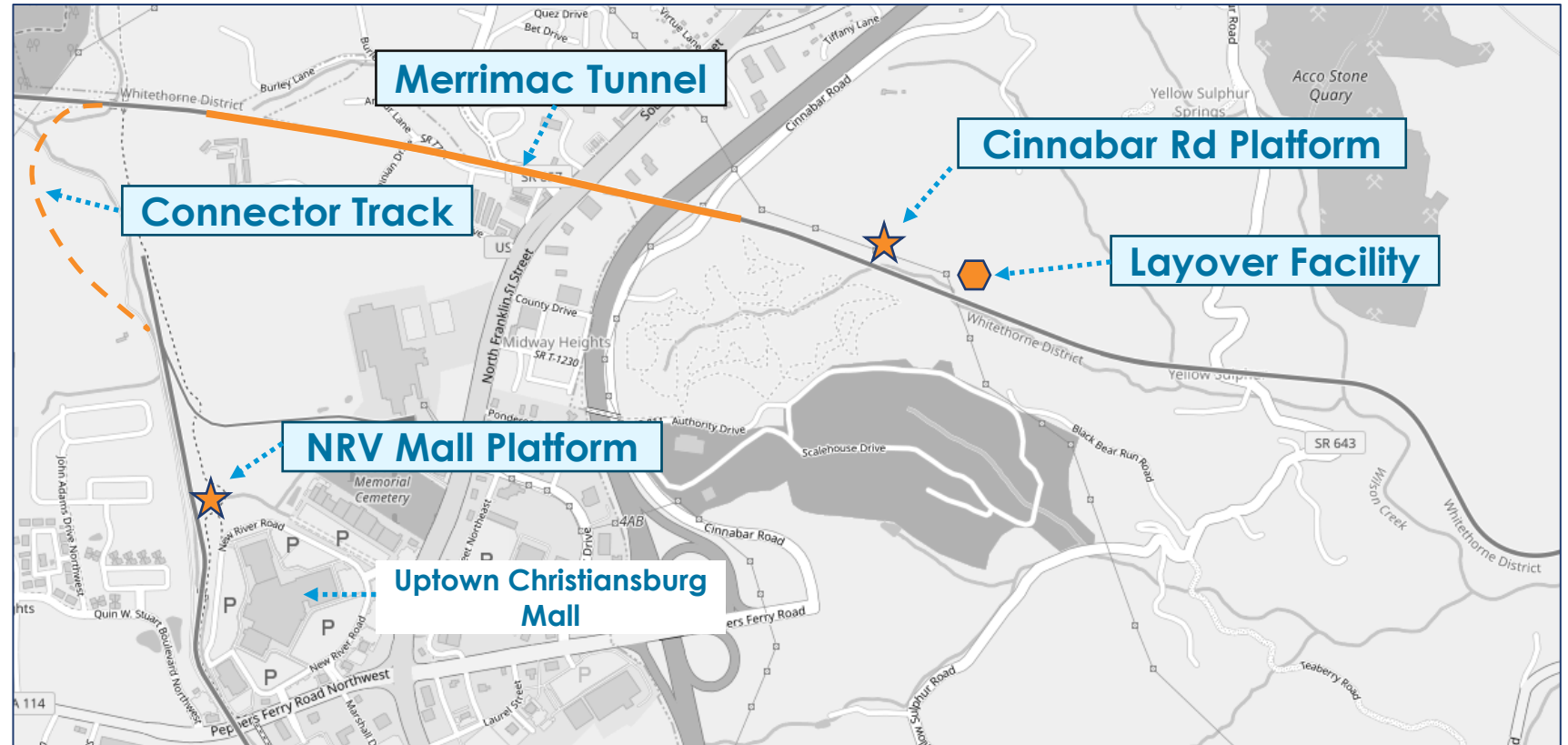


ALTERNATIVE C: INTERIM SERVICE TO CINNABAR RD – FINAL SERVICE TO NRV MALL

NRV Mall Site

Service Start:
Q2 2028

Cost (2029 USD):
\$951 million



PRE-NEPA ALTERNATIVES – COST & SCHEDULE

ALTERNATIVE A

Cinnabar Rd Site

- Slate Hill Tunnel
- Platform and parking at Cinnabar Rd
- Layover facility at Cinnabar Rd

\$366 Million
Q2 2028

ALTERNATIVE B

Mall Site with Cinnabar Layover Facility

- Slate Hill Tunnel
- Merrimac Tunnel
- Connector track
- Platform at NRV Mall
- Layover facility at Cinnabar Rd

\$785 Million
Q2 2030

ALTERNATIVE C

Mall Site with Cinnabar layover facility and Cinnabar platform

- Slate Hill Tunnel
- Merrimac Tunnel
- Connector track
- Platform at NRV Mall
- Layover facility at Cinnabar Rd
- Platform and parking at Cinnabar Rd

\$951 Million
Q2 2028
(Cinnabar)

Q2 2030
(NRV Mall)

SIGNIFICANT COST & SCHEDULE DRIVERS

Merrimac Tunnel

safety improvements:

- Ventilation
- Egress shafts
- Trackwork
- Tunnel widening

Connector Track

linking the V-Line with the
Blacksburg Branch:

- Trackwork
- Culverts/Bridges
- Earthwork and excavation



Merrimac Tunnel



Location of proposed
connector track

GEOTECHNICAL BORING SAMPLES - Tunnels

- VPRA conducted a geotech study in the Fall of 2023 to better understand the rock quality around the Slate Hill and Merrimac Tunnels.
- Merrimac Tunnel RQD* was largely poor to very poor quality. This low-quality rock was especially prevalent in the center to center-west of the tunnel.
- The poor rock quality at Merrimac may complicate structural modifications to the tunnel.
- Slate Hill Tunnel RQD was largely fair to good. The RQD was similar across the entire length and depth of the tunnel.

Rock Quality	RQD (%)
Very poor	<25%
Poor	25% - 50%
Fair	50% - 75%
Good	75% - 90%
Excellent	90% - 100%



BH07A - Merrimac Tunnel



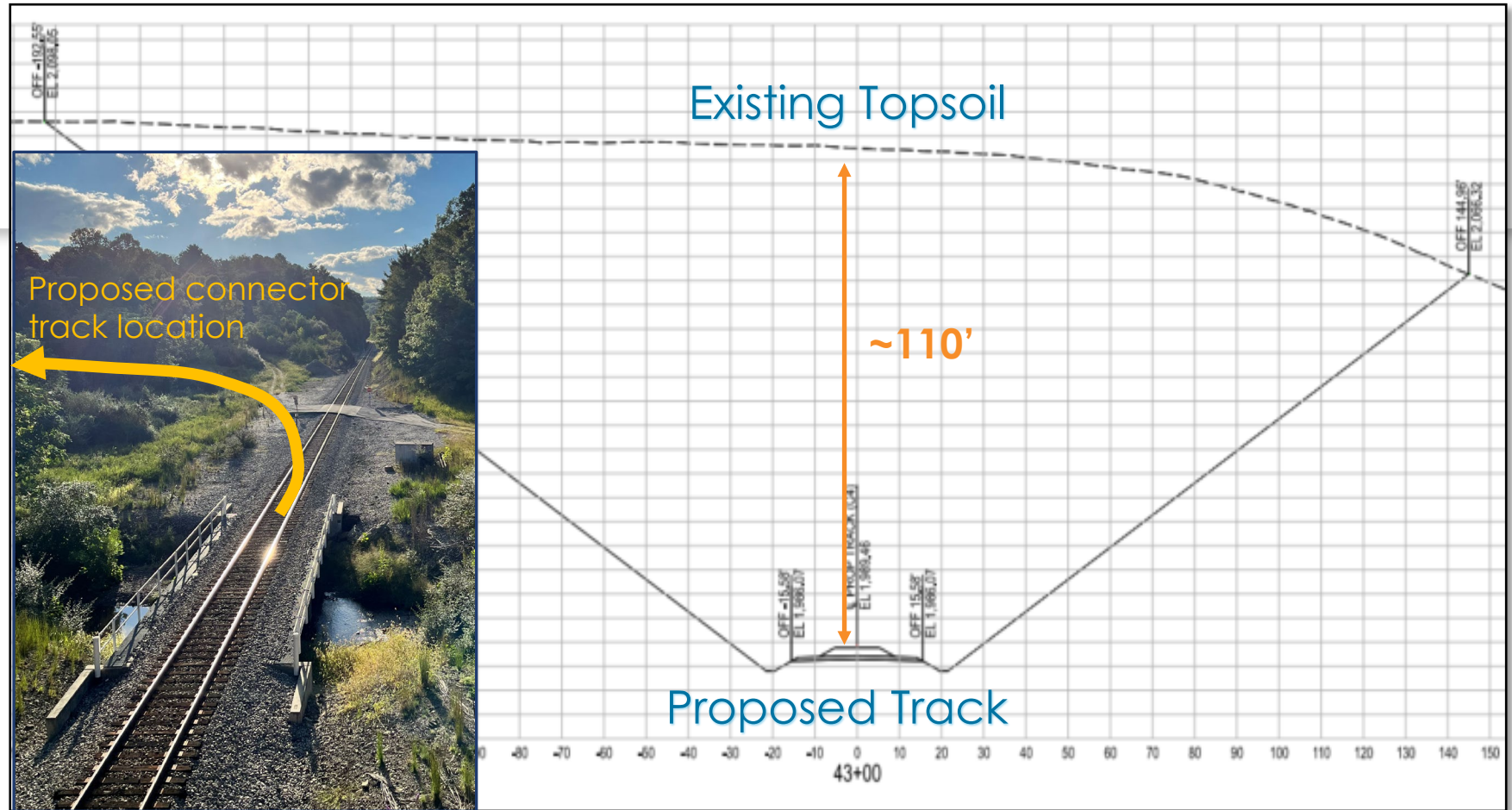
BH12 - Slate Hill Tunnel

***Rock-quality designation (RQD)** is a rough measure of the degree of jointing or fracture in a rock mass. High-quality rock has an RQD of more than 75%, low quality of less than 50%.

CONNECTOR TRACK & EXCAVATION

Key Drivers:

- Over 600,000 cubic yards of material to be removed;
- ~62,000 dump trucks worth of material;
- 3,000' long connection.

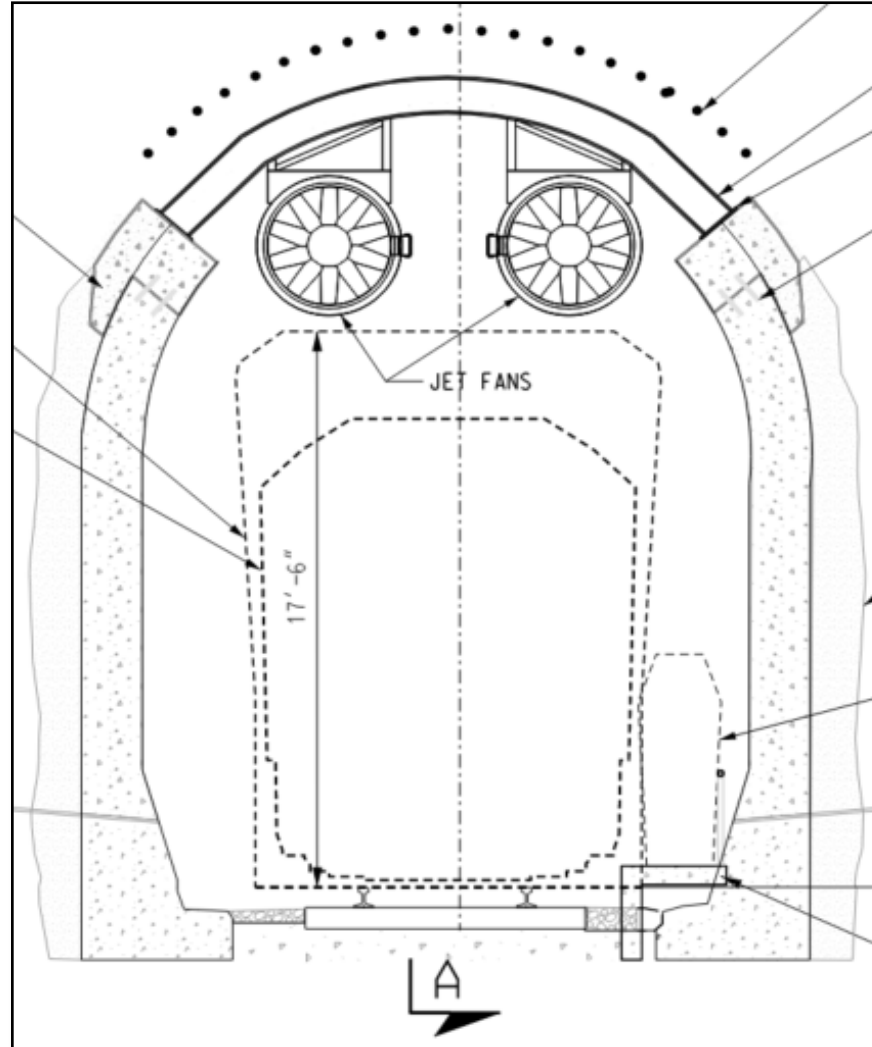


Cross-sectional drawing of proposed connector track

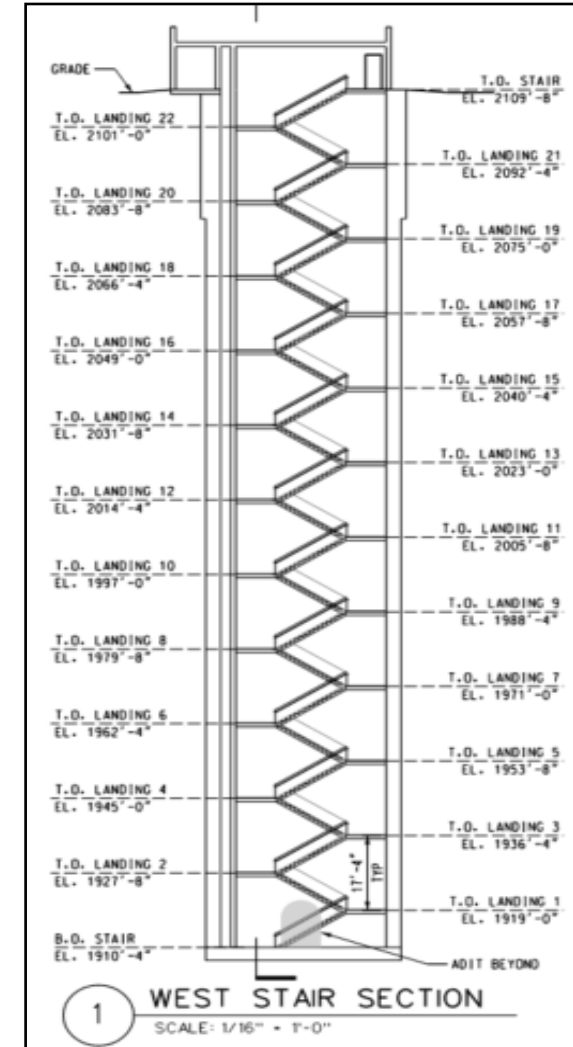
MERRIMAC TUNNEL IMPROVEMENTS

Key Infrastructure:

- Following National Fire Protection Association (NFPA) Standard 130 (industry standard for passenger rail);
- Three ventilation fan banks installed throughout the mile-long tunnel;
- Extend width of tunnel to accommodate emergency egress walkways at track level;
- One 15-story and one 20-story vertical shaft from surface to track level to allow for emergency egress and first responder access.



Merrimac Tunnel



Tunnel Shafts (x2)

PROJECT DEVELOPMENT NEXT STEPS – Engineering, Procurement, and Planning

Engineering:

- Progress 30% PE into 60% Design for Alternative A, B, C
- Conduct supplemental V-Line Infrastructure Study

Procurement:

- Request for Proposal (RFP) to be published for 60% Design in February 2024

Planning and Public Engagement:

- Conduct V-Line Grade Crossing Safety Study
- Public Engagement:
 - NRV Station Authority Board & NRV Passenger Rail meeting – January 25th, 2024
 - Blacksburg Open House – January 29th, 2024
 - Future public meetings to be held throughout 2024 and the life of the project

QUESTIONS?

