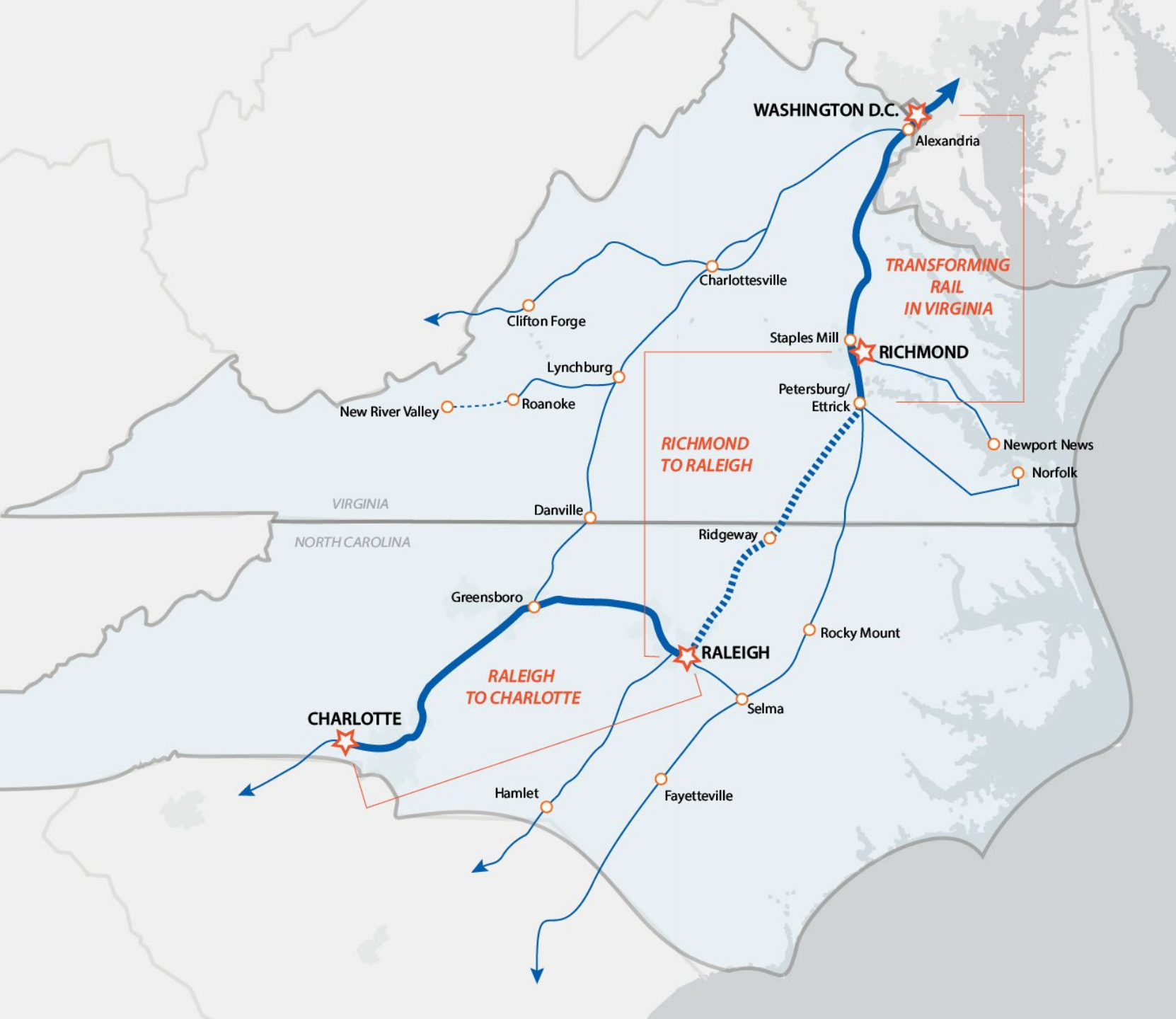


Passenger Rail Service Performance

Jeremy Latimer
Director of Rail Services



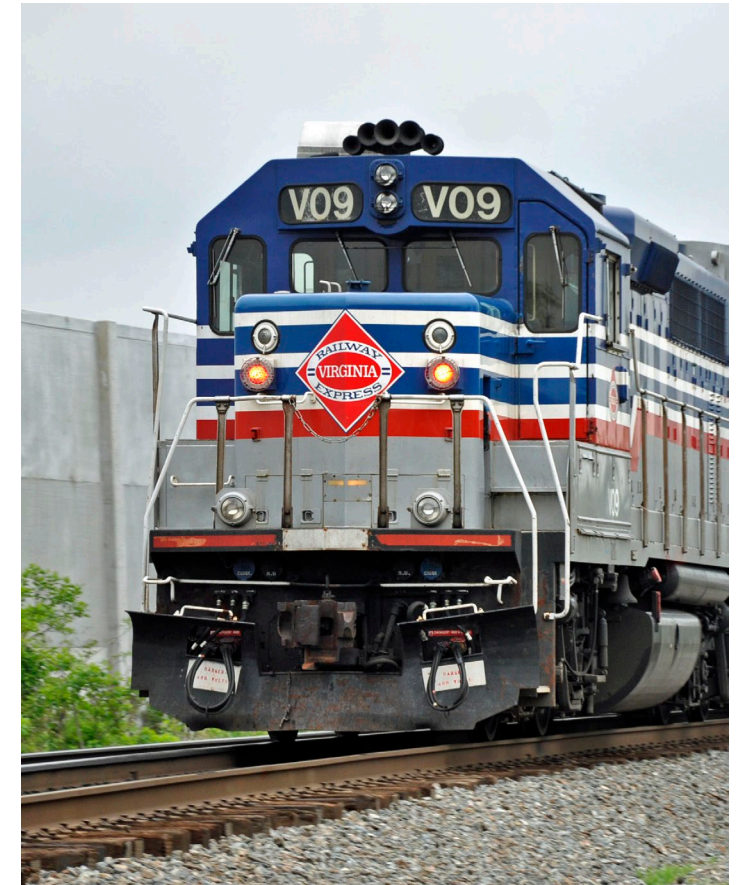
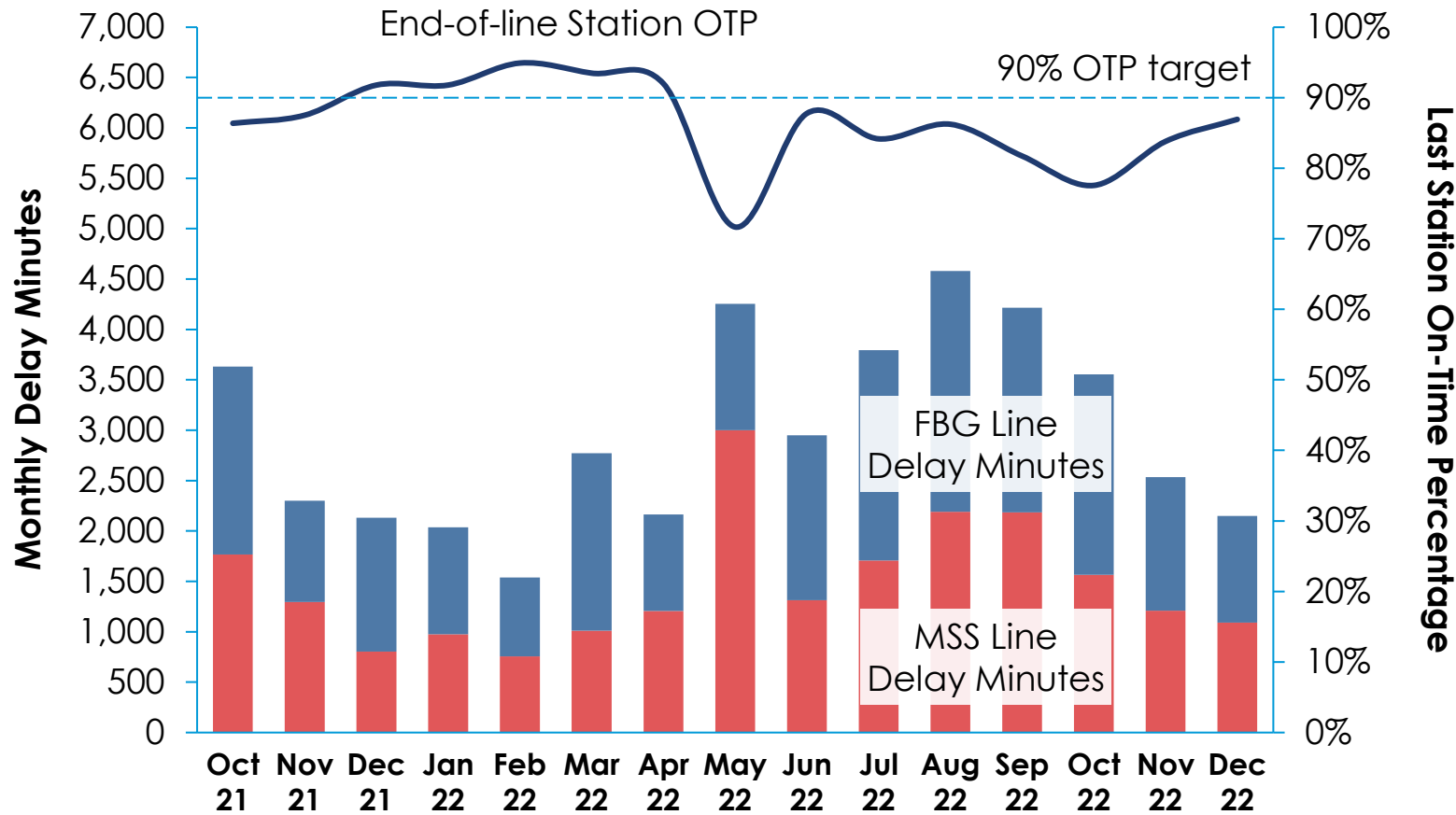
VPRA Board Meeting Update

1. VRE Performance
2. Amtrak Performance



VRE delay minutes and end-of-line station OTP between October '21 and December '22 - Below target since April '22

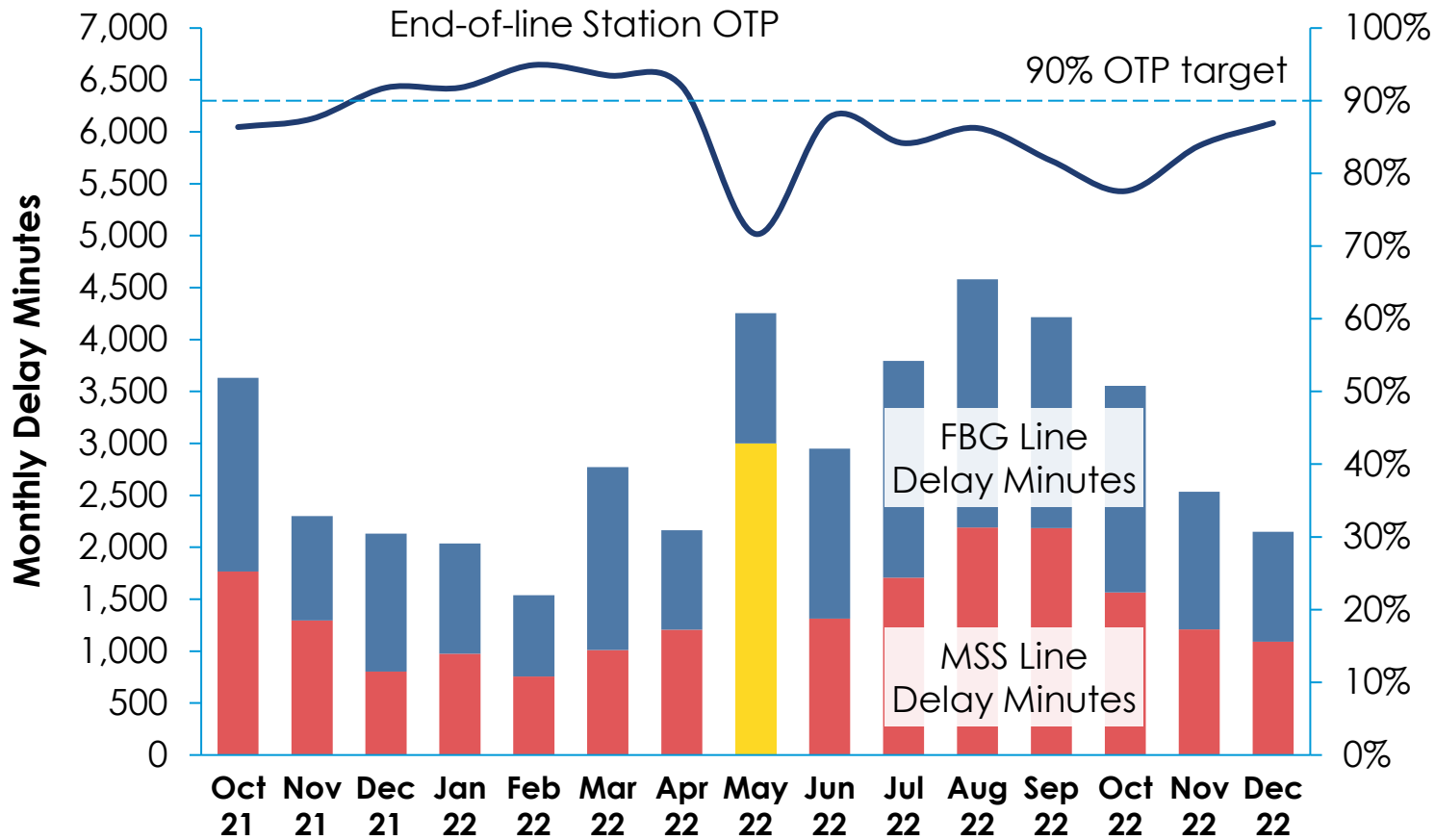
VRE Last Station OTP v. Delay Minutes



(1) OTP excludes OTP on NS Roanoke corridor
 (2) Delay minutes exclude NOD and all delays on NS

VRE delay minutes and end-of-line station OTP between October '21 and December '22 - Below target since April '22

VRE Last Station OTP v. Delay Minutes



Norfolk Southern performed major tie and surfacing work on the Manassas Line in the first three weeks of May

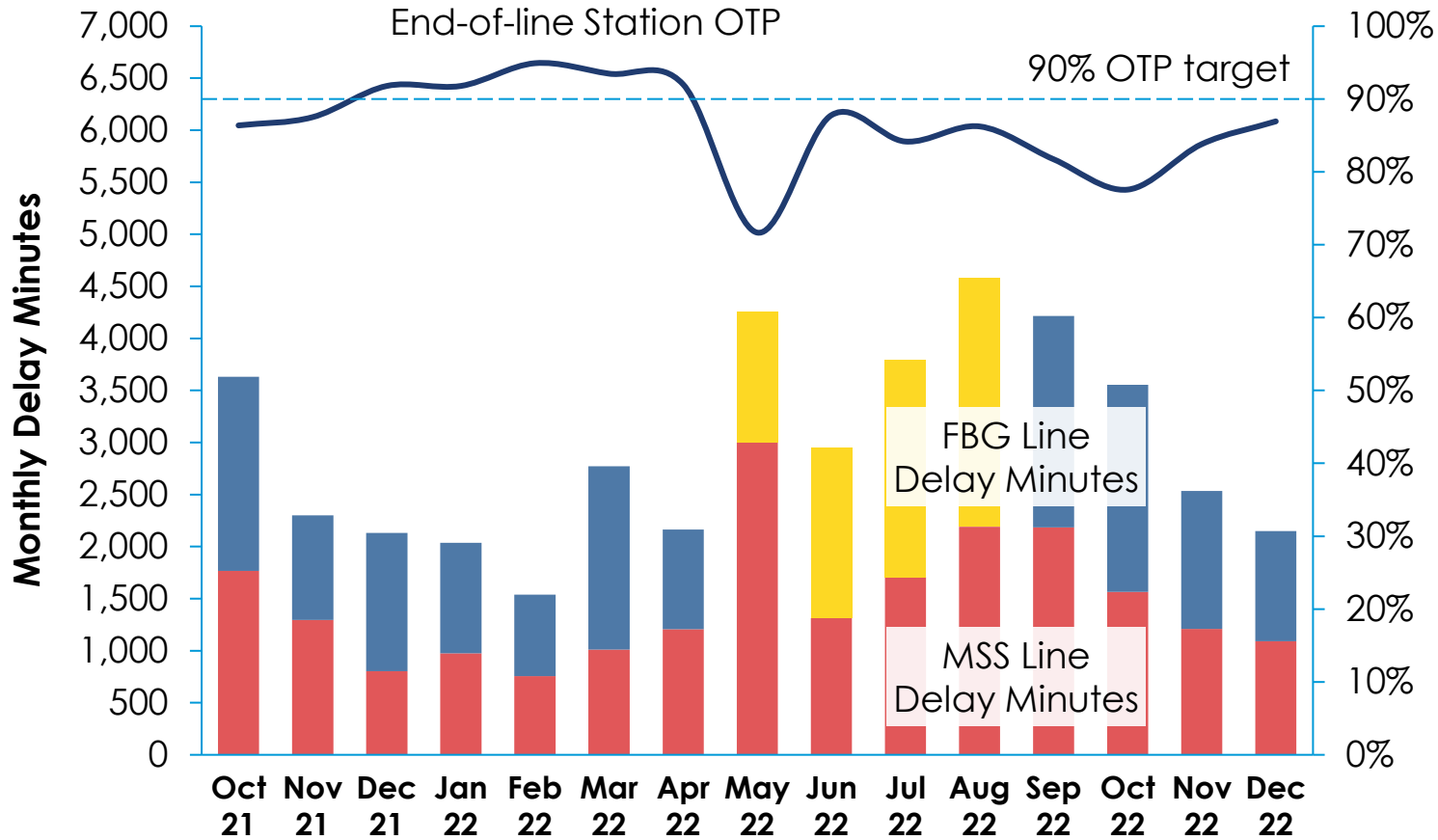
- VRE ran a reduced MSS Line schedule but still suffered delays



(1) OTP excludes OTP on NS Roanoke corridor
 (2) Delay minutes exclude NOD and all delays on NS

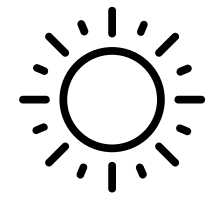
VRE delay minutes and end-of-line station OTP - Below target since April '22

VRE Last Station OTP v. Delay Minutes



54% of days between May 1 and August 31 saw heat-related speed restrictions on CSX in Virginia

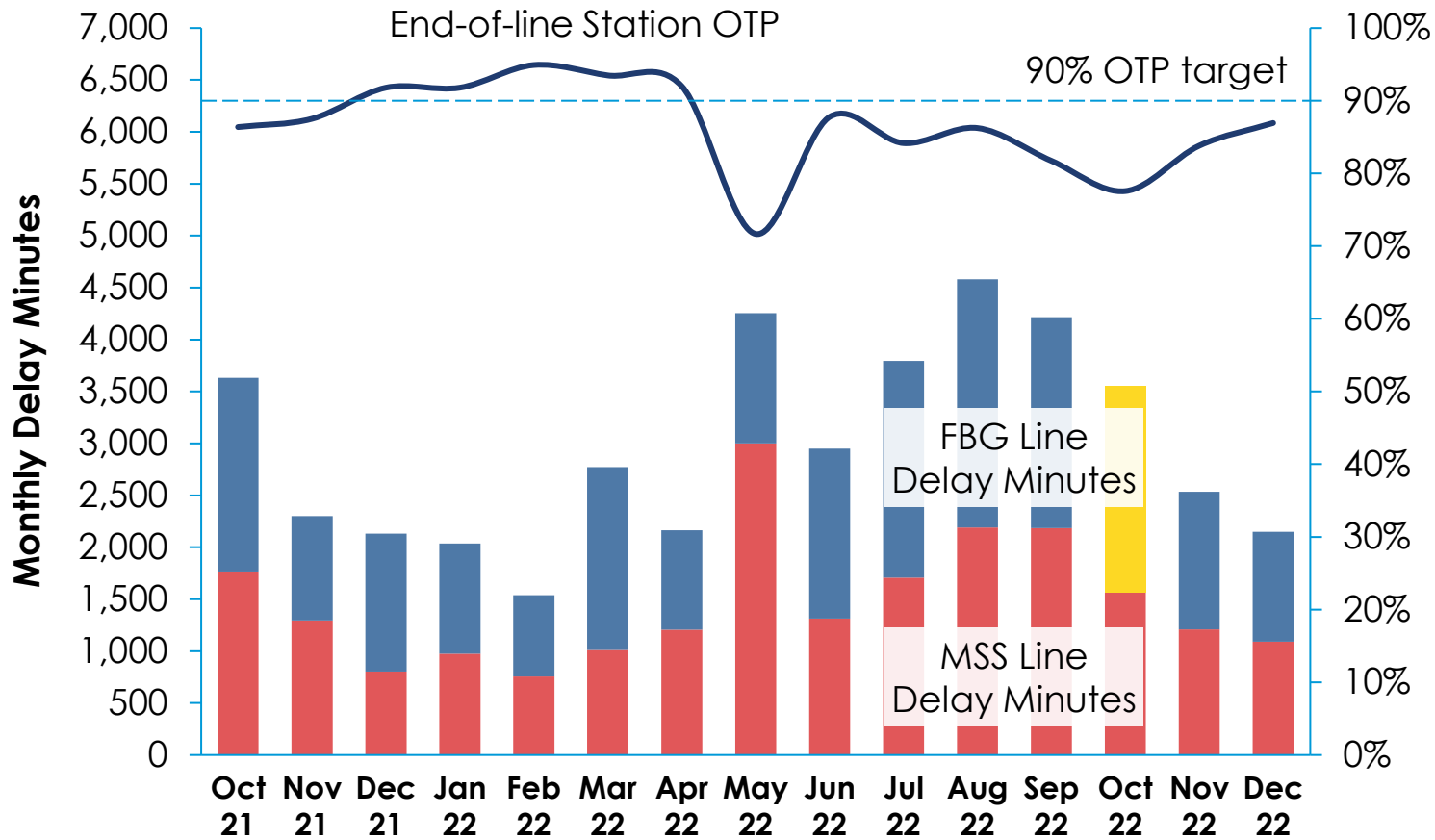
- VRE mitigated OTP impacts by running a temporary summer schedule with longer run times
- Discussions with CSX are ongoing



(1) OTP excludes OTP on NS Roanoke corridor
 (2) Delay minutes exclude NOD and all delays on NS

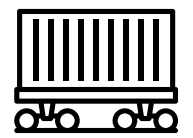
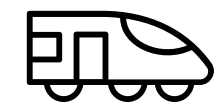
VRE delay minutes and end-of-line station OTP - Below target since April '22

VRE Last Station OTP v. Delay Minutes



CSX maintenance-related speed restrictions north of Quantico caused cascading train interference delays and a dip in October OTP

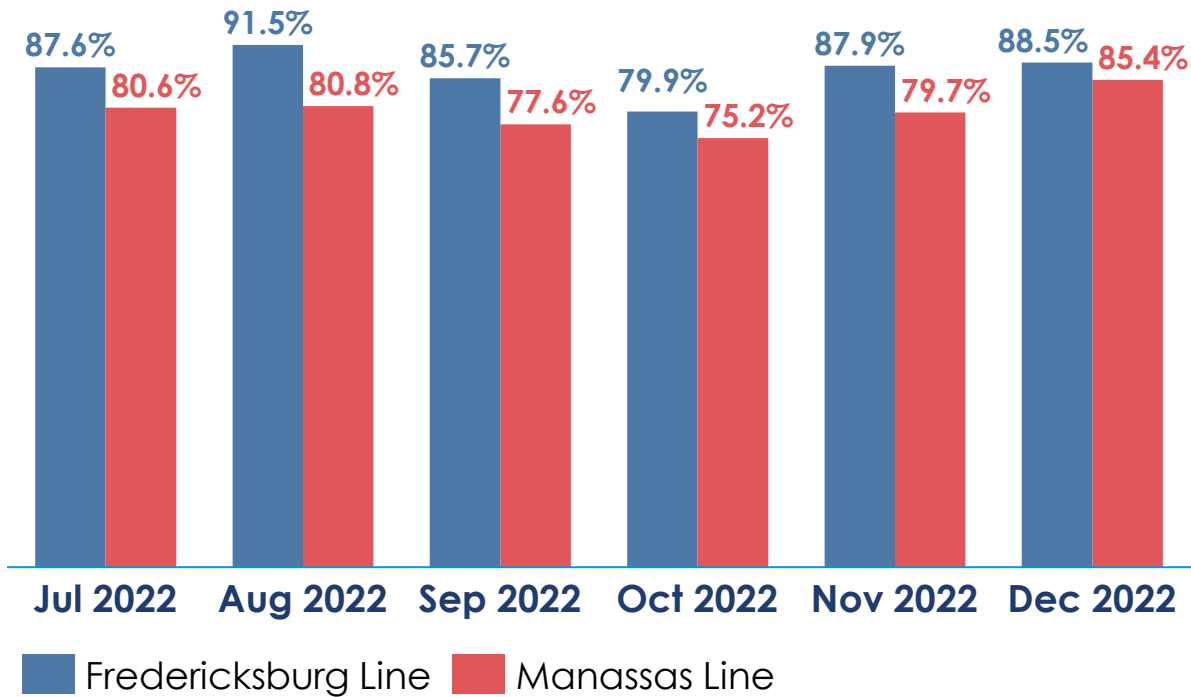
Last Station On-Time Percentage



(1) OTP excludes OTP on NS Roanoke corridor
 (2) Delay minutes exclude NOD and all delays on NS

The Fredericksburg Line shows consistently higher OTP vs the Manassas Line

July-December 2022 On-Time Performance by Line



Manassas Line trains encounter more freight train interference in the morning, causing late turn and train interference delays that cascade into the early PM peak hours

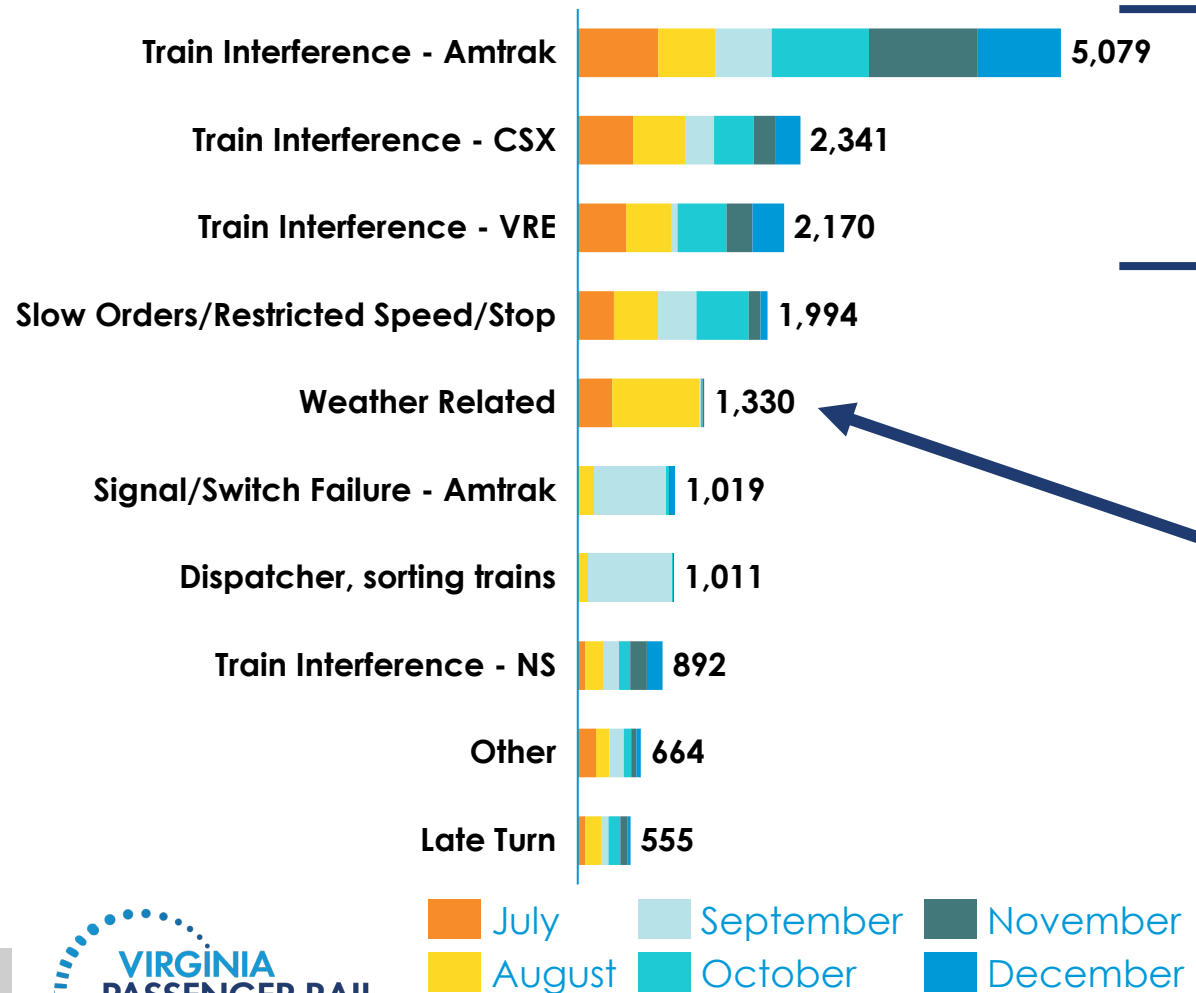
NS local trains cause interference with MSS trains having to single track around them; one conflict has been resolved so far

VRE On Time Threshold:

trains arrive at last scheduled stop within six minutes of schedule

The top three delay causes are all due to train interference

Jul-Dec 2022 Total Delay Minutes by Category¹



Train interference delays are often secondary delays caused by trains operating out of slot for other reasons (i.e., slow orders, crew and mechanical issues, weather, etc.)

Weather-related delays have disappeared since the end of summer heat orders on CSX

(1) Includes top 10 categories with most delay minutes

VPRA Board Meeting Update

1. VRE Performance
2. Amtrak Performance



On Time Performance (OTP) Metrics

Customer OTP

- Percentage of **all customers** arriving at their destination no later than 15 mins after scheduled arrival.
- Recovery in schedule to benefit busiest stations.
- Federal Standard
- Goal: 80%

All Station OTP

- Percentage of **trains** arriving at a station no later than 15 mins after scheduled arrival.
- Not a federal standard
- Identifies where delays happen.

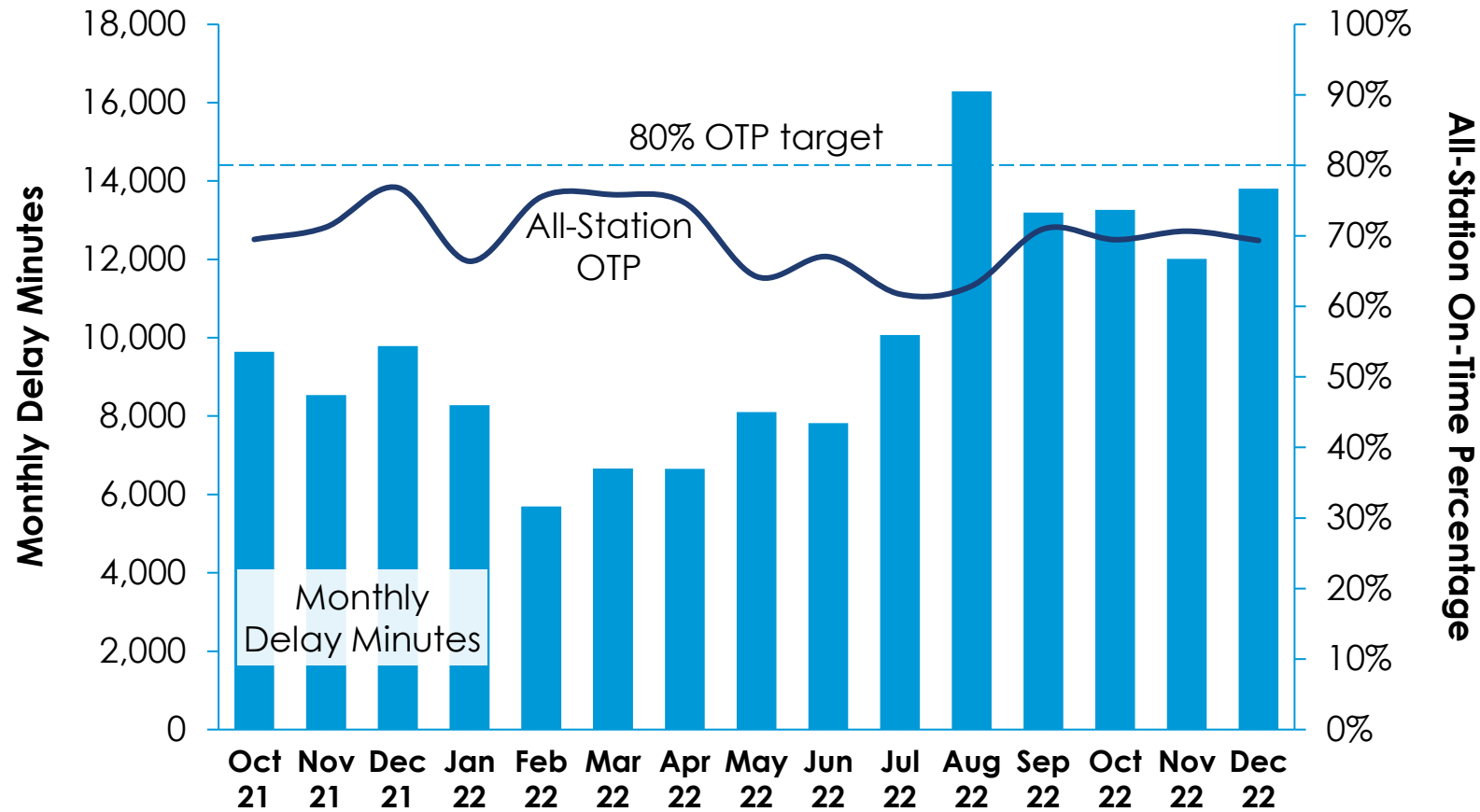
Amtrak Virginia Customer OTP

Route	FFY 2022 Q1	FFY 2022 Q2	FFY 2022 Q3
Richmond, Newport News, Norfolk	74%	75%	75%
Roanoke	81%	77%	65%

- Effective Date of FRA Rule: December 16, 2020
- Standard begins for the first full calendar quarter after May 17, 2021
 - Oct 1, 2021 – Dec 31, 2021 (Q1)
 - Jan 1, 2022 – Mar 31, 2022 (Q2)
 - Apr 1, 2022 – Jun 30, 2022 (Q3)

Amtrak Northeast Regional delay minutes and all-station OTP

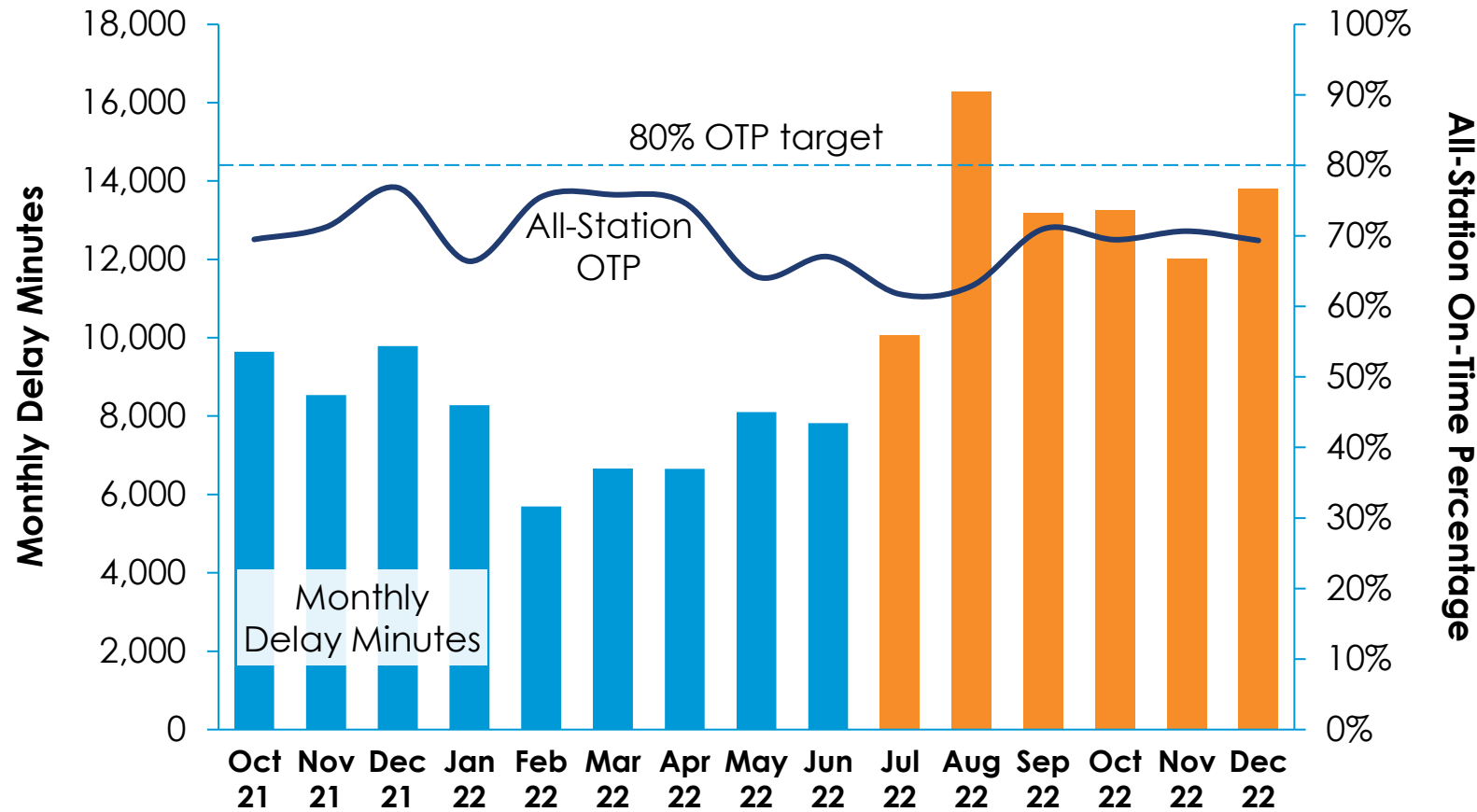
Northeast Regional All-Station OTP v. Delay Minutes (RF&P Corridor Only)^{1,2}



(1) OTP excludes OTP on NS Roanoke corridor
 (2) Delay minutes exclude NOD and all delays on NS

Amtrak Northeast Regional delay minutes and all-station OTP

Northeast Regional All-Station OTP v. Delay Minutes (RF&P Corridor Only)^{1,2}



Northeast Regional service increased on July 11

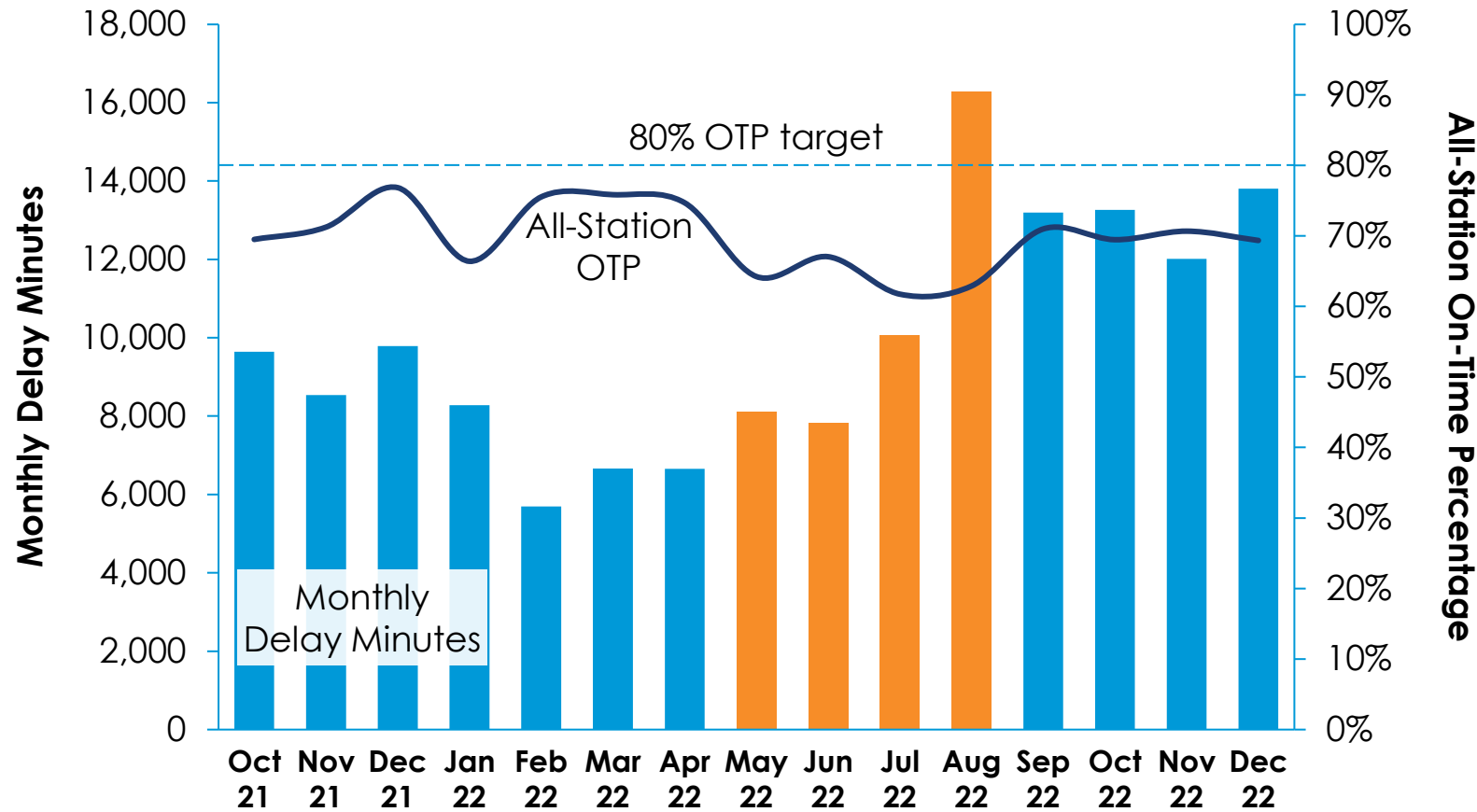
- Resumed 2nd Newport News roundtrip
- New 3rd Norfolk roundtrip
- New 2nd Roanoke roundtrip
(Note: performance data on Norfolk Southern west of Alexandria are excluded)



(1) OTP excludes OTP on NS Roanoke corridor
 (2) Delay minutes exclude NOD and all delays on NS

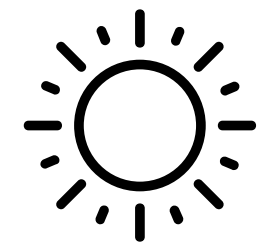
Amtrak Northeast Regional delay minutes and all-station OTP

Northeast Regional All-Station OTP v. Delay Minutes (RF&P Corridor Only)^{1,2}



54% of days between May 1 and August 31 saw heat-related speed restrictions on CSX in Virginia

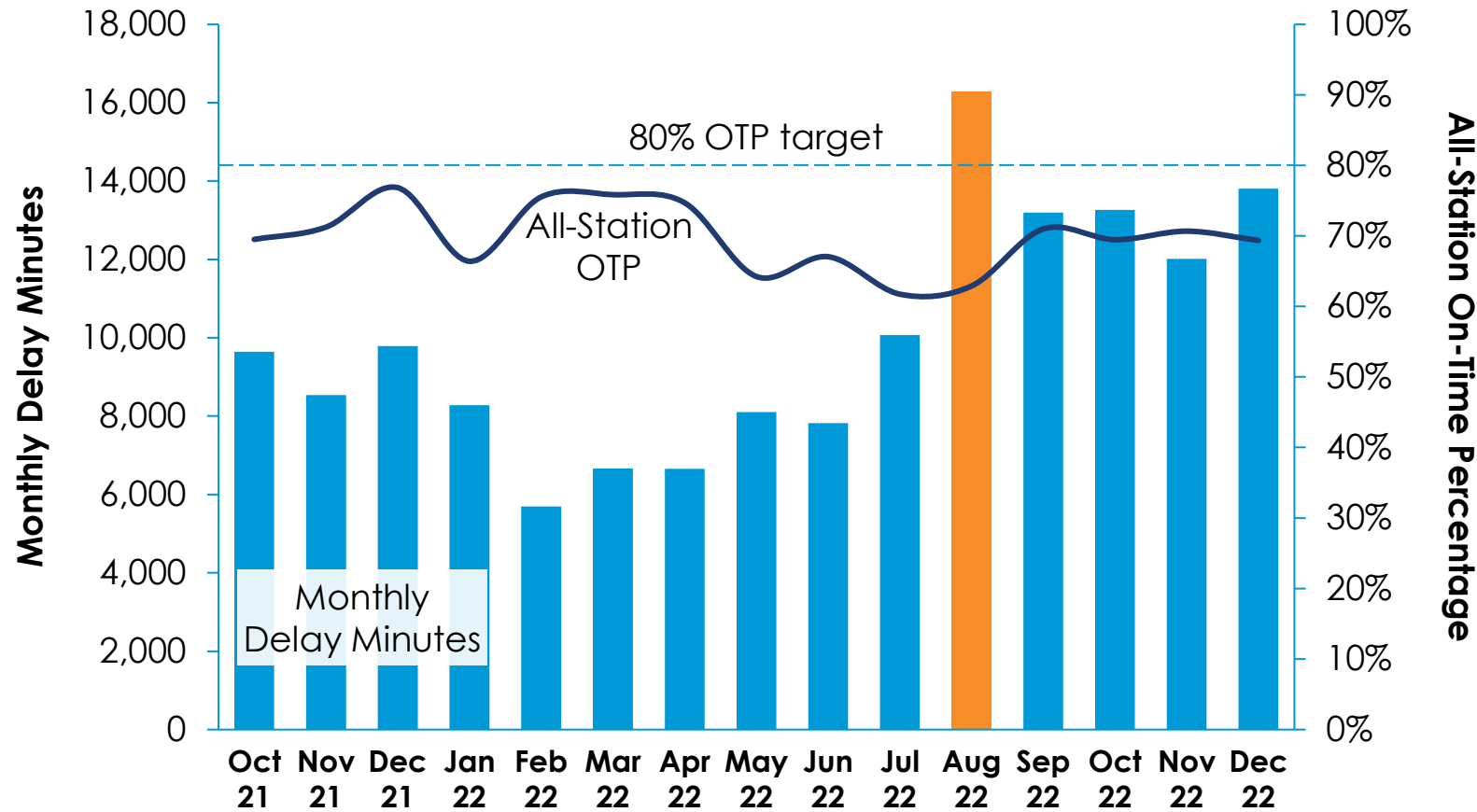
- Amtrak did not alter its schedules for heat orders
- Performance Committees will monitor and discuss Heat Orders



(1) OTP excludes OTP on NS Roanoke corridor
 (2) Delay minutes exclude NOD and all delays on NS

Amtrak Northeast Regional delay minutes and all-station OTP

Northeast Regional All-Station OTP v. Delay Minutes (RF&P Corridor Only)^{1,2}



Multiple delay causes hurt service in August

- Heat orders
- Maintenance-related slow orders
- Major rainstorm event on Aug 10
- Persistent congestion issues at Wash. Union Station that spiked on Aug 26

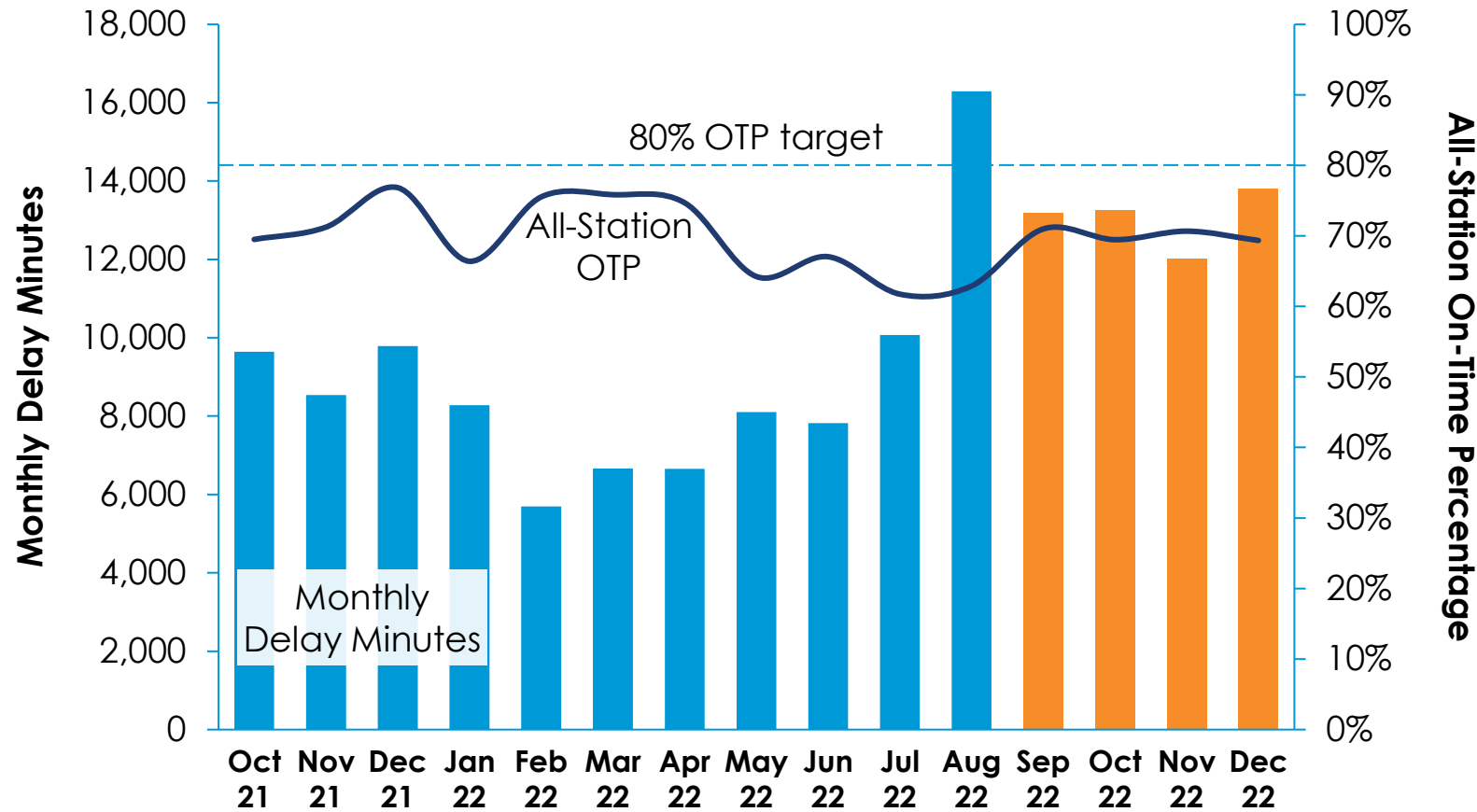
Trains operating out of slot caused cascading train interference delays



(1) OTP excludes OTP on NS Roanoke corridor
 (2) Delay minutes exclude NOD and all delays on NS

Amtrak Northeast Regional delay minutes and all-station OTP between October '21 and December '22

Northeast Regional All-Station OTP v. Delay Minutes (RF&P Corridor Only)^{1,2}



CSX replaced ties on the Long Bridge starting in September, causing slow order delays

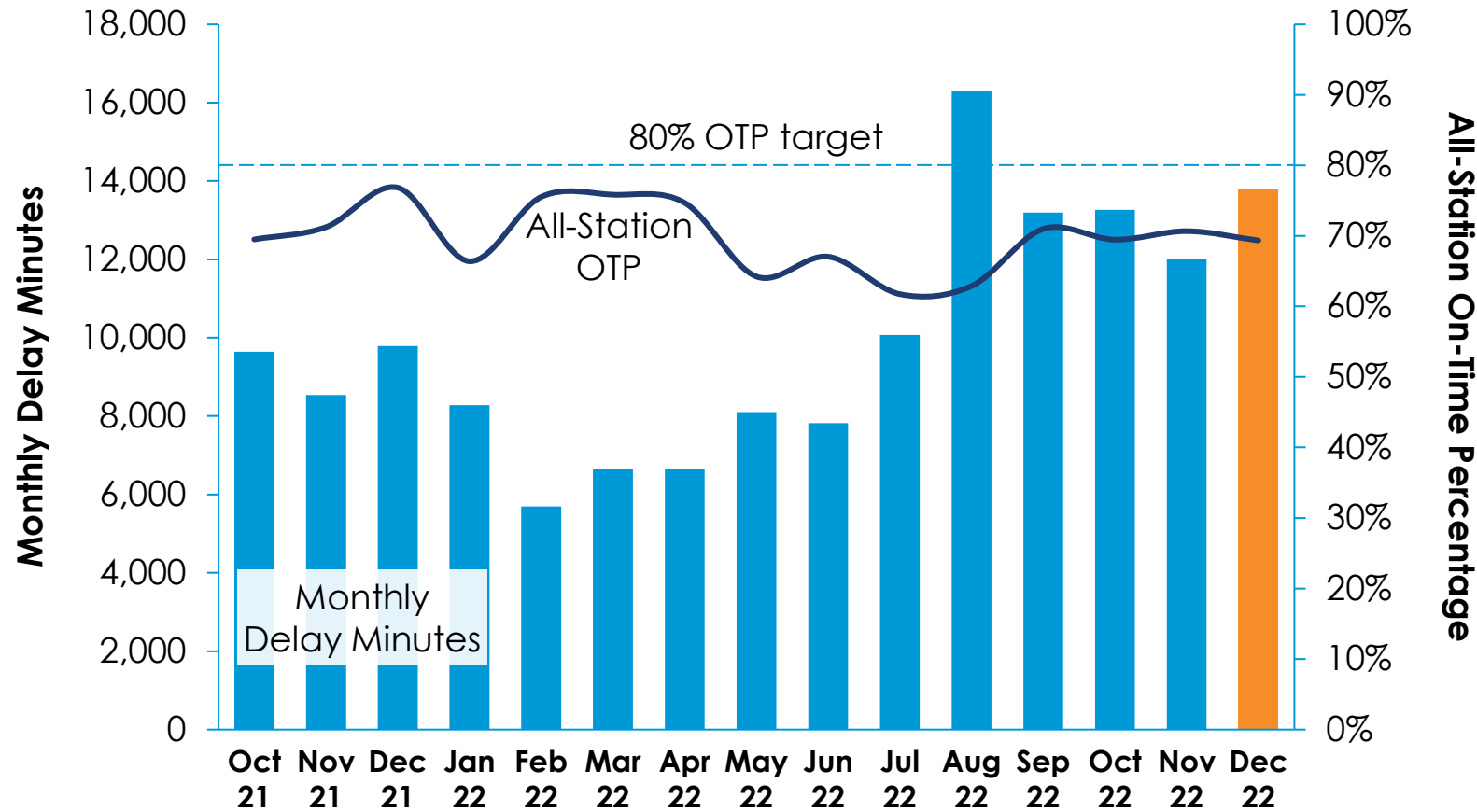


The end of heat orders in September allowed OTP to recover to around 70% through year-end

(1) OTP excludes OTP on NS Roanoke corridor
 (2) Delay minutes exclude NOD and all delays on NS

Amtrak Northeast Regional delay minutes and all-station OTP between October '21 and December '22

Northeast Regional All-Station OTP v. Delay Minutes (RF&P Corridor Only)^{1,2}



Pre-Christmas bomb cyclone caused delays to trains in December

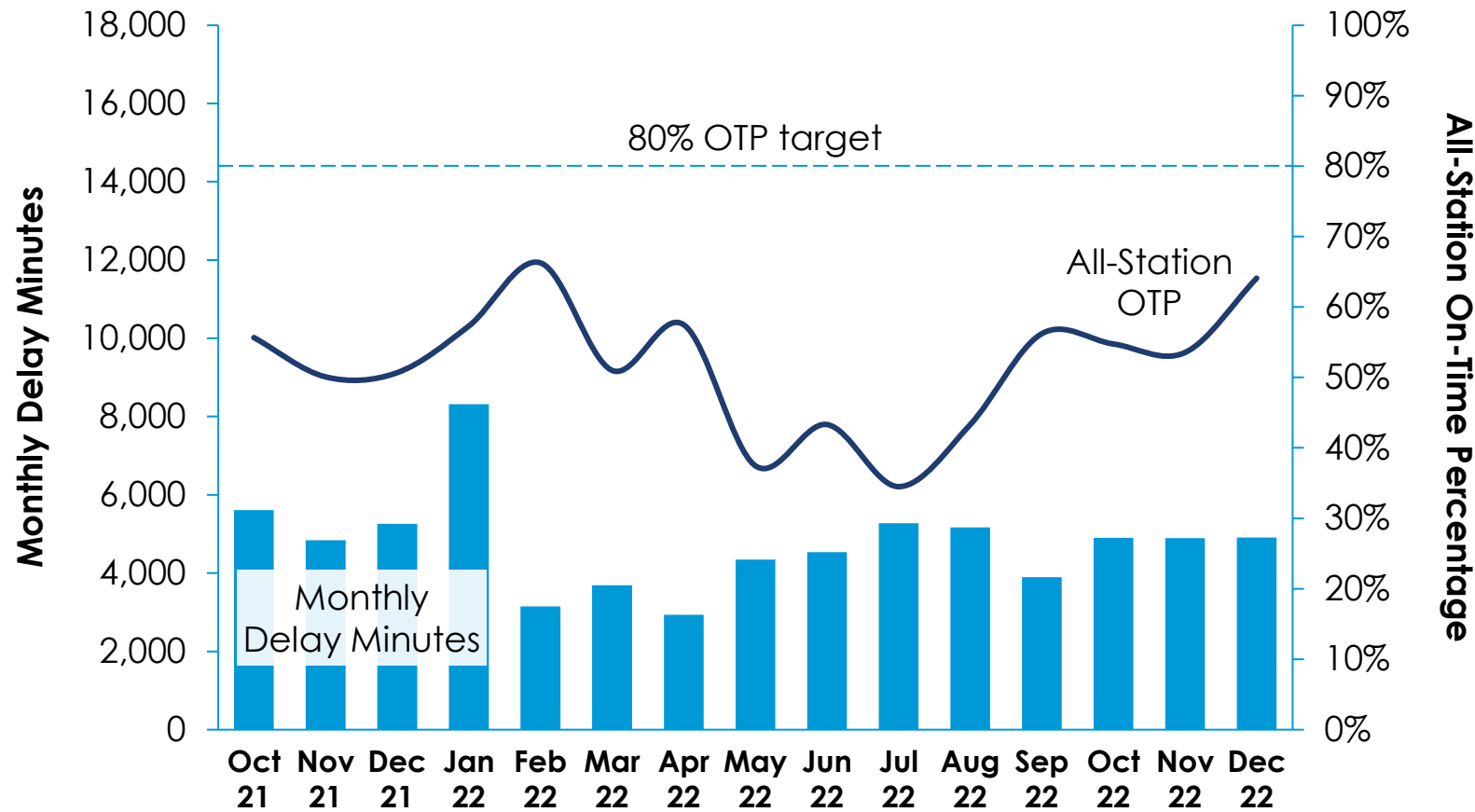
Infrastructure, equipment, and crew-related delays also affected OTP



(1) OTP excludes OTP on NS Roanoke corridor
 (2) Delay minutes exclude NOD and all delays on NS

Amtrak Long Distance delay minutes and all-station OTP between October '21 and December '22

Long Distance All-Station OTP v. Delay Minutes (RF&P Corridor Only)^{1,2,3}



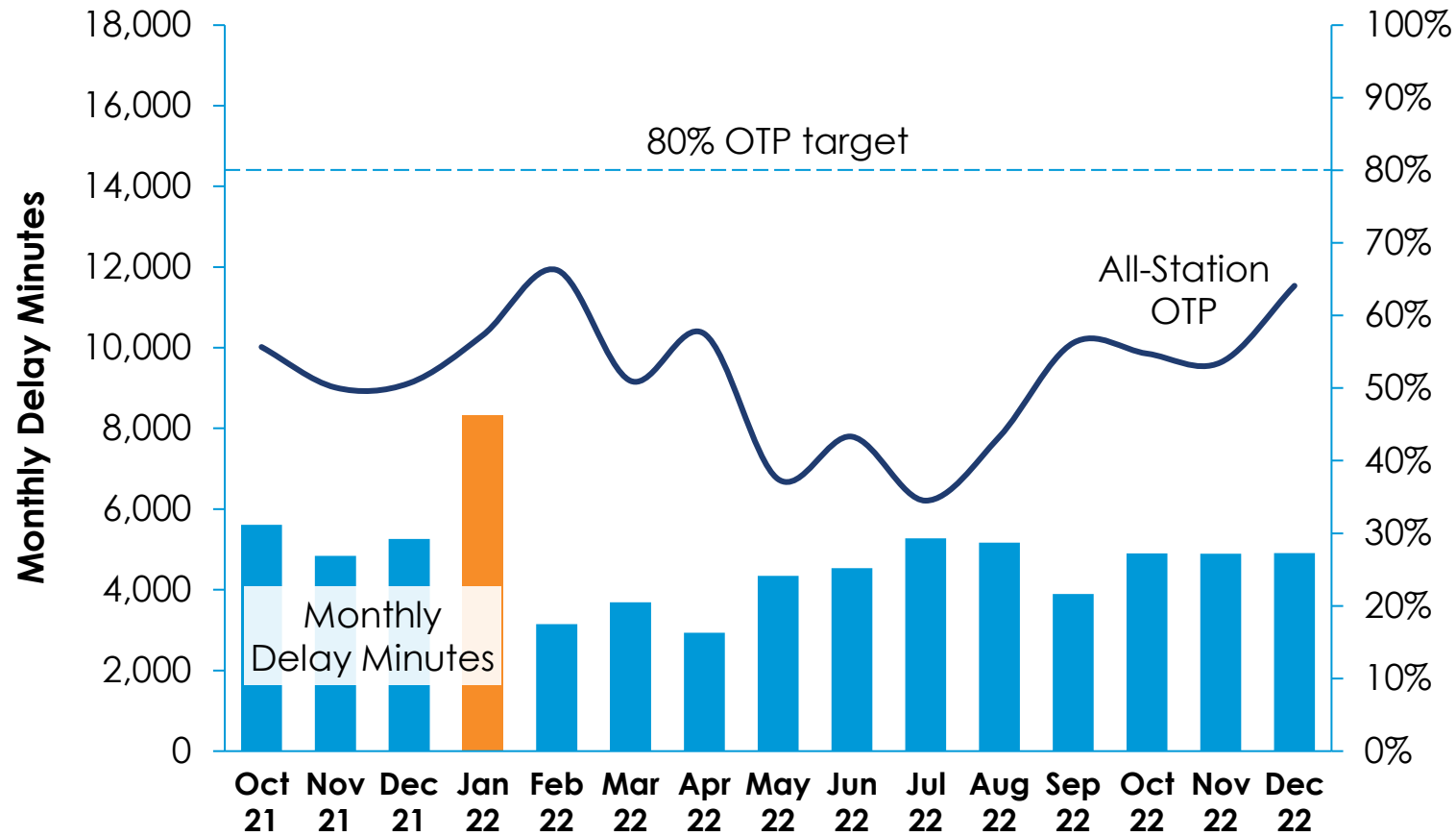
The monitored “Long Distance” train services are:

- Carolinian
- Palmetto
- Silver Meteor
- Silver Star

(1) OTP excludes OTP on NS Roanoke corridor
 (2) Delay minutes exclude NOD and all delays on NS
 (3) Long distance trains include Carolinian, Palmetto, Silver Meteor, Silver Star

Amtrak Long Distance delay minutes and all-station OTP between October '21 and December '22

Long Distance All-Station OTP v. Delay Minutes (RF&P Corridor Only)^{1,2,3}



A major snowstorm on Jan 2 and 3 caused several extreme delay events

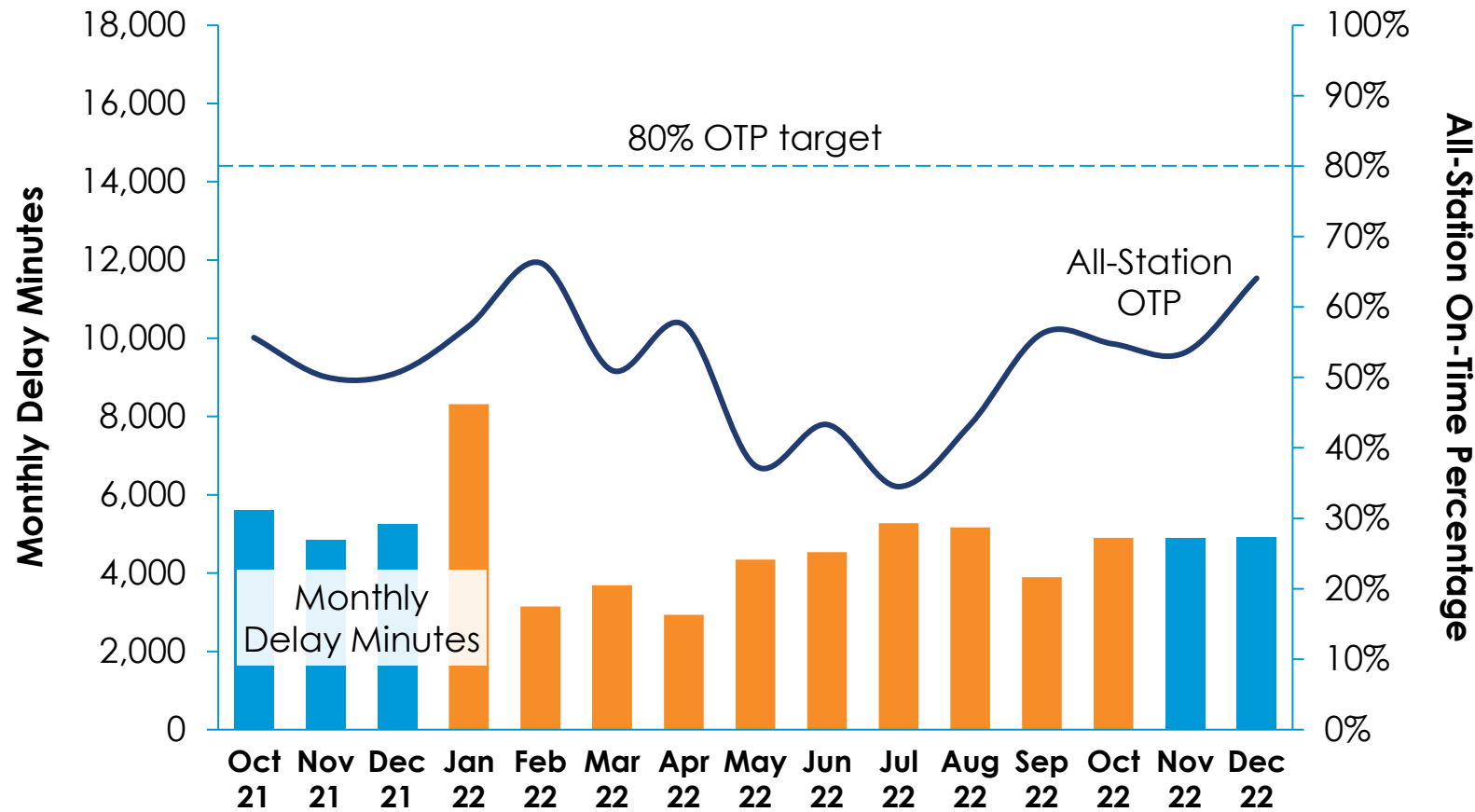
- 21-hour delay for NB Palmetto
- 14+ hour delay for NB Silver Star
- 12-hour delay for NB Silver Meteor



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 (2) Delay minutes exclude NOD and all delays on NS
 (3) Long distance trains include Carolinian, Palmetto, Silver Meteor, Silver Star

Amtrak Long Distance delay minutes and all-station OTP between October '21 and December '22

Long Distance All-Station OTP v. Delay Minutes (RF&P Corridor Only)^{1,2,3}



Amtrak suspended the Silver Meteor from mid-January to mid-October

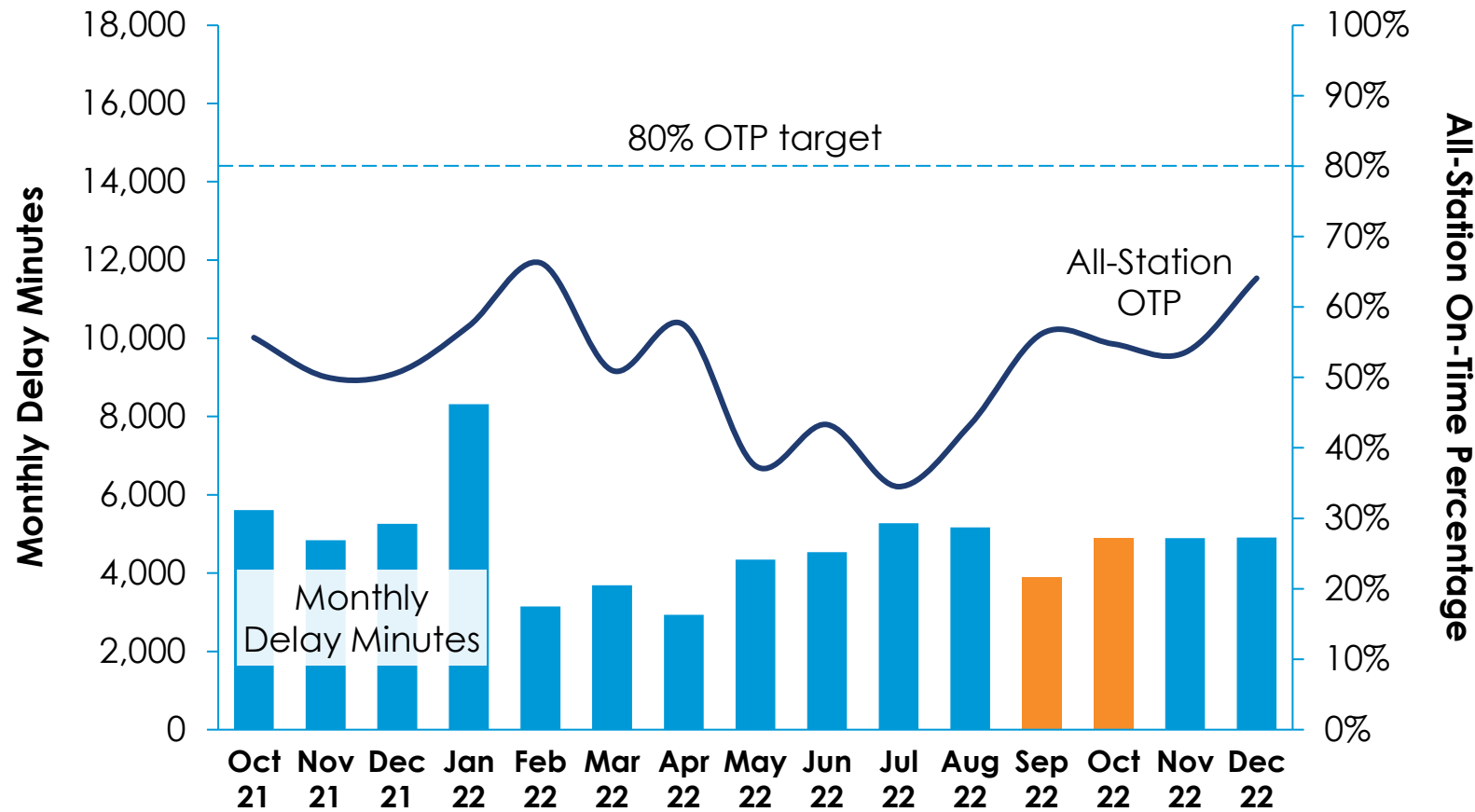
The Silver Star operated with a longer consist requiring double stops at many stations

Northbound Silver Star train 92 had extremely low OTP, causing cascading delays for other trains in VA

(1) OTP excludes OTP on NS Roanoke corridor
 (2) Delay minutes exclude NOD and all delays on NS
 (3) Long distance trains include Carolinian, Palmetto, Silver Meteor, Silver Star

Amtrak Long Distance delay minutes and all-station OTP between October '21 and December '22

Long Distance All-Station OTP v. Delay Minutes (RF&P Corridor Only)^{1,2,3}



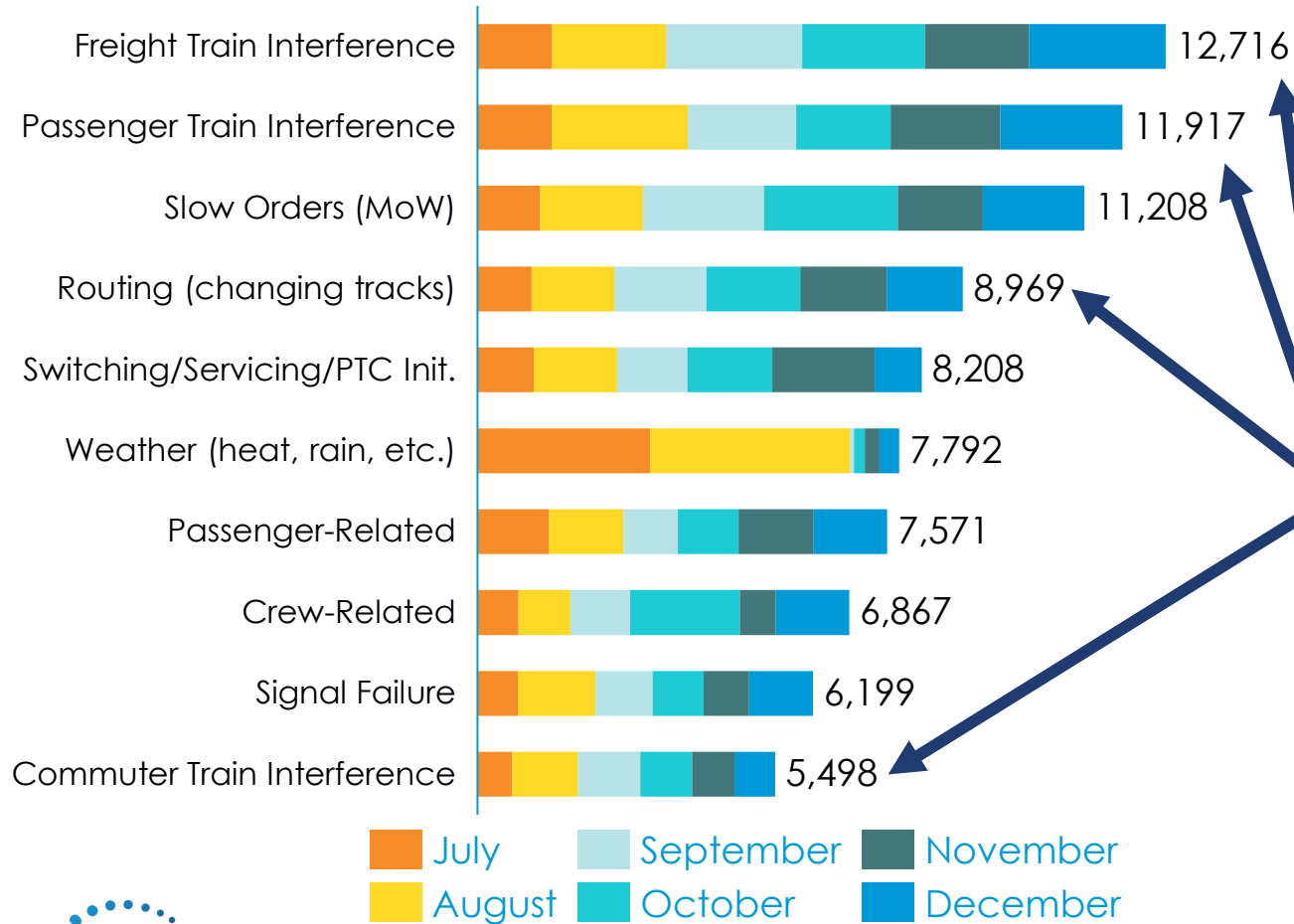
Between Sept 27 and Oct 2, Hurricane Ian caused Silver Star and Palmetto cancellations as well as the delay of the Silver Meteor resumption



(1) OTP excludes OTP on NS Roanoke corridor
 (2) Delay minutes exclude NOD and all delays on NS
 (3) Long distance trains include Carolinian, Palmetto, Silver Meteor, Silver Star

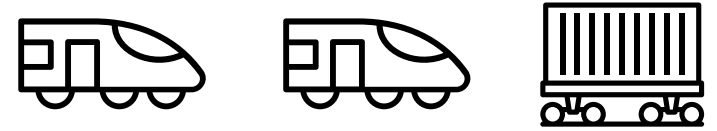
Weather has dropped from the top four delay causes after the end of summer heat orders; The top two delay causes are train interference

Jul-Dec 2022 Delay Min on RF&P Corridor by Category^{1,2}



Freight interference is down 16% year-over-year from 3,000 min in Dec 2021 to 2,530 min in Dec 2022;




Train interference and routing delays are often secondary delays caused by trains operating out of slot for other reasons; Unclear if freight traffic is trending up or down



(1) Does not include NOD delays or delays on NS
 (2) Includes top 10 categories with most delay minutes

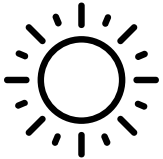

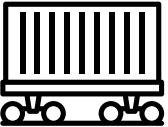
We do a more detailed analysis on 1-2 key issues at every performance monitoring meeting

Jul-Dec 2022 Analytical Deep Dives

	Topic	Findings	Current Status
	Silver Star Performance	The “Super” Star arrived in VA out of slot almost every day, causing disruption to other services	Amtrak resumed the Silver Meteor in mid-October; Currently monitoring the Silver Star and Meteor
	Late Arrivals off the NEC / Train 99	Trains arrive off Amtrak-controlled territory in VA out of slot, leading to congestion in WAS and poor OTP	Amtrak investigating changes to train 99 schedule to improve OTP into WAS
	Crew Shortages	Amtrak struggles to staff Virginia service, leading to cancellations, WAS delays, and longer station stops	Amtrak is increasing recruiting efforts

We do a more detailed analysis on 1-2 key issues at every performance monitoring meeting

Jul-Dec 2022 Analytical Deep Dives

	Topic	Findings	Current Status
	Heat Orders	Summer heat order delays are significant and currently unmitigated by Amtrak and CSX	Seeking understanding of existing policies, track conditions, and mitigation strategies.
	NOD – NO Delay (train waiting at platform for scheduled departure time)	Several trains have both typically unused schedule pad and high delay minutes	Updating analysis with post-summer data to find cases where pad time can be used more effectively
	Freight Train Interference	Freight interference occurs irregularly, mostly concentrated in Richmond around Acca Yard	Continuing to monitor

Next Steps

- Compare Year over Year Performance
- Inventory of significant events to improve year over year performance
- Coordinate Maintenance, Construction, and known events to enable mitigation work and communication with customers
- Continue deep-dive analysis to understand impacts
- Future Amtrak Board presentation